Conditions of Uncertainty
The Social and Political Dimensions of Risk Management in the Transition to the Biomedical Era of HIV Prevention

Mark Gaspar

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Dr. Philippe Caignon, Etude Françaises	Chair
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Dr. Valérie de Courville-Nicol, Sociology & Anthropology	Examiner
Dr. Marc Lafrance, Sociology & Anthropology	Examiner
Dr. Viviane Namaste, Simone de Beauvoir	Supervisor

Approved by

Dr. Bina Freiwald
Chair of Department or Graduate Program Director

2017

Dr. André Roy
Dean of Faculty

ABSTRACT

Conditions of Uncertainty: The Social and Political Dimensions of Risk Management in the Transition to the Biomedical Era of HIV Prevention

Mark Gaspar, Ph.D.
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The HIV prevention field in Canada has failed to achieve a *stabilising point,* a lack of consensus on the effectiveness of risk management strategies, in its third decade, the *transition to the biomedical era of HIV prevention*. Under these conditions of uncertainty we have witnessed *epistemic and social and political uncertainties* proliferate. Experts debate long-standing and emerging prevention strategies. Newly produced knowledge complicates our understanding of gay male HIV prevention but often lacks appropriate validity and generalizability. Governing practices are implemented to respond to this knowledge, but in conflicting ways. For everyday social actors, these uncertainties morph into complicated forms of *experiential uncertainty*.

I first present this dissertation as a work of *critical social science on HIV*. Drawing from *critical studies on risk and uncertainty* I then produce an original analytic framework termed the *uncertainty triad*. I then examine biomedical and public health research and critical perspectives on gay male HIV prevention, arguing that the field cultivates uncertainty to "beat-up" the epidemic.

I then present data from 33 in-depth interviews conducted with young HIV-negative gay men to discuss their everyday confrontations with *serostatus uncertainty* (an inability to confirm one's HIV-negativity). This is a move away from analysing motivations for condomless anal sex and focusing exclusively on "high risk men." To avoid exclusively tapping into the HIV *epistemic community*, the interviewees hadn't previously participated in a research interview about HIV and had no regular involvement with an AIDS service organisation.

I then present an original theory on *risk disposition*, which investigates a social actor's processes of *risk reflexivity* and his *tolerance to serostatus uncertainty*. Social conditions affecting the experiences of health maintenance, institutional navigation and sexual practice can shape tolerance to serostatus uncertainty by minimising or fostering *anxiety*. Drawing on the notion of *sexual practice* over *sexual behaviour*, I then examine HIV-negative gay men's confrontations with HIV-related ethico-political challenges such as HIV stigma, serosorting and the criminalisation of HIV non-disclosure. I argue that biomedical optimism does not necessarily lead to the abandonment of condoms among HIV-negative gay men and that many remain sceptical of the prevention benefits of HIV treatments.

This dissertation is dedicated to my parents.

Also in loving memory of

Avo Zenadia DaSilva

and

Tiu Manuel Gaspar

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This is our true state; this is what makes us incapable of certain knowledge and absolute ignorance. We sail within a vast sphere, ever drifting in uncertainty, driven from end to end. When we think to attach ourselves to any point and fasten to it, it wavers and leaves us; and if we follow it, it eludes our grasp, slips past us, and vanishes forever. Nothing stays for us. This is our natural condition, and yet most contrary to our inclination; we burn with desire to find solid ground and an ultimate sure foundation whereon to build a tower reaching to the Infinite. But our whole groundwork cracks and the earth opens up to abysses.

Blaise Pascal, *Pensée*

Science is often misrepresented as "the body of knowledge acquired by performing replicated controlled experiments in a laboratory." Actually, science is something much broader: the acquisition of reliable knowledge about the world.

Jared Diamond, *Collapse*

Introduction

Conditions of Uncertainty

> That said, negotiating HIV, that's a reality that is absolutely part of the gay experience in a way that is not part of the straight experience. My straight friends just don't even get it. They just have no idea. Conversely, every gay man I've ever met has had a story to tell, or like [has] admitted their deep-seated fears about HIV, or like, has some kind of personal experience with that reality.
>
> -Nick (Interviewee)

> I think that was sort of a waking up to, I think realizing that [HIV] was always going to be part of the equation, like that this was the new normal, was being worried about it consistently.
>
> -Terry (Interviewee)

Uncertainty is a powerful force. That which we do not fully know or completely understand threatens our livelihood and can throw us suddenly and unexpectedly off our desired path. Hence for some, the need to seek out answers and gain resolve, to evaporate lingering doubts, suspicions and concerns, may feel insatiable. The desire to eliminate uncertainty, or at least reduce its effects, thus plays a significant role in guiding the decision-making processes of social actors who try their best to manage risk and ambiguity in an effort to gain some control over their life's direction. As such, uncertainty remains a pervasive component of human existence and social relations, incorporating itself into the very minutiae of the everyday. However, when it comes to matters of health and illness, uncertainty no longer appears mundane. Indeed, how we confront uncertainty can be a question of ability or disability, happiness or suffering. It can be a matter of life or death.

This dissertation is about uncertainty. It is a critical reflection on how everyday people cope through extended periods of facing the unknown and how they come to moralise and politicise that which is ambiguous, but potentially life threatening. It is also a reflection on how scientists, institutions and community advocates cultivate doubt, using it as a tool to govern the conduct of citizens in order to achieve diverse biopolitical ends.

In particular, the following pages will examine the role of uncertainty in the recent years of the HIV epidemic in Canada, specifically examining its effect on young HIV-negative gay men (that is, men who are *not* currently knowingly infected with the virus).[1] Everyday, countless numbers of these social actors assess themselves as being at-risk for HIV. Their probability for infection may be high or low, possibly even just a theoretical concern. However, regardless of their level of sexual risk-taking these men now face *serostatus uncertainty*, the general experience of not knowing for certain whether or not one remains HIV-negative or whether one has seroconverted (has become HIV-positive, a person permanently infected and living with HIV). In order to gain clarity, these social actors may one day seek an HIV test, the results of which will greatly determine what their future will look like.

What is it like to live one's entire sexual and romantic life with serostatus uncertainty as a constant consideration? What is it like to have to constantly negotiate HIV risk in each new sexual encounter? What is it like to frequently go through periods of not knowing your HIV status? What are the broader social and political effects of serostatus uncertainty? In the following pages, I shall answer these questions by closely examining how the experience of being at-risk for HIV and confronting the challenges of HIV prevention practices is a pivotal one in the lives of HIV-negative gay men, an essential aspect of how these social actors gain control over their life's direction, over their sexuality, health and bodies. While this dissertation has numerous analytical layers and arguments, understanding the experiences of serostatus uncertainty and the lingering concern young HIV-negative gay men have over seroconversion is this project's core objective.

This dissertation has two main intersecting theses. First, I will argue that the field of HIV prevention research and services has failed to achieve a stabilising point in its third decade. By this I principally mean that experts have failed to reach a consensus on many long-standing and newly emerging prevention issues, often generating a series of contradictory and ambiguous research, education and policies to help address the threat of HIV. There has been a consistent lack of congruence among knowledge production, governing practices and the everyday

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[1] Note to readers: Intermediate comprehension of HIV concepts and prevention practices is necessary to understand the scholarly arguments put forth in this dissertation. Hence chapter two provides an overview of key biological and behavioural components of HIV prevention and gay male sexual practice. Throughout this introduction, brief parenthetical definitions will be used to guide readers along when the meaning of the HIV-related concept is not directly evident. Alternatively, readers may choose to skip forward to chapter two before returning to the introduction.

experience of managing HIV risk, as each of these domains of uncertainty management aims to catch up to the changing social practices and uncertainties generated by the other two. We have thus witnessed a proliferation of epistemic, social and political and experiential uncertainties during the transition to the biomedical era of HIV prevention.

I will define all of these terms just introduced here more specifically below. However, the main thrust of this thesis is that the field of HIV prevention research and services in Canada has been one greatly characterised by uncertainty in its third decade. What constitutes effective HIV prevention practice remains a highly convoluted and contentious matter. The very core of what is a risk and who is most at-risk has been under constant reconsideration. These conditions of uncertainty have multiple social and political effects, especially on those most affected by this epidemic, such as gay men.

This leads us to the second central thesis of this dissertation. I will argue that as a result of this lack of stability or consensus in the HIV prevention field, young HIV-negative gay men consistently face great uncertainty in relation to HIV prevention practices throughout their lives. The complexities of epistemic and social and political uncertainties (i.e. the unknowns generated through research practice and contradictory governing practices, described further below) morph into intricate forms of experiential uncertainty that must be managed by everyday social actors. Consequently, HIV-negative gay men are continually governed and affected by serostatus uncertainty, by experiences of being at-risk for HIV.

Serostatus uncertainty greatly affects these men's general well-being and how they come to enact their agency in response to this very politically volatile epidemic. The persistent fear of serostatus uncertainty and seroconversion (i.e. becoming HIV-positive) experienced by many HIV-negative gay men remains the case despite decades of HIV prevention education, research, advocacy and the development of a well-established HIV research and service industry in Canada. This concern also remains prominent despite remarkable advancements in our understanding of HIV transmission and the continued development of biomedical prevention technologies. Indeed, I will demonstrate how some of these advancements have actually created even *more* epistemic and social and political uncertainty that HIV-negative men must negotiate. In other words, I will demonstrate how the challenges HIV-negative gay men face in their everyday lives when addressing the issue of serostatus uncertainty are intimately linked up to the uncertainties generated by the knowledge production and governing practices that make up the field of HIV prevention research and services.

The argument that young HIV-negative gay men remain affected by serostatus uncertainty may, at first, appear obvious. There is, of course, nothing new to arguing that gay men must manage HIV risk, that risk management practices are complex and evolving, or that many HIV-negative gay men develop strong anxieties over sex due to HIV transmission (Flowers, 2001; Odets, 1995). However, the current context of HIV research tends to favour an analysis of the motivations for sexual risk-taking (unprotected anal intercourse in particular) and understanding the effects of biomedical technologies on sexual behaviour. Thus reflections on HIV-negative gay men's *life-long* process of continually managing serostatus uncertainty and struggling with the complexities of prevention practices are often marginalised. Indeed, I will argue that many of the important social practices that make up the everyday management of serostatus uncertainty are often eclipsed from view in mainstream knowledge production and governing practices. My contention in this dissertation is that examining how HIV-negative gay men routinely manage various facets of serostatus uncertainty throughout their lives is absolutely necessary for us to understand how this epidemic is unfolding.

After closely exploring the epistemological intricacies of the HIV prevention field, in this dissertation I will draw on collected interview data to put forth a general theory of risk disposition. The risk disposition of a social actor refers to his ever-evolving relationship or orientation to HIV risk management that is a result of his particular social location and unique lived experiences at a given moment in time. Every HIV-negative gay man has his own story to tell when in comes to HIV risk. Understanding the nuances of this story (and not just focusing on sexual risk-taking) is essential to understanding how a social actor is affected by this epidemic and how he may adjust his sexual practices in the context of newly emerging prevention information. Understanding a social actor's risk disposition is thus essential to understanding how he comes to makes sense of and respond to the epistemic and social and political uncertainties that characterise the HIV prevention field in its third decade.

By focusing intently on the lived experiences of young HIV-negative gay men managing serostatus uncertainty in their everyday lives, in this dissertation I will demonstrate how the fear of not knowing one's HIV status, regardless of the actual biomedical probability of HIV transmission associated with a particular risk event, remains an omnipresent concern in the lives of most HIV-negative gay men and plays a key role in determining how they come to participate in social life. I will demonstrate that it isn't always high levels of risk that create challenges for HIV-negative gay men. Rather, similar to other scholars (Girard, 2013), I argue that the continual negotiation of the residual risks associated with safer sex and lower risk sexual practices can cause great distress and produce social tension. This constant concern over HIV risk plays a significant role in how gay men come to moralise and consequently govern their sexual conduct, as well as how they politicise the conduct of other gay men. The experience of serostatus uncertainty thus remains an integral feature of gay male subjectivity and an essential component to understanding gay male sociality and politics. Consequently, serostatus uncertainty can serve as a primary lens to make sense of the social and political aspects of this epidemic among gay men, thus offering key contributions to critical social science perspectives on HIV.

In short, in this dissertation I will explore the conditions of uncertainty. I will demonstrate how the HIV prevention field has failed to achieve a stabilising point in its third decade and how this lack of consensus among experts contributes to the creation of challenging moments of serostatus uncertainty that HIV-negative gay men must navigate in their everyday lives. Thus the principal original contribution of this dissertation is providing a critical portrayal of the HIV prevention field in Canada through an examination of how serostatus uncertainty is produced, experienced and managed at the institutional, community and individual levels during the transition to the biomedical era of HIV prevention. I will do this by closely examining the interplay between knowledge production, governing practices and the everyday experiences of managing serostatus uncertainty, exploring how epistemic and social and political uncertainties create challenging moments of experiential uncertainties for everyday social actors. This close analysis of the lived experience of managing serostatus uncertainty will help us to uncover how HIV-negative gay men come to implement agency and secure their well-being in the face of the unknown. It will also be used to challenge the validity and generalizability of reigning forms of knowledge production and governing practices in the HIV prevention field.

In the reminder of this introduction, I will lay out the structure of this dissertation by first explaining what exactly I mean by the "transition to the biomedical era of HIV prevention." I will then move on to discuss the parameters of critical social science on HIV, which is the intellectual paradigm guiding this project, as well as explaining what I specifically mean when referring to the "HIV prevention field." I will then return to laying out the key arguments of this thesis by mapping out the chapters ahead and adding clarity to the concepts I just introduced, specifically the three modalities of uncertainty (epistemic, social and political and experiential uncertainty) which are a central analytic lens in this dissertation.

Transition to the Biomedical Era of HIV Prevention

Since our knowledge on HIV prevention is constantly evolving at a rapid rate, it is necessary to first situate this project within a "historical" context. The literature reviews offered in chapters three and four look at major developments in HIV prevention social science and biomedicine up to 2014. And the interviews performed for this project, presented in the second half of this dissertation, took place in the fall of 2013 and detail the participants' experiences of serostatus uncertainty in the preceding decade. Thus this project focuses on understanding HIV risk management and gay male sexual practices roughly from 2004-2014, a period I shall term here as the *transition to the biomedical era of HIV prevention*. For brevity, occasionally I will refer to this as the "third decade" of the epidemic. However, we in the field tend to consider 1981 as the official start of the epidemic, at least among gay men in North America (Altman, 1981).

The term "biomedical era of HIV prevention" is somewhat misleading. There has never been a period in this epidemic where HIV prevention was not greatly affected by biomedical science (Epstein, 1996; Flowers, 2001; Patton, 1990; Waldby, 1996). Confirming that a virus was the root cause of AIDS is a biomedical finding that gave scientific credence to community prevention mobilisation strategies advocating condom use. Basing safer sex decisions on one's own HIV status or the HIV status of prospective sexual partners (what is known as serosorting, see chapter two), though largely a behavioural form of prevention, obviously relies on knowledge of one's HIV status and thus again on biomedicine. Thus there is no form of behavioural prevention that does not contain biomedical elements, just like there is no form of biomedical prevention that does not contain behavioural components.

At the same time, there is no doubt that over the last decade or so we have witnessed a pronounced shift in HIV prevention science, education and service delivery. This is a shift that has been predominantly guided by advancements in biomedicine that usually work *in addition* to existing behavioural interventions (Adam, 2011; Montaner et al., 2010; Mykhalovskiy, Patten, Sanders, Bailey, & Taylor, 2008). Whereas earlier periods in the HIV epidemic had a more distinct division between HIV prevention practices (as mostly a set of behavioural interventions, such as condom use) versus treatment for an HIV infection (as mostly a set of biomedical options to help those living with the virus), the time period under consideration in this dissertation has seen the distinctions between these two categories increasingly blur (Mykhalovskiy et al., 2008). Since 1996, HIV medications have played a more prominent role in how we think about HIV prevention and how gay men come to adjust their risk management behaviours and sexual practices (Flowers, 2001; Grace et al., 2013; Race, 2003).

Nonetheless, I refer to this period as a *transition* because many of the biomedical tools I am referring to here (and which I will list shortly below), began to emerge or became available as legitimate—yet, *highly* debated—prevention strategies during the time period under consideration. Indeed, it is one of the primary goals of this dissertation to highlight the great uncertainty that has been attached to these *emerging* tools during the first decade of the twenty-first century. While emerging biomedical technologies offer new opportunities, limitations in available research (what I will later on describe as *epistemic uncertainty*) during the transition to the biomedical era of HIV prevention have made the benefits of these technologies, at both the individual and population levels, uncertain and have raised questions about the potential additional health and social risks these technologies may produce—that is, they have generated what I will later on describe as *social and political uncertainty*.

Moreover, despite the proliferation of biomedical technologies available today, there still lacks definitive biomedical solutions for prevention. The transition to the biomedical era of HIV prevention has been characterised by the emergence and improvement of technologies that are “vaccine-like” or “cure-like.” However, unlike other infectious diseases having greatly affected gay men such as Hepatitis B, there is no definitive vaccine available. In contrast to syphilis, there is no absolute cure that can eliminate HIV entirely from an HIV-positive person’s body.[2] Thus during the transition to the biomedical era of HIV prevention, biomedical technologies could begin to supplement existing behavioural approaches to prevention, but they could not replace them entirely.

Thus the transition to the biomedical era of prevention has been characterised by a hopeful disposition toward biomedicine’s role in advancing prevention efforts along with a great

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[2] At the time of writing this dissertation only one man, known as the “Berlin Patient,” has officially and *permanently* been cured of HIV; however, the procedure he underwent is not easily transferrable to other patients (Yukl et al., 2013). Chapter two will outline why HIV is very difficult to remove completely from the body.

deal of uncertainty and scepticism about the future of biomedically-based HIV prevention practices. A significant portion of this dissertation (chapters three and four in particular) will pay close attention to how biomedical technologies have been debated and how uncertainty about their benefits have been negotiated by experts in the HIV prevention field. For now, I will list some of these biomedical advancements and their potential risks to clarify.

The *transition to the biomedical era of HIV prevention* has been characterised by the following major developments:

- The development of combination therapies or highly active antiretroviral therapies (HAART or just ART) in 1996, which began to shift an HIV diagnosis from a death sentence to a more chronic manageable condition. Though 1996 marked the beginning of this shift, it has only been in the decade and a half preceding the development and roll out of ART in 1996 that the benefits of these medications have been fully realised. Since then, the understanding of HIV as a chronic manageable condition has been adopted as popular wisdom by HIV professionals, along with improvements in ART, including easier to manage pill distributions and significantly reduced side-effects (Mykhalovskiy et al., 2008).
- Increased understanding and promising research results on the relationship between a managed undetectable viral load—a direct product of advancements in ART—and the reduced transmissibility of HIV at both the individual and population levels (Montaner et al., 2010; Wilton, 2014). (*Viral load* refers to the quantity of HIV in an infected person's body. *Undetectable viral load* refers to instances where viral load levels have been effectively reduced to very low levels in an HIV-positive person's body, usually due to medication. Please refer to chapter two for more details.)
- Development and advancement of the hypothesis that undetectable viral load can reduce HIV transmissibility to extremely negligible levels, with promising research confirming this belief among *heterosexual* serovariant couples (Cohen et al., 2011). (*Serovariant/serodiscordant* couples refer to relationships, usually sexual, where one partner is HIV-negative and the other is HIV-positive.)
- Advancements and wider distribution of PEP therapy (*post*-exposure prophylaxis, the use of HIV medications as a preventative measure by *HIV-negative* individuals *after* they have been recently exposed to the virus) beyond occupational accidents in health care settings in

Canada which is known to be highly effective if taken within a 72-hour time frame after exposure to the virus (Wilton, 2011)

- Beginning of clinical trials for PrEP (*pre*-exposure prophylaxis, the daily use of HIV medications as a preventative measure by *HIV-negative* individuals *before* they have been exposed to the virus) and the availability of PrEP prescriptions "off-label" (not officially recognised by Health Canada as a legitimate use of a medication already available on the market) for a minority of knowledgeable gay men. Early research indicating very favourable results on PrEP's risk reduction potential among gay men (Grant et al., 2010)
- The development and roll out of the instant HIV antibody test in Canada, a finger prick blood test that allows for near instantaneous diagnosis (Tooley, 2010)
- More fine tuned epidemiological surveillance systems which utilise information on viral load levels to inform public health decision-making (Gardner, McLees, Steiner, del Rio, & Burman, 2011)
- More detailed risk assessment research outlining the risks associated with variable sex acts, such as unprotected anal intercourse or oral sex and the effectiveness of prevention measures such as condom use (Wilton, 2012b)[3]

Despite these advancements, during the transition to the biomedical era of HIV prevention, there has been great uncertainty and limitations with available research and technologies including:

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[3] In this dissertation, I use the term *unprotected anal intercourse* (UAI) and *condomless sex* interchangeably. There is a growing preference in the HIV prevention field to use the term condomless sex over UAI. Indeed, there are certain actions that may be implemented before or during anal intercourse that do not require condoms, but that can still help prevent HIV transmission (see chapter two for review). One main example of great import to this dissertation is that undetectable viral load in the context of condomless serovariant anal intercourse may be considered to be "protected" or "safe sex." Nonetheless, from an official biomedical and public health viewpoint in Canada, serovariant condomless anal sex would *not* have been considered to be "protected" intercourse (i.e. safer sex) during the transition to the biomedical era of HIV prevention (see chapter three). Indeed, from an epidemiological perspective, all condomless anal sex would be considered to be UAI.

I do frequently use the term condomless sex throughout this dissertation. However, my goal in the following pages is not exclusively premised on understanding decisions to use or not use condoms (see chapters four and five). I am, however, keenly interested in examining how certain sexual behaviours (i.e. such as those premised on condomless sex) are understood and problematized through epidemiological science. Hence, along with the term condomless sex, I commonly use the term UAI in order to make continual reference to how sexual behaviours become understood vis-à-vis an epidemiological risk lens.

- Severe side effects still associated with ART for some people on treatment and limited understanding of the long-term impact of lifelong ART use (Gagnon & Stuart, 2009).
- Limited understanding and disagreement among HIV experts on the risk reduction potential associated with undetectable viral load among gay men and other *men who have sex with men* (MSM—I will complicate this concept below) (Adam, 2011)
- Aggressive PEP therapies with debilitating side-effects and barriers to access (see chapter six of this dissertation) (Wilton, 2011)
- Uncertainty over the effectiveness of PrEP as a prevention strategy (Patton & Jin Kim, 2012). Limited accessibility of PrEP and no official state approval in Canada
- No effective vaccine or cure available and no promising developments in the late stages of clinical trials (Adam, 2011; CATIE, 2009, 2013)

This period has also been characterised by:

- Increasing concerns over the influence of biomedical advancements, including the impact of undetectable viral load on sexual risk-taking (Rapid Response, 2014)
- Epidemiological research indicating increases in sexual risk-taking among MSM. Some research demonstrating periods of increasing incidence of HIV infection among MSM and periods demonstrating stabilised rates—a managed but not decreasing epidemic (Adam, 2005, 2006, 2011; Public Health Agency of Canada, 2013a)
- Increasing rates of syphilis among gay men and other MSM (Public Health Agency of Canada, 2013) and the emergence of antibiotic resistant strains of gonorrhea (CATIE, 2016)
- Increases in the number of HIV-positive persons who have been criminally charged and convicted for HIV status non-disclosure in Canada (Mykhalovskiy, 2012). Canada has the unfortunate reputation of being a world leader in criminalising HIV-positive persons for non-disclosure

Demographically, the transition to the biomedical era of HIV prevention is also characterised by the emergence of the post-AIDS generation (Dowsett, 2017; Halkitis, 2014; Rofes, 1998). The post-AIDS generation refers to those gay men (generation Y and Millennials) who, born in the 80s or later, reached sexual maturity *after* the development of ART began to shift HIV into a chronic manageable condition. Unlike earlier generations of gay men who experienced the full wrath of the AIDS crisis in North America in the 80s and early 90s, the post-AIDS generation entered sexual maturity under the context of a relatively more controlled epidemic, with an established HIV service sector and the steady introduction of all of the biomedical advancements just listed above. This has greatly influenced these men's perceptions and relationships to HIV risk management. As Girard (2013) describes in his work on gay men in France, those who came out during the context of the ongoing HIV epidemic grew up with "le sentiment d'avoir toujours 'baigné' dans les discours de prévention ou d'avoir été 'bassiné' par ces recommandations. Qu'elle soit véhiculée par l'entourage familial ou amical, dans le cadre scolaire ou par des associations, tous témoignent d'une information précoce sur le préservatif comme prophylaxie anti-HIV. Cet effet de génération n'empêche cependant pas des perceptions nuancées et critiques des discours de sante publique " (p. 290). HIV prevention has thus been integral to these men's experiences of growing up, coming out and being sexually active. There has never been a time when HIV did not exist for these social actors.

This dissertation will focus on these young men's experiences with serostatus uncertainty. These men are, in some sense, considerably more fortunate than earlier generations of gay men who had to experience the full ravages of the AIDS crises. Yet, as this comment from Vincent, a participant of this study, demonstrates, despite all the prevention tools available, a deep-rooted fear has not abated among this younger generation: "I think that is what it is more than anything else. It is in the back, in your head, a fear that it is always going to come and haunt us. One day, it's going to be our turn." Epidemiologically, HIV has impacted generations of gay men differently. But one thing has remained constant among them: fear. No matter the awareness of prevention measures and the development of new biomedical technologies, fearing HIV in a real and sustained way remains a uniting feature among all generations of gay men of the late twentieth and early twenty-first century. My goal in this dissertation is to focus on how younger generations have made sense of and have managed this fear in the context of shifting and uncertain knowledge claims.

At the time of writing this dissertation we are still without a vaccine or cure, which means that the biomedical era of HIV prevention has not yet been fully realised. Nonetheless, new developments and research findings have emerged that have added significant clarity to some of the prevention debates that have characterised the transition to the biomedical era of HIV prevention. In particular, more research has emerged that has more convincingly demonstrated the risk reduction associated with undetectable viral load in the context of *homosexual* sexual relations and there has been increased agreement among many members of the international community that undetectable viral load can reduce risk (Grulich et al., 2015; Vernazza & Bernard, 2016) and the anti-HIV drug Truvada has officially been approved as PrEP by Health Canada in February 2016 (Chai, 2016). As a result of these developments, organisations whose documents I shall explore in chapter three, have since readjusted their more apprehensive positions on undetectable viral load and PrEP to be far more favourable (CATIE, 2015b, 2015c). Thus while in many ways the fundamental lack of a cure or vaccine leaves us still in a transitory period of sorts, since 2014 there has no doubt been a (developing) paradigm shift in the HIV research and service industry in Canada as a result of biomedical and policy developments.

Yet, the stories I shall focus on in the following pages are from men who have been negotiating serostatus uncertainty in a far more uncertain context. Recent advancements in HIV prevention science and service delivery are certainly encouraging. However, we must recognise that these occurred *after* the time period under consideration in this dissertation. As we will see in the following chapters, during the transition to the biomedical era of HIV prevention many community organisations in Canada were extremely hesitant to be too optimistic about the benefits of undetectable viral load and PrEP was hardly on most gay men's radar, let alone an accessible prevention option. Thus the stories shared by the gay men interviewed for this project are stories that must be contextualised within a period of great uncertainty over, and limited accessibility to, newer biomedical prevention technologies.

Importantly, by historically contextualising this project under the transition to the biomedical era of HIV prevention, I am not limiting the following analysis to understanding how young gay men, or the post-AIDS generation, utilise emerging biomedical information in their sexual practices. The transition to the biomedical era of HIV prevention is simply a way to categorise a specific period of time in this epidemic. Nonetheless, the following is not guided solely by an interest in the effects of the biomedical. Indeed, I am equally if not more interested in the social and political dimensions of HIV prevention practices that have emerged during this time period. I am also interested in reflecting on how experiences of serostatus uncertainty can contribute original insights to critical social science perspectives on HIV, the topic I will explore next.

Critical Social Science and HIV

This dissertation positions itself as a work of critical social science on HIV. Critical social science on HIV prevention specifically, may be considered to be a sub-field of HIV prevention science. By HIV prevention science, I am referring here to a broad field of scientific inquiry that spans the social, behavioural and biomedical disciplines, which is best represented in academic journals like *AIDS and Behavour*, *Journal of Acquired Immune Deficiency Syndromes, AIDS Education and Prevention* as well as the *New England Journal of Medicine*. This interdisciplinary field is invested in better understanding how HIV transmission may be most effectively prevented at the individual, community and population levels. Critical social science offers a critical appraisal of the knowledge produced in this broader interdisciplinary field (Kippax, 2012).

Mykhalovskiy and Cain (2008) define critical social science and humanities scholarship on HIV:

> As a placeholder to refer to a broad range of work that might be considered critical, reflexive, post-positivist or otherwise conversant with developments in contemporary theory in the humanities and social sciences. We intend the concept of "critical" to act as a contrast term that distinguishes a heterogeneous but recognizable research practice from established forms of health sciences research…. As a whole, critical social sciences and humanities research questions taken-for-granted assumptions about the social world and how it is known through research (p. 3).

Thus critical social science on HIV is not an explicit research methodology. Rather, it is a sub-field that engages with the knowledge production practices of the larger field of HIV prevention science. It is a general orientation to research that is committed to rigorous social, cultural and political analysis of the HIV/AIDS epidemic (Mykhalovskiy & Rosengarten, 2009b). To Boltanski (2011), a seminal theorist of the "critical," all social science is interested, implicitly or explicitly, in power relations. However, work can be appropriately described as "critical" if it goes beyond descriptions of social relations and power to highlight how these power relations form a system, allowing for domination to be a duplicated and colonizing force. Boltanski argues that critical theory tends to differ from standard sociological theory by incorporating the *everyday critique* and the *moral judgments* of social actors into its analysis. Understanding the discontent of everyday social actors is the main goal of critical theory and a way to highlight how current conditions are unacceptable. From this vantage point, critical social science on HIV can be described as a form of scientific inquiry that takes the moral judgments of everyday social actors to question the epistemological and political practices of HIV prevention science.

For research on HIV prevention matters, critical social scientists examine power relations inherent in research production, policy formation, service delivery, education programming, media communication and advocacy practices (Mykhalovskiy & Rosengarten, 2009b). These may be contrasted with a thorough examination of the social tensions and ethical dilemmas social actors face in their everyday lives as a result of HIV. Integral to this critical analysis is the belief that there is something problematic, oppressive, or at the very least, limited in our current response to the HIV epidemic. Critical social science highlights how these limitations become duplicated and accepted as the norm, as well as exposing the negative consequences of these limitations on those most affected by the epidemic.

In chapter four, I will closely review key works of critical social science and humanities scholarship on gay men and HIV prevention. For now, I will highlight the four main features of critical social science on HIV that guide this dissertation (Mykhalovskiy & Cain, 2008; Mykhalovskiy & Rosengarten, 2009a, 2009b; Kippax, 2012). Following this review, I will examine an example of a critical social science project on HIV prevention that has influenced the following dissertation and that will introduce us to institutional ethnography.

The first main characteristic of critical social science is that it utilises critical social theory and critical research methodologies, such as critical risk theory, queer theory, feminist theory, Foucauldian theory, Marxist theory, etc. These tools can be used to closely examine a particular HIV issue by situating it within broader social, political, cultural, economic and historical contexts. These tools may have pragmatic and applied components, but tend to be highly interpretative, allowing room for intellectual creativity. While critical social science must be dedicated to internal and external validity, to creating an even-handed and scientifically accurate portrayal of social phenomena, critical work may also be guided by clearly expressed social, political and intellectual commitments. It is thus not averse to expressing judgements on problematic, oppressive or amoral social practices (Cannella & Lincoln, 2009; Kincheloe & McLaren, 2003).

Secondly, critical social science is a highly *reflexive* enterprise. By reflexivity I am referring here to a researcher's ability to pose "a set of 'reflexive' questions about a particular research issue: questions concerning the implicit assumptions and ideology underlying the research process, and the role of power, contradiction, and dialectical relationships in theory and research practice" (Eakin, Robertson, Poland, Coburn, & Edwards, 1996, p. 159). Critical social science requires us to closely examine the inherent epistemological presuppositions guiding research practices. What are the assumptions underlying dominant research paradigms and prevailing research questions? What constitutes valid evidence in dominant research paradigms? How do dominant research paradigms deal with uncertainty and ambiguity? Further, as Adam (2016) argues, critical social science closely monitors the political relationship between the observer (researcher) and observed (researched) in order to ask: in whose interest is knowledge being produced?

Moreover, in terms of reflexivity, critical social science on HIV often goes beyond reviewing the scientific literature on HIV to investigate how knowledge claims are put into practice. It thus is interested in determining how specific forms of knowledge translate into specific governing practices. That is, critical social science tends to be interested in examining how research on HIV is affecting *and* is being affected by policy formation, advocacy practices, service delivery, education and media (Mykhalovskiy & Rosengarten, 2009a). Thus a fundamental characteristic of critical social science on HIV includes an examination of how the *HIV field* is structured, how it utilises research and influences the trajectory of research.

With the term "HIV field," I am referring to the network of social actors (i.e. activists, community leaders, frontline service providers, social workers, biomedical scientists, social scientists, public health specialists, policy makers, etc.), groups, organisations and institutions who play an active and regular role in the management of the HIV epidemic and who are recognised as producers and/or disseminators of valid knowledge on HIV. Members within the field are HIV experts or professionals who solidify their expertise by continually producing knowledge about HIV (Epstein, 1996). Similarly, Holt (2014) (borrowing from Haas, 1992) uses the term *epistemic community* to describe HIV knowledge production. An epistemic community is a tight network of professionals and individuals with acknowledged expertise and competence in a subject, who are expected to guide research and policy formation. The HIV field is made up of different epistemic communities, different clusters of professionals organising and producing knowledge on different HIV prevention issues, in different ways (e.g. critical social scientists vs. public health bureaucrats).

The HIV field is sometimes referred to as the HIV/AIDS industry, AIDS bureaucracy, HIV response or the HIV movement (Mykhalovskiy & Rosengarten, 2009a; Patton, 1990). It is made up of frontline-focused AIDS service organisations (ASOs) (e.g. AIDS Committee of Toronto, AIDS Community Care Montréal), governmental bureaus, initiatives and funding centres (e.g. AIDS Bureau of Ontario), education, research and policy organisations (e.g. Ontario HIV Treatment Network, Coalition des Organismes Communautaires Québécois de Lutte Contre le Sida, Canadian AIDS Society, Canadian AIDS Treatment Information Exchange) and grassroots activist and advocacy organisations (e.g. AIDS Action Now!, Canadian HIV/AIDS Legal Network). The term gay men's HIV prevention field refers to a subset of this response that is focused on prevention issues among gay men (e.g. Gay Men's Sexual Health Alliance of Ontario, RÉZO). In the following pages, I will routinely refer to the *HIV prevention field* to signify this added specificity.

The idea of the HIV field is adapted here from Epstein's (1996) seminal work on HIV/AIDS, who himself drew on Bourdieu's conceptual framework (Bourdieu & Wacquant, 1992). Epstein describes fields as emerging through the intersections of various social worlds that come together to produce knowledge about HIV:

> The borders of the field may be porous, its parameters may be evolving over time, but it has an emergent logic—itself the product of negotiations and cooperation—that conditions the practices of the diverse actors within it. In my conception of the "field" of AIDS research and knowledge production, I am influenced by the work of Pierre Bourdieu, who describes fields as specific, relatively autonomous, domains of social action—domains of social production and reproduction—that both reflect and constrain the interests, positions, strategies, and investments of the actors within them. Inside each field, players compete with one another subject to the current rules of the game, but in so doing they seek to reshape the rules to suit the means at their disposable (p. 18-19).

In his work, Epstein uses this idea of the HIV field to understand how different HIV experts—namely, biomedical scientists and gay activists—colluded together at the beginning of the epidemic to rapidly advance the hypothesis that AIDS was caused by HIV, despite uncertain scientific evidence. Proving the HIV hypothesis quickly was in the interests of scientists looking to advance their careers and activists searching for life-saving medical solutions. Thus Epstein's critical social science work demonstrates that from the very beginning of the epidemic the political and personal interests of those in the field have governed knowledge production practices—politics can turn uncertainty into truth.

Thinking about the HIV response through the idea of the field allows critical social scientists to examine how particular research practices and knowledge claims become validated or rejected, popular or marginal, under the emergent logic of a network of competing social actors invested in the epidemic. This notion of the competitive field leads us directly to the third main characteristic of critical social science, which is a critique of hegemonic knowledge production practices in HIV prevention science. Indeed, within the HIV field not all research or opinion is considered equal. Mykhalovskiy and Rosengarten (2009b) describe the increasing primacy of research driven by an evidence-based medicine model. They define evidence-based medicine as “an initiative that seeks to govern biomedicine by establishing scientific research as the fundamental ground of medical decision-making” (2009b, p. 188). At its basis, evidence-based medicine aims to use the best and most “scientifically sound” forms of research to inform medical and health-based decision-making (Mykhalovskiy & Weir, 2004). As a research paradigm it is interested in efficiency, focused on managerial practice and invested in ensuring accountability to the state (Mykhalovskiy & Rosengarten, 2009b).

There are three main characteristics of evidence-based medicine that run counter to the work of critical social science: its methods, its interest in direct application and its emphasis on the biomedical. First, in terms of methods, evidence-based medicine tends to favour large-scale clinical trials and quantitative methods such as surveys (Mykhalovskiy & Cain, 2008). While there is value in large-scale projects, such work takes an extraordinary amount of financial resources, administrative coordination and often involves sizeable research teams. For example, phase one of the “M-Track Report: Enhanced Surveillance of HIV, Sexually Transmitted and Blood-Bourne Infections, and Associated Risk Behaviours Among Men who have Sex with Men in Canada” (Public Health Agency of Canada, 2011), a key document in the gay men’s HIV prevention field, includes 11 researchers on the main team and the involvement of over 100 researchers and community members across Canada. Conversely, critical social science projects are often the product of independent scholars or smaller collaborations and tend to draw more on qualitative research methods. However, in the HIV prevention field there is a definite premium placed on quantitative studies that are statistically sound enough to make generalizable claims about an affected population.

Second, under an evidence-based medicine model, the principal goal is to generate research that can have a direct effect on policy and programs. For example, in OHTN's "Striving for excellence: Achieving impact, strategic plan to 2015," one of the primary goals of the organisation is to "move research evidence into action to promote policy, practice and programs" (OHTN, 2011, p. 4). Critical scholarship can rarely claim to have a direct effect on policy or programs. As Auerbach notes, social theory helps to describe various dynamics in this epidemic, but it cannot always offer specific solutions (Mykhalovskiy & Rosengarten, 2009a, p. 286).

Third, evidence-based medicine places a strong emphasis on the primacy of biomedical knowledge. Biomedicine is a broad field of research that is interested in the connections between medical or clinical practice and the biological sciences (Waldby, 1996). It is a reigning domain of research activity in the general field of HIV prevention science. Biomedical research is composed of work in multiple disciplines such as pharmacology, pathology, virology, microbiology and immunology. One of the key disciplines in the biomedical paradigm is epidemiology.

Epidemiology is "the science and craft that studies the pattern of diseases (and health, though usually indirectly) in populations to help understand both their causes and the burden they impose. This information is applied to prevent, control or manage the problems under study" (Bhopal, 2002, p. xxii). Its methods and objects of study are not radically dissimilar to social science disciplines like sociology. Epidemiological science routinely borrows and is informed by social scientific theory (Krieger, 2000). However, despite its social scientific character, it is often the case that epidemiology is distinguished from the social sciences, mainly because it organises the social world through a biological lens and has very distinct professional and institutional affiliations (Krieger, 2000).

In particular, epidemiology studies disease prevalence (aggregate number of disease cases within a given population) and disease incidence (new numbers of disease cases within a given population over a given period of time, usually a year). For example, recent epidemiological evidence argues that gay men and other MSM have made up to 46.7% of all HIV cases in Canada since the beginning of epidemic (Public Health Agency of Canada, 2014, p.5). Incidence rates have been fairly stable among this group since 2002, with a peak of 593 cases in 2008; though gay men and MSM still made up the greatest percentage of incidence (48.1%) in 2011 compared to other risk groups, with 531 cases (Public Health Agency of

Canada, 2013a). Epidemiology can divide up these figures by different demographic, behavioural or biological patterns. For example, in Canada 81.1% of gay men who have tested positive for HIV have been white (Public Health Agency of Canada, 2013a). Most HIV-positive results among gay men and other MSM occur in Ontario, British Columbia and Québec, Canadian provinces which contain the cities with the largest gay male populations in the country (although Québec does not offer specific epidemiological figures on MSM testing) (Public Health Agency of Canada, 2013a). Along with reporting past prevalence and incidence figures, epidemiology may also speculate on future trends and make policy recommendations.

Epidemiology plays an extremely significant role in the HIV prevention field. Namaste et al. (2012) go as far as to argue that epidemiology actually constructs reality, since epidemiological truth tends to be used to organise services and advocacy practices in the HIV prevention field. The knowledge that epidemiology produces translates into the governing practices that the HIV prevention field implements. Research projects and service delivery are justified and funded through recourse to epidemiological evidence that demonstrates where we can improve. I will investigate this dynamic further below in a review of Namaste et al.'s study. However, as former United Nations (UNAIDS) epidemiologist Pisani (2008) reminds us, epidemiological science is full of human errors and always has its own biopolitical agenda. Indeed, she argues that UNAIDS would often "beat up" the numbers by selecting particular figures for mathematical models that would give bolder results and by communicating statistics in such a way as to make the epidemic look as dire as possible and attract more political support (p. 22). In Pisani's own words:

> When a journalist talks about "beating it up," they mean making a mountain out of molehill, making a big, interesting, dramatic story out of something that may actually be rather mundane. There is a huge difference between *making* it up (plain old lying) and *beating* it up. A journalist who beats up a story is a bit like a photographer who takes a picture of a politician from their best angle in soft focus if it is for an election campaign poster, but takes the picture from below, looking up the nostrils under a neon strip light if it is for a tabloid newspaper that supports the other party. The subject matter is the same; the art is in how you present it (2008, p.22, emphasis in original).

UNAIDS epidemiologists were often accused of deliberating lying and exaggerating the epidemic. Pisani, following this journalistic metaphor, argued that they were just beating things up, using the best tools and information available. The more shocking the numbers, the easier it is to attract research funding and turn HIV/AIDS into a growth industry. Referring back to the idea of the HIV field, we can see how the political interests of experts and organisations govern knowledge production and truth generation.

Epidemiology works alongside other health-based disciplines such as biostatistics, health promotion, health management, social work and clinical practice to make up what is commonly referred to as *public health*, an overarching term for the management of health and illness at the population level, as carried out by the state (Petersen & Lupton, 1996). In addition to knowledge production and the management of health service delivery, public health may be considered a mode of governance that is operationalized vis-à-vis the development of health policy and the distribution of financial and human resources for a particular health-based issue such as HIV/AIDS. This governance occurs at all levels of the body politic, but decision-making power is especially concentrated in state institutions, such as the Public Health Agency of Canada (PHAC) or the Canadian Institutes for Health Research (CIHR). These institutions fund organisations, biomedical scientists, social scientists and community professionals in the HIV prevention field to produce HIV research and to offer HIV related services, thus granting these players legitimacy.

To summarise, evidence-based medicine is the practice of employing biomedical knowledge in the service of clinical practice. It refers to the accumulation of "sound" scientific research and recommendations about clinical practice that stem from this research. Biomedicine spans several disciplines that view the social world through a biological lens, like epidemiology. Public health is the broader practice of taking the recommendations of evidence-based medicine, composed of truths from biomedical disciplines, to manage the health of a population. Thus when Mykhalovskiy and Cain argue that critical social science differs from "established forms of health sciences research," they are referring to mainstream (non-critical) biomedical and public health research. Critical social science not only differs from mainstream biomedical and public health work with regards to its objects of study and methods. It is fundamentally characterised by a critical analysis of the hegemonic field of biomedicine and public health knowledge production and related governing practices in the HIV prevention field.

One key way in which critical social science research on HIV prevention differentiates itself from biomedical and public health research is through its emphasis, either implicitly or explicitly, on *sexual practice*. This is the fourth and final characteristic of critical social science guiding this dissertation. Kippax and Stephenson (2005) define sexual practice as “a social and cultural practice produced within a particular historical time and place, and embedded in specific locations and formations” (p. 363). As an object of scientific investigation, sexual practice is a form of social practice that is distinguishable from behaviour. “Social practices inform *particular* behaviours or actions by *particular* individuals on *particular* occasions in *particular* locations and context” (Kippax & Race, 2003, emphasis added). Thus sexual behaviours refer to the specific acts that social actors perform, such as having unprotected anal sex. Epidemiology usually is interested in behaviour, in tracking the incidence of “high risk” acts among certain populations, such as MSM. Conversely, sexual practice refers to the broader context that shapes the meanings associated with specific sexual behaviours. Critical social scientists are interested in examining these contexts, so that “the ontological claim about ‘what sex is’ begins to unfold into a series of practical relations: conversations, exchanges, disputes, ruminations, [and] contextualizations” (Race, 2014).

To put it more bluntly, sex is not just about fucking. There is an entire range of social forces and interactions that come to influence physical sexual activity. Critical social scientists are interested in examining these social forces and interactions. At the micro level, such critical investigations may include examining how sexual partners with similar HIV statuses negotiate condom use in an open sexual relationship (Kippax & Race, 2003). At the meso level, this may mean examining how specific sexual environments or sexual cultures shape risk perception, such as understanding how risk is negotiated within a bathhouse (a public sauna where men meet to have sex) or a circuit party milieu (Adam, 2005, 2006; Dowsett, 2009). At the macro level, this may mean examining how advancements in HIV treatment and its influence on prevention can alter risk perception and raise new ethical questions (Flowers, 2001; Race, 2001, 2003). I will examine each of these areas more thoroughly in chapter four when I review the established critical literature on gay men and HIV prevention.

Kippax and Stephenson emphasize the importance of meaning when trying to make sense of sexual practice:

> What turns sexual behaviour into a social practice is meaning, and meanings are essentially social—in the sense that they are negotiated between people, both intersubjectively and collectively. Dominant meanings of sexual practice are continually questioned, subverted and reasserted both in the processes of

> intersubjective negotiation and in collective responses to changing conditions that frame sexual practice (e.g. the emergence of HIV, the development of a test for HIV, developments in HIV treatments, shifts in health policy and promotion, or the introduction of a new campaign, activity or programme) (2005, p. 362).

Thus scientific inquiry into sexual practice is less interested in determining what people "do" sexually. It is more concerned with describing the broader socio-cultural landscape where social actors attach meaning to particular sex acts, and how this meaning evolves and is negotiated through various social interactions. Rather than seeing sexuality as a set of behaviours performed by an individual, critical reflection on sexual practice recognizes the complexity of sexuality which is constantly being influenced by various social, cultural, political, emotional, psychological and biomedical forces. In short, critical social science on HIV prevention is not interested in tracking sexual behaviour. It is interested in sexual practice. This means addressing *sexuality* as a complex, nuanced and evolving set of desires and practices. In chapter four, I will return to examine research interested in the sexual practices of gay men more thoroughly.

An interest in sexual practice over behaviour is the principal reason why throughout this dissertation I use the term gay or queer men (usually just gay for the sake of simplicity) instead of "men who have sex with men" (MSM). Introduced in 1994, MSM was developed in response to critiques that HIV prevention science was stigmatising gay men by turning an entire social identity into a risk group (see chapter one) and that identity categories such as "gay men" could not capture the complexity of sexuality and gender roles (Young & Meyer, 2005). Thus as a concept, MSM focuses on how behaviour and not a social actor's identity *per se*, can place a person at-risk for HIV infection. Nonetheless, while aiming to be helpful, MSM reduces social actors to their behavioural patterns, eliminating the complex interplay of social, cultural and political affiliations associated with sexual practice (Dowsett, 2009). As Young and Meyer (2005) argue, MSM is "not a neutral stance on the question of identity but a decided lack of sexual-minority identity. More important, by implication, MSM and WSW [women who have sex with women] imply absence of community, social networks, and relationships in which same-gender pairing is shared and supported" (2005, p. 1145). Moreover, though the category MSM is thought to capture non-gay identified homosexually active men, researchers have argued that MSM samples are still often overwhelmingly based on the perspectives of gay men and thus tend to erase from view bisexual and non-queer identifying men who may be at-risk (Namaste, et al., 2012).

The terms gay or queer are far from perfect. However, they are the terms used by the participants of this study to identify themselves and to describe their sexual relations and communities. I will thus use these terms instead, referring to MSM only when directly referencing data from epidemiological reports that use MSM. In chapter four, I will outline some of the political implications of the term "queer," which can stand in as a critique of heteronormativity and homonormativity. However, the term queer often operates as a general umbrella term indicating "non-straight identified" and thus aims to work (successfully or not) around the limitations of the word gay.

To summarise, critical social science on HIV prevention contains four interrelated characteristics that are guiding this dissertation. First, it draws on critical social theory and methodological frameworks from across the social sciences and humanities, utilising these interpretative tools to ask questions about power and knowledge production. Second, it is a reflexive enterprise that aims to understand how the HIV prevention field comes to support certain knowledge production practices and truth claims at the expense of others. Third, it avidly critiques the hegemony of biomedical and public health knowledge production within the HIV prevention field, which tends to reduce the social and political complexity of HIV prevention through an emphasis on individual behaviour. And fourth, critical social science offers contrasting narratives to biomedical and public health research by focusing on the nuances of sexual practice, by examining sexuality at the micro, meso and macro layers.

By applying a critical social science analysis to the topic of young HIV-negative gay men and HIV risk management, in the following dissertation I will critically explore the intricacies of the HIV prevention field and demonstrate how it often fails to capture the nuances of gay male sexual practice. It is through this analysis that I will be able to develop the central theses of this dissertation, namely that the HIV prevention field has failed to achieve a stabilising point in its third decade and that the lack of expert consensus on key prevention issues creates difficult moments of serostatus uncertainty that HIV-negative gay men must routinely negotiate. A critical analysis of the relationship between knowledge production, governing practices and everyday experience will allow me to expose the limited validity and generalizability of mainstream biomedical and public health research, as well as question some of the social and political effects of current governing practices.

Importantly, it is only through reflexive attention to the mechanisms of the HIV prevention field itself and not just an interest in gay male sexual behaviour and epidemiological trends, that such arguments could be developed. By changing our orientation to our objects of study (i.e. sexual practice over sexual behaviour, the HIV prevention field over just at-risk men), critical social science allows us to address similar issues as mainstream HIV prevention science, but in ways that can help illuminate unexplored social and political dynamics. I will now outline a specific example of a critical social science project to explicitly demonstrate how this may be done.

Critical Social Science on HIV and Institutional Ethnography: A Guiding Example

In *HIV Prevention and Bisexual Realities*, Namaste et al. (2012) set out to explore the sexual health needs of bisexual men and women living in Montréal and to investigate why there is so little useful HIV prevention education specifically targeting bisexuals. In terms of critical methodology, Namaste et al. utilise Smith's (2005) institutional ethnography (IE) as a guiding frame. IE has a long and established history in critical social science work on HIV in Canada (Grace, 2016; Smith, 1990). While it is certainly not the only way to perform critical social science work (see chapter one), its predominance in the field has arguably played a defining role in how Canadian HIV scholars think about the "critical." Hence, while I do not principally position myself as an institutional ethnographer, frequently engaging with other Canadian critical social scientists who use IE has substantially motivated my thinking in this dissertation. This is very much the case with Namaste et al.'s work on bisexuality and HIV prevention, which is why I will take a moment to describe this particular project in detail as an exemplar of critical social science on HIV.

As a research methodology, Smith (2005) developed IE with the interest of examining women's lives more comprehensively, exploring key dimensions of their experiences which are often erased from view. IE borrows key tenets from Marxism, Feminism, ethnomethodology and phenomenology, to explain how larger institutional relations structure people's everyday lives. It pays very close attention to the mundane aspects of a social actor's lived experiences, as well as examples of ruling relations, those institutional activities that coordinate the social world through documents, policy reports and administrative forms (Namaste et al., 2012, p. 36). Ruling relations are examples of texts of any kind (including media) that direct us to distinct translocal forms of social organisation (distinct forms of coordinating people that are continuously reproduced) and social relations (the connection between activities in one social setting with activities happening in another social setting)[4] (Smith, 2005, p. 227-228). For example, we may look at a sexual health history form given to clients at a sexual health clinic as an example of a ruling relation. This is a specific text that coordinates a specific social interaction (between client and nurse) and connects one sphere of social activity to another (a client's sexual history to research on HIV prevention and to public health registration activities). The main goal of IE is to "*reorganise the social relations of knowledge of the social,*" as it is a "method of inquiry into the social that proposes to enlarge the scope of what becomes visible from that site, mapping the relations that connect one local site to others" (Smith, 2005, p. 29, emphasis in original).

IE allows for a range of data collection techniques including interviews, informal conversations, participant observation and policy document analysis. A rather key characteristic of IE involves close analysis of state produced documents to see how institutions organise the social world. Like most methodological frameworks, IE requires a review of existing scholarly or scientific literature. However, IE goes beyond gathering existing information about a topic to determine how the established work of scholars and scientists operates to give a particular shape to a topic or social problem that makes certain elements, and thus certain social actors and social practices, more visible, while rendering others invisible or marginal. Part of this critical review involves focusing intently on the methodology and design of established research to see what is

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[4] Importantly, throughout this dissertation I use the term "social relation" more generally to refer to specific *social relationships* between social actors, rather than confining it specifically to this IE definition. Yet, since all my analysis is built on understanding the connection between everyday experience with knowledge production and governing practices, arguably my use of *social relation* has clear resonance to this IE definition. In other words, I am investigating specific *social relationships* because they are of interest and related to social activity occurring in the domains of research, policy formation and education development. Hence at the analytical level, the *social relationships* I am interested in are indeed examples of *social relations*. I am flagging this slight conceptual disparity here just to be clear that this dissertation remains conversant with IE but does not principally position itself as an IE project, as I will describe in more detail below.

But more importantly, this demonstrates that as an interdisciplinary work of critical social science (also described in more detail below) there may be moments where my specific use of concepts may differ slightly from some of the different scholarly traditions or even specific disciplines that I draw on. To address this issue, I tend to define my concepts purposefully, attaching them to specific scholarly traditions, or clearly demonstrating how I have built my own working definitions through comparative reading (which is arguably the hallmark of interdisciplinarity). In the conclusion to chapter one, I will spend some more time explaining and defending my interdisciplinary use of different conceptual frameworks in this project. However, this moment serves as a specific example where I am greatly motivated by a methodological framework, but do not adopt all of its parameters wholesale. Despite this, my conceptual work still remains conversant to IE, even if not entirely structured by it.

erased.

> If IE encourages a critical approach to scholarship on a subject, and if it examines how social relations are organised through specific documents, the framework offers us a productive model for helping us to think more clearly about how the world is organised, and how knowledge is central to ruling relations. If we wish to consider why there is so little HIV education for men and women with bisexual behaviour in Canada, then we can use the framework of IE in order to understand more fully how HIV prevention is actually organised and put into place (Namaste et al., 2012, p. 42).

Thus a key aspect to applying IE is a consideration of how "knowledge is central to ruling relations." One is not only examining ruling relations (e.g. prevention education), but also what *specific* forms of knowledge serve as the premise for the construction of these texts. I frequently refer to such forms of knowledge as *ruling forms of knowledge*, to reflect their dominance in coordinating the social world through ruling relations.

Following the tenets of critical social science, we can already see how Namaste et al.'s project is a reflexive one. It is not only interested in producing knowledge about bisexuals, but it is also highly invested in understanding why the HIV prevention field has not been able to produce useful knowledge, and consequently, useful prevention education, for this affected population. Their project is thus a critical reflection on the ruling forms of knowledge in the HIV prevention field, a close examination of the methodological practices guiding established epidemiological research and research funding policy on HIV. Through this analysis of knowledge and ruling relations, Namaste et al. demonstrate how the HIV prevention field in Canada has made bisexuals invisible. Thus also inherent to their project is a critique of hegemonic biomedical and public health knowledge production practices (that is, ruling forms of knowledge), the third characteristic of critical social science on HIV.

After reviewing the established literature, Namaste et al. argue that epidemiological science tends to negate the complexity of people's lives with an over-emphasis on sexual behaviour and categorisation systems that literally erase bisexuals from view. Under the MSM classification system bisexual men have received some attention. However, there is a dearth of research on women who have sex with both men and women and/or who have sex with men who also have sex with men. Indeed, much research and education aimed at MSM focuses on prevention techniques relevant to sexual relations between men and not between men and women. Though it invokes a larger set of sexual practices and identities, knowledge on MSM also routinely tends to reflect the realities of self-identified gay men more so than bisexuals or other non-gay identified men who have sex with men and women. Moreover, research on MSM places an emphasis on anal intercourse at the expense of other sexual activities that men and women may engage in, such as oral sex.

To demonstrate an explicit example of erasure, Namaste et al. closely review the methodology of the Men's Study Survey from 1993, a seminal report in the HIV prevention field in Canada, and thus an example of a ruling relation. In the survey study leading to this report, participants could select their sexual identity (straight, gay, bisexual) and check off their sexual behaviour (e.g. sex acts with men, sex acts with women, sex acts with both men and women) over a given timeframe. However, researchers reclassified those men who had listed themselves as bisexual, but who had not had sex with a woman in the last 12 months as gay. Namaste et al. argue that the guiding cultural assumption behind this move is that bisexuality does not really exist. Epidemiologists sometimes reshuffle evidence to fit into their worldview and say what they want to say about the HIV epidemic (Pisani, 2008).

Another area of critical review in Namaste et al.'s project comes from their examination of HIV research funding. They encountered some difficulties acquiring funding from the Social Science and Humanities Research Council of Canada (SSHRC) who required more proof about the risk levels of HIV among bisexual men and women. This is somewhat ironic considering the project was being justified under the basis of there being limited existing research on bisexuals. Namaste et al. also requested community-based research funding. Community based research (CBR) is a methodological framework that incorporates non-academic voices or community participants into each stage of the research process in order to ensure that the knowledge being produced is relevant for a researched population (Harris, 2006). CBR makes sure that we aren't just producing research of sole interest to researchers and aims to empower community members through the research process. It has become one of the dominant frameworks within the HIV prevention field in Canada, to the point where it is nearly expected that all social scientists and multidisciplinary scientific teams interested in HIV research will use CBR in some capacity.

Since their project was community-based—in that it included the active participation of bisexual men and women who were not themselves researchers—Namaste et al. applied for funding from the Community-Based HIV/AIDS Research Programme housed in CIHR. Their application included letters of support from local bisexual organisations, as well as letters from individual bisexual men and women. However, their first application was rejected with the reviewers arguing that the project was not effectively “community-based” enough since it did not include a letter from a provincial network of gay and bisexual HIV/AIDS organisations, namely the Coalition des Organismes Communautaires Québécois de Lutte Contre le SIDA (COCQ-SIDA). Thus the reviewers needed “community” to be defined within the terms of the established state funded HIV prevention field. Namaste et al. found this troubling since COCQ-SIDA did not have any specific bisexual organisations included in its network. Moreover, Namaste et al. were arguing that the mainstream HIV prevention field was actually failing to address the needs of bisexual men and women and thus it made little sense to ask these researchers to align themselves with the very organisations who were responsible (at least in part) for this erasure. Moreover, Namaste et al. argue that there is a somewhat insidious logic in framing research only through established HIV organisations and working only with those individuals who are closely linked up to existing HIV services. This tendency in HIV CBR projects ignores those individuals who do not regularly access HIV services and who may be suspicious of these organisations because of their lack of attention to bisexual men and women.

The project was eventually funded and Namaste et al. were able to conduct research on the prevention needs of bisexual men and women. In order to avoid speaking only to those individuals who are comfortable talking about sex—which Namaste et al. argue is a bias of the established social science literature in the HIV prevention field—they focused on addressing the prevention education needs of their participants rather than asking them to focus on their sexual behaviour. Nonetheless, information gathered from this study can be considered to be examples of sexual practice, of understanding sexual behaviour in context. For example, Namaste et al. focus on one participant’s experience of having to tell a man in a swinger group sex setting that condoms had to be replaced when switching sexual partners, regardless of gender. While seemingly obvious, it should not come as a surprise that the man in question was unfamiliar with this safer sex strategy, since prevention education has not been targeted to address his particular sexual health needs. By frequently erasing bisexuals from research, the HIV prevention field generated a context where the education needs of many men and women were being ignored, despite the fact that HIV and STI prevention would be imperative to those operating in these hyper-sexualised milieus.

In short, Namaste et al.'s project is an example of critical social science on HIV. Utilising institutional ethnography, Namaste et al. critically reflect on how the HIV prevention field has erased bisexual men and women from view. They question the hegemony of epidemiological science in the HIV prevention field, which tends to negate the complexity of lived experience with its emphasis on individual behaviour. They further outline how existing research paradigms and funding structures make it challenging to ask novel questions in the field. Finally, drawing on social actors and social practices less represented in the existing research, Namaste et al. bring nuanced portrayals of the sexual practices of bisexual men and women, which become used to question the limitations of the HIV prevention field in Canada.

In a similar fashion, in this dissertation I will draw on the lived experience of young HIV-negative gay men to question ruling forms of knowledge in the HIV prevention field. As a work of critical social science, this dissertation is principally guided theoretically by critical studies on risk and uncertainty (introduced below and explored in great detail in chapter one). Thus while this project is highly indebted and influenced by IE—particularly through a reading of Namaste et al.—it does not principally position itself as a work of IE. Rather, it is a research study that is highly conversant with some of the main elements of IE. In specific, there are four main features of IE that I will continually reference in the following pages to help organise my analysis.

First, I will critically review the established literature on HIV prevention and gay men to question the limits of epidemiological and public health research. Following IE, this analysis will also include a very close investigation into the methods behind some ruling forms of knowledge production to question the validity and generalizability of scientific knowledge claims which are being used to govern our response to this epidemic. This investigation will also include an analysis of different ruling relations, including policies, community reports, media, education campaigns and outreach tools. In the interest of concision and compatibility with the uncertainty triad that I will develop in chapter one (explained below), I will more frequently refer to these tools simply as *governing practices*. The term governing practices represents the various ways society manages social problems through specific activities and frameworks, which are not just confined to the state (Nadesan, 2008). It reflects the broader institutional practices that occur throughout society that are meant to coordinate or govern the social world (i.e. though specific policies, or education tools) and that tend to operate by turning social actors into self-regulating agents (Nadesan, 2008). I am thus using *governing practices* here to be more inline with governmentality studies, which I will further describe in chapter one (Nadesan, 2008); yet all of the different scholarly traditions I draw on in this dissertation are in some sense, directly and indirectly, discussing issues of governance that extend beyond the state's activities. Ruling relations simply refers more specifically to the *texts* we can analyse to observe social organization and social relations, moments where we can explicitly see governing practices documented. I will repeatedly be incorporating examples of such texts, like HIV education campaigns, into my analysis to observe the relationship between knowledge production and governing practices, with the everyday experiences of social actors navigating HIV risk.

Second, similarly to Namaste et al., my recruitment strategy for interview participants also focuses on interviewing gay men not actively linked up to the established HIV prevention field or to the established epistemic community (chapter four will fully describe the rationale behind this choice). Following IE, this decision was made in order to expand our view of the social by investigating social actors and social practices not as frequently incorporated into ruling forms of knowledge and thus ruling relations. Third, following IE, in this dissertation I will use examples of lived experience to question ruling forms of knowledge. Drawing on the nuances of gay male sexual practice, in this dissertation I will draw frequent contrasts between the established literature and activity in the HIV prevention field with the everyday experiences of HIV-negative gay men. This will be done in order to question the validity and generalizability of mainstream biomedical and public health narratives on gay male sexual behaviour. And finally, through IE I have been motivated to think about HIV risk management and gay men not just as a matter of sexuality and sexual identity, but also as an issue concerning organisations, bureaucracies and governmental processes—to connect the sexual relations of gay men back to larger institutional structures coordinating the social world. To be sure, in the following dissertation I explore sexual components of prevention in significant detail. But I also pay equal attention to how social actors navigate institutions and negotiate with bureaucracies, which, I will argue, is a fundamental component of how gay men develop their risk disposition.[5] This

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[5] To clarify, in sociology the term *institution* is *not* synonymous with organisations or bureaucracies, nor does it refer strictly to the activity of the state. Rather "institutions emerge when people do habitual, repeated actions over a long time. Through habit and repetition, shared and reciprocal typifications emerge that become people's stock knowledge and recipes" (Buechler, 2014, p.211). Giddens defines institutions succinctly as "the more enduring features of social life" (Giddens, 1984, p. 31), such as the law and economics. In Institutional Ethnography, *institution* is specifically defined as "complexes embedded in the ruling relations that are organised around a distinctive function, such as education, health care, and so on" (Smith, 2005, p. 255).

attention to larger structural and institutional components of HIV prevention and access to healthcare is one of the hallmarks of IE research on HIV (Smith, 1990).

To summarise, all critical social science projects reflect, in some capacity, on the relationship between knowledge production, governing practices and everyday experience. IE is one type of methodological tool used to enact this analysis that will be invoked throughout this dissertation. Though IE is not the predominant methodological lens of this research study, a focus on ruling knowledge, ruling relations, organizational procedures and enlarging the scope of the social have been integral to the collection and analysis of data below. In the remainder of this introduction, I will describe the structure of this critical analysis in further detail. But first, I will briefly introduce myself.

About the Author

In the interest of critical reflexivity, it is arguably necessary that I position myself in relation to this text. I am a young HIV-negative gay man who, like my research participants, has routinely had to wrestle firsthand with serostatus uncertainty in a series of different ways over the course of my 20s (including during the course of writing this dissertation). No doubt, my own experiences have played a meaningful role in how I have designed this project and how I have come to interpret the evidence collected. My ability to come to the interview process with an awareness of the various intricacies of gay male dating and sexual practice was a clear advantage to collecting nuanced insights from my research participants. And unquestionably, the social privileges afforded to me as a white, middle-class, conventionally handsome, able-bodied, young man has made this project possible, both in terms of the material resources necessary to carry out graduate level work and also to facilitate the social networking required to successfully carry out qualitative research of this nature. Nonetheless, great efforts have been made to collect

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Thus with the term *institution*, I am referring to complex realms of recognisable social activity that, when implemented over time, play a *defining* function in how social life is organised. Examples include public health, education, law, immigration, economics, the family, etc. When I discuss *navigating institutions*, I am referring to those explicit instances when a social actor interacts with a more concrete expression of an institution. It is here that we can look to examples of ruling relations and exchanges with organisations and bureaucracies. For example, social actors interact with health care and public health (an institution), by coordinating appointments at health clinics, engaging with physicians, filling out health history forms, going to government bureaus to get provincial health insurance, or by receiving education from local community agencies. It is by addressing the particularities of these social interactions that we can gather how institutions become manifest and come to coordinate social life.

experiences from those whose subject positions, sexual histories and opinions differ substantially from my own. However, while there is a significant diversity in the collected sample (see chapter five), arguably it often reflects my own subject position, particularly in terms of race, a stated limitation of this dissertation.

To uphold critical reflexivity and scientific integrity, interpretation of the evidence in the following chapters is not strictly based on my own experiences and preferences, but reflects, to the best of my abilities as a social scientist, a valid, rigorous and reasonable interpretation of the collected data. To make this concrete, during the data analysis and writing process it was necessary to frequently ask myself: is this really a fair representation of the data or is this interpretation just a reflection of my own biases as a gay man? Of course, pure objectivity in qualitative social science work such as this project is not possible. (Indeed, this entire project is premised on questioning the objectivity of *all* scientific knowledge production.) However, I could ensure that the following did not just turn into a thinly veiled attempt to talk about myself.

While it is necessary to position myself here, this project is not auto-ethnographic. I offer no candid explorations on my sexual practices in the following chapters. This is not in any way a critique against auto-ethnography or other similar methods, nor is it a denial that my own experiences with this epidemic have played a formative role in determining the arguments below. However, there is a tendency in HIV prevention scholarship, particularly when it is written by a gay man, for the author to openly divulge his own stories about his sexual life (Crimp, 2002; Dean, 2009; Dowsett, 2009). It is often as if the political and intellectual merit of an HIV scholar, at least if he is a gay male, can be ascertained by what we know about his sexual life or, at least, what he is willing to tell us about it.

I don’t fault those who wish to share their personal stories in the interest of a critical exploration on HIV. Sharing stories is a powerful scholarly device. But I do avidly resist the implicit expectation that as a gay man I *should* be willing to share my own sexual stories (or among the most egregious purveyors of this scholastic phenomenon, my body) in order to produce valid critical scholarship on gay male sexuality. The personal may be political, but evidently, so is our choice to withhold it.

Now that I have positioned myself in relation to this text, I will move on to outline the remainder of this dissertation.

Conditions of Uncertainty: Dissertation Outline

Thesis Overview

The central thesis of this dissertation is that the HIV prevention field has failed to achieve a stabilising point during the transition to the biomedical era of HIV prevention in Canada. Under these conditions of uncertainty we have witnessed epistemic and social and political unknowns proliferate as experts come to debate long-standing and newly emerging risk management strategies. Consequently, young HIV-negative gay men have consistently faced an inordinate amount of experiential uncertainty in relation to HIV prevention practices.[6] These social actors have been continually affected and governed by serostatus uncertainty, by experiences of being at-risk for HIV. It is my contention that closely exploring the lived experiences of serostatus uncertainty and its relationship to the knowledge production and governing practices that make up the HIV prevention field in its third decade in Canada, can offer HIV prevention science original and critical insights.

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[6] HIV risk does not only affect gay men. There are a few other main socio-demographic groups that are considered to be at high risk for HIV in Canada and who are arguably greatly affected by the conditions of uncertainty I explore in this dissertation. These include Black, African and Caribbean communities, First Nations, Indigenous and Aboriginal communities, intravenous drug users, sex workers, people in prison, bisexual men and women and trans communities (Marcellin, Bauer, & Scheim, 2013; Namaste, 2000, 2015; Namaste et al., 2012; Public Health Agency of Canada, 2013b). Rates of HIV incidence have also been particularly alarming among women in Canada (Public Health Agency of Canada, 2015). Many of the ideas put forth in this dissertation may be applied to understand how the epidemic affects these different communities. And indeed, there is some overlap between these different socio-demographic profiles with some of the men interviewed for this project.

However, since this dissertation often roots its analysis in a close examination of sociocultural and political context, below I will only focus on gay men. This is not because HIV is a more pressing concern among gay men than in other high risk groups. Rather, this methodological decision was made simply because it is not possible to do adequate justice to the scope of sociocultural and political factors associated with each group within a single dissertation; let alone to address the different ways men and women are affected by HIV risk, at both the physiological as well as sexual-political levels. Rather, my goal has been to create a strong and comprehensive framework that speaks to the experiences of HIV-negative gay men, which may be adapted, critiqued and even totally overhauled to address other communities greatly affected by HIV.

For this reason, I also focus on gay men instead of gay men *and* bisexual men. While some of the men interviewed for this project may have had sexual experiences with men and women (i.e. bisexual behaviour was not grounds for exclusion), the sociocultural frame I routinely applied during analysis was gay culture and gay and queer identification, rather than bisexual cultures, bisexual identity or straight identified MSM. Again, this is not an attempt to minimise the experiences of another demographic affected by this epidemic. Rather, it is a decision I made based on a respect for the diversity of lived experiences and sexual expression that cannot all be addressed in a single project.

In this dissertation, I also argue that frequently experiencing serostatus uncertainty can have significant repercussions on HIV-negative gay men's overall well-being and their engagement in social and political life as gay men. Serostatus uncertainty plays a significant role in how these social actors come to relate to HIV risk management—that is, their risk disposition—and consequently how they come to implement their agency in the face of contradictory and ambiguous knowledge, education and policies. By agency, I am referring to a social actor's fundamental capacity (whether enacted or not at a given moment) to act principally on his own volition, to make decisions based on the available options that social conditions provide or to determine a new course of action that he deems more suitable to his needs. Social forces always limit and shape the agency of social actors, yet this does not necessarily eliminate a social actor's capacity to confront these social forces in ways that he deems essential for his self-preservation. A decision to use a condom or not may be an example of enacted agency, as is a decision to get tested for HIV, to have a monogamous relationship or stay casually dating, to find sexual partners online, to abstain from sex, to learn more about HIV prevention by surfing the Internet, to request that a sexual partner receive an HIV test, or to receive a vaccine for the Human Papilloma Virus to reduce the risk of HIV transmission (see chapter two for review). There are many options for navigating sexual health needs. In this dissertation, I explore the multiple ways HIV-negative gay men enact agency in response to serostatus uncertainty beyond a decision to abandon condoms during anal sex.

With the concept of well-being I am moving away from an exclusive interest in HIV transmission and proclivities toward sexual risk-taking in order to think more broadly about how HIV-negative gay men's experiences of continually managing serostatus uncertainty influences their overall level of contentment, quality of life and sense of social connectedness (Centers for Disease Control and Prevention, 2016; Dodge, Daly, Huyton, & Sanders, 2012). In this study, I will explore numerous instances where social actors, though successful at preventing HIV transmission, have lacked the psychological, social and physical resources necessary to address the challenges posed by the HIV epidemic in its third decade in Canada, thus eroding their general well-being.

A significant bulk of HIV prevention research on HIV-negative gay men focuses on understanding the underlying motivations for unprotected anal intercourse and examines how social vulnerabilities and discontentment can lead to sexual risk-taking, and unprotected anal intercourse in particular. However, for most of the HIV-negative gay men interviewed for this project, having to confront the residual risks associated with safer sex or lower risk sexual practices often generated a continued sense of unease and uncertainty. Indeed, anxiety, confusion and social conflict related to HIV prevention are not always associated with higher risk sexual practices, but often with safer sex itself. Failure to comprehensively address these challenges represents a missed opportunity to explore how risk is actually experienced and negotiated in everyday life. Moreover, in this dissertation I argue that the periodic discontentment of HIV-negative gay men is often a *direct* product of having to deal with the epistemic and social and political uncertainties associated with HIV prevention knowledge and governing practices during the transition to the biomedical era of HIV prevention. Difficult experiences of serostatus uncertainty are often *directly* related to the conditions of uncertainty produced by the HIV prevention field. Conditions of uncertainty corrode well-being.

In short, in the third decade of this epidemic, HIV prevention remained an imperfect, confusing, contested and highly politicised set of scientific claims and sexual practices that many HIV-negative men have struggled (to different extents and in different ways) to make sense of. In this dissertation, I argue that it is necessary to focus on these struggles, rather than understanding once again the motivations for unprotected anal intercourse. I will now outline the general parameters of this investigation, first addressing the disciplinary fields that I will draw on.

Interdisciplinarity and Research Fields

As a work of critical social science fulfilling the requirements for a doctoral program within the Centre for Interdisciplinary Studies in Society and Culture, I present this dissertation as an interdisciplinary project since it "analyzes, synthesizes and harmonizes links between disciplines into a coordinated and coherent whole" (Choi & Pak, 2006). This is especially the case with how I make sense of the dynamics of the HIV prevention field in chapters three and four, a task that involves comparative reading across multiple disciplines. Analytically, the following dissertation draws heavily on concepts and research findings from different disciplines such as psychology, anthropology, philosophy, health promotion studies, cultural studies and sexuality studies. Nonetheless, this dissertation draws predominantly from sociological theory and can be read, more or less, as a sociological text. Sociology was selected as the primary disciplinary lens for this project as it is the most appropriately suited to answering the questions this dissertation poses. Indeed, many of the key critical social science projects on HIV that are guiding this project are sociological or remain very conversant with sociological discourses on knowledge, health and sexuality. While this project recognises the value of interdisciplinary thought and methodology, selecting a primary discipline to draw from allows for a more coherent narrative.

In terms of scholarly fields, this dissertation can be read as operating at the intersections of critical social science on HIV prevention (itself a sub-field of HIV prevention science), critical studies on risk and uncertainty (itself a combination of theories and tools from social scientific fields on knowledge, power, culture and emotions) and gay men's sexual health (itself a combination of health and illness studies and sexuality studies).[7] In the following chapters, I will occasionally speak to the broader scholarly fields from which I draw, but the main narrative below operates at the juncture of these three scholarly areas.

In short, this dissertation is an interdisciplinary work of critical social science that often obscures the boundaries between different disciplines and scholarly fields, while maintaining a broader scholarly narrative that fits appropriately into sociological investigations into knowledge, power, health and sexuality. I shall now move on to describe the main theoretical tools that will be used to collect and analyse the data.

Theoretical Framework: Critical Risk and Uncertainty Studies

In chapter one, I will start by outlining some key tenets from critical risk and uncertainty studies, the main theoretical foundations of this dissertation. These ideas will come to inform how I actualise the parameters of critical social science on HIV that I introduced above. To develop an original analytic framework to guide data collection and analysis in the following

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[7] Considered to be a minor scholarly field in this dissertation, I have selected not to offer a separate literature review on health and illness and sexuality literatures, as I have done with critical social science on HIV (chapter four) and critical studies on risk and uncertainty (chapter one). Instead, readers will note that key scholarly arguments about health and illness and sexuality are integrated evenly throughout this dissertation, consistently supplementing the discussions on critical social science and risk and uncertainty studies.

chapters, I draw on ideas from risk society theory, cultural risk theory, governmentality and biopolitical theory, pragmatic investigations into risk experience and emotions theory.

I begin by defining uncertainty and risk. I ultimately argue that *uncertainty* refers to an awareness of what we do not fully know, or that which remains ambiguous to us. And *risk* is the probabilistic exercise and experience of making sense of the uncertainty associated with potential adverse outcomes in the future. Risk implies that we are fully aware of the probabilities of negative harms occurring and the effectiveness of available prevention strategies. In contrast, uncertainty suggests that we are not in full agreement about what these probabilities are and that knowledge about risk is open to debate and modification. Thus the concept of uncertainty reminds us that when it comes to the prevention of harm, we always have our doubts. Hence social actors who find themselves *at-risk* for a potential threat like HIV —or what I regularly refer to as *serostatus uncertainty* in this dissertation— are not at-risk simply because they are unable to logically process the potential for the actualization of a harm, or because they are apathetic to potential health threats. Rather, being at-risk is an inevitable product of the conditions of uncertainty generated by the HIV prevention field, the product of ambiguous and conflicting knowledge about how to best prevent HIV and avoid the experience of serostatus uncertainty.

In order to understand these conditions of uncertainty more succinctly, I break down the general concept of uncertainty into three main modalities, which correspond to the three main domains of uncertainty and risk management: knowledge production, governing practices and everyday experience. The first form of uncertainty is *epistemic uncertainty*, which refers to the unknowns and ambiguities that are a result of our limited research methods and diagnostic tools. The validity and generalizability of all scientific knowledge claims are always open to question because of the limitations of our knowledge production practices. The second modality of uncertainty is *social and political uncertainty*, which refers to the population level and social-justice effects that are both managed and produced by the governing practices implemented to address the threat of the unknown. The third modality of uncertainty is *experiential uncertainty*, which refers to everyday social actors' unique confrontations with the unknown. In this dissertation, I will be examining serostatus uncertainty as a unique form of experiential uncertainty.

Altogether these three modalities of uncertainty make up the *uncertainty triad*, which is one of the main original contributions of this dissertation. Thinking in and through the uncertainty triad guides the literature review and data collection process for this dissertation. In chapters three and four, I critically review knowledge production and governing strategies in the HIV prevention field, closely reflecting on the generation and mobilisation of epistemic and social and political uncertainties. Drawing on interview data, in chapter six I closely reflect on experiential uncertainty (i.e. serostatus uncertainty) to develop an original theory on risk disposition. Then in chapter seven, I bring together all of this analysis. I use examples of everyday experience to directly question some of the knowledge production and governing strategies that make up the HIV prevention field, demonstrating the relationship between epistemic, social and political and experiential uncertainties.

Established theories on risk and uncertainty have played a significant role in the development and implementation of the uncertainty triad framework. Risk society theory helps us to think about how social actors implement self-identity in the context of shifting knowledge and social institutions. The concept of the *stabilising point*, another original contribution of this dissertation, was developed through a close reading of risk society literature. The stabilising point refers to a *sociological condition* (not an epidemiological phenomenon) whereby social practices in each sphere of uncertainty management (knowledge production, governing practices and everyday experience) are, more or less, in sync. There is a general consensus among experts on how to manage uncertainty and a general alignment between the social practices of experts and the social practices of everyday social actors. Failure to achieve a stabilising point means that the social practices in each domain of uncertainty management are constantly being questioned and challenged by the social practices and uncertainties generated in the other two domains. Consequently, there is little expert consensus on how to manage uncertainty and our very conceptions of who is at-risk and what social practices pose the most risk are under constant negotiation. In other words, in the absence of a stabilising point, we face conditions of uncertainty.

Cultural theory on risk extends this analysis further, focusing on the ways in which risk and uncertainty have moral dimensions that serve to establish social hierarchies and responsibilize certain social actors, blaming them for producing health threats. Governmentality and biopolitical theory demonstrate the ways in which knowledge about risk is used to construct and govern social actors as at-risk subjects, individuals who are understood and who then self-regulate vis-à-vis their association to a particular harm. Biological citizenship literature takes this further to argue that at-risk status can become the grounds for making citizenships claims, a biopolitical process which is more frequently playing out at the microscopic dimensions of our bodies.

And finally, I will review research that looks at the pragmatic components of risk management in everyday life to discuss nuances that are missed in grand theorizations on risk and uncertainty. From here, I will examine some of the main contributions of the sociology of emotion to risk and uncertainty theory. Beyond the cognitive or logical processing of risk and uncertainty, social actors are also emotionally affected by the threats of the unknown. Understanding the emotional dimensions of risk and uncertainty management in everyday life is thus imperative to understanding how social actors implement their agency. Throughout this dissertation, I will regularly make sense of these emotional elements, focusing particularly on the social and political dimensions associated with the management of anxiety.

For the first half of this dissertation, I will be primarily interested in the epistemological foundations of HIV prevention research. Yet, behind all this data and scientific debate are the stories of social actors emotionally experiencing the effects of the HIV epidemic and experts using diverse emotion management strategies to regulate the conduct of social actors. Thus drawing on various literatures from the sociology of emotion, I will discuss the relationship between emotional experience and agency during the transition to the biomedical era of HIV prevention. I will also discuss the political dimensions of emotion management by focusing on different HIV education campaigns and activist art in this period. I will concentrate heavily on the experience of anxiety, a sense of powerlessness a social actor feels over his ability to manage future threats. Understanding the social dimensions of anxiety comprehensively is imperative to the development of the theory of risk disposition that I develop in chapter six and offers original contributions to sociological discourses on gay men and HIV risk.

In sum, the theoretical framework underpinning this dissertation is based on a combination of key ideas developed from a close reading of critical risk and uncertainty studies. In chapter one, I will discuss how these ideas merge neatly together despite potential epistemological and ontological differences across different schools of scholarly thought. The following review of the established literature and empirical data collection has been organized by thinking in and through the uncertainty triad, an original contribution to critical social science on HIV and critical perspectives on risk and uncertainty.

HIV Prevention Field: Literature Reviews

In chapter two, I will provide an overview of biological and behavioural elements of HIV prevention and gay male sexual practice during the transition to the biomedical era of HIV prevention. This review is necessary in order to understand the arguments developed in the remaining chapters.

From here, I will move on to focus on the knowledge production and governing practices that make up the HIV prevention field, focusing on the epistemic and social and political dimensions of the uncertainty triad. In chapter three, I will focus on mainstream biomedical and public health research, or ruling forms of knowledge. From this review I will argue that that HIV prevention field continually produces and cultivates uncertainty, constantly aggrandising or minimising epistemic uncertainties in the interest of achieving diverse (and conflicting) biopolitical agendas. Epistemic uncertainty is cultivated through several interrelated mechanisms. Firstly, drawing on epidemiological science, researchers and community members often (to borrow a term from Pisani) “beat up” the epidemic so that even though infection rates are relatively stable, there exist an unrelenting narrative that HIV-negative gay men remain highly at-risk and are very active sexual risk takers. I do not deny that HIV or other STIs are very real health threats to gay men, or that many gay men do take sexual risks. I do, however, argue that epidemiological science often makes HIV infection seem exceedingly likely for all sexually active gay men despite significant variance in sexual practice.

Additionally, I will explain how under newer epidemiological models exploring HIV prevention such as the Treatment Cascade model (Burchell, 2015; Gardner et al., 2010) and the Treatment as Prevention paradigm (Montaner et al., 2010), HIV-negative men who cannot resolutely confirm their HIV statuses are framed as posing the greatest risk to gay male communities due to unmanaged viral loads. This epidemiological argument thus frames serostatus uncertainty and untested self-identified HIV-negative men as a very serious problem fuelling the epidemic during the transition to the biomedical era of HIV prevention. In chapter three, I will also examine how researchers and community members continually debate the efficacy and effectiveness of HIV prevention practices, including well-established strategies like condom use or the risks associated with oral sex. Such debates are not necessarily new to the field (Flowers, 2001). However, I will show how they have become even more pronounced during the transition to the biomedical era of HIV prevention.

I will further demonstrate how significant levels of doubt have been cast over the effectiveness of emerging biomedical prevention technologies, with some experts even arguing that these tools can actually increase risks to population health. This is particularly the case when it comes to debates over the risk reduction associated with undetectable viral load. I will be exploring this topic in considerable detail. Indeed, one of the original contributions of this dissertation is a thorough discussion of how the risk reduction associated with undetectable viral load has played out in a very incongruous fashion across knowledge production, governing practices and everyday experience in Canada. Debates on viral load have affected how we think about the risks associated with serovariant sex, the necessity of serostatus disclosure, the risks posed by undiagnosed men and the manageability of HIV infection. By analysing these various issues, I will argue that the transition to the biomedical era of HIV prevention can most succinctly be classified as a period marked by the simultaneous increase in optimism *and* apprehension over the risk reduction of undetectable viral load.

Due to the epistemic uncertainties associated with emerging biomedical research on undetectable viral load, there has been very limited expert consensus on the prevention benefits of undetectable viral load for gay men. Consequently, we have witnessed a series of ambiguous and/or contradictory governing strategies to address this prevention issue. I will focus on some education campaigns and the criminalisation of HIV non-disclosure to solidify this point. Moreover, concerns have been raised that information on undetectable viral load may lead to increased risks to population health. Indeed, certain forms of epidemiological research actually aim to link (usually unsuccessfully) new biomedical technologies with an increased propensity for sexual risk-taking. For example, AIDS optimism research argues that because HIV treatments have turned HIV from a death sentence into a chronic manageable condition, gay men have become more ambivalent about HIV infection. Meanwhile, treatment optimism research argues that gay men are likely to use emerging information on undetectable viral load to justify having unprotected anal intercourse. Both of these epidemiological theories implicitly position gay men as being incapable of critically processing new information on prevention and displaying a degree of recklessness or apathy. I will closely examine the intricacies of the AIDS optimism hypothesis and the treatment optimism hypothesis in chapters three.

In chapter four, I will move on to examine critical social science literature and humanities perspectives on HIV and gay men. Here I will investigate how the epistemic and social and political uncertainties associated with HIV prevention affect sexual practice and how uncertainty has become moralised and politicised at different social sites. Examining critical works by key scholars in this field, as well as community examples of HIV activism and prevention education, I will demonstrate how the prevention practices of gay men have evolved beyond condom use as the epidemic has changed. I will pay particular attention to the ethico-political implications of barebacking (condomless anal sex), serosorting (selecting sexual partners with the same HIV status) and HIV status disclosure, by examining activist and community education campaigns that argue that serosorting is a discriminatory practice that produces HIV stigma. During my analysis of prevention campaigns and artwork, I will routinely draw on theories from the sociology of emotion to discuss the political dimensions of emotion management. I will describe how active members of the HIV response often problematize certain emotional responses (anxiety most specifically) and how the fears of HIV-negative gay men are often criticised in the interest of ending HIV stigma.

From this analysis, I will demonstrate how the epistemic and social and political uncertainties associated with HIV prevention continue to proliferate and become mobilised politically across different social sites. This creates challenges for social actors who must manage HIV risk in their everyday lives, a process that the remainder of the dissertation will explore.

Interviews and Data Analysis

At the end of chapter four, I move on to develop an original empirical research project premised on interviews with young HIV-negative gay men. In chapter five I then outline the specifics of data collection and analysis. I designed this project by thinking through some of the main contributions of critical social science on HIV (and some of the main tenets of IE), critical studies on risk and uncertainty studies (the uncertainty triad in particular) and the established scientific literature (the literature reviews in chapters three and four). Critical social science perspectives on HIV routinely draw on lived experience to question the validity and generalizability of established scientific literature. IE in particular focuses on expanding our view of the social by examining social actors and social practice less present in ruling forms of knowledge. And to complete the uncertainty triad, it is necessary to understand the experiential dimensions of uncertainty in order to question the limitations of knowledge production practices and governing strategies. Thus in the second half of this dissertation, I explore the experience of serostatus uncertainty in depth (a form of experiential uncertainty), using it as a critical device to expand our view of sexual practice and explore the limitations of the HIV prevention field.

In my review of the established scientific literature, I demonstrate that a substantial portion of research on gay men and HIV prevention, including *both* mainstream and critical research, focuses on examining the motivations for unprotected anal intercourse or barebacking. This research asks: *why do gay men have unprotected anal intercourse when they are aware of HIV risk?* Moreover, I argue that the experiences of HIV-positive men, men who frequent higher risk sexual milieus like bathhouses and men who are directly linked up to ASOs, are pervasive in the literature, particularly in Canada. I will argue that this focus on men who frequently engage in higher risk sex flattens out our understanding of gay male sexual practice by focusing too exclusively on anal sex and barebacking at the expense of other prevention issues that are important to young gay men. This interest in barebacking, though logical considering how HIV is transmitted (see chapter two), comes at the expense of a detailed analysis of the risks associated with lower risk practices such as oral sex and *protected* anal sex, activities which also produce serostatus uncertainty.

By consistently collecting narratives from those who take heightened sexual risks, HIV prevention researchers often fail to understand risk avoidance practices (such as abstinence) that are also necessary for us to fully understand how young gay men are negotiating serostatus uncertainty. Moreover, by spending considerable time examining the perspectives of HIV-positive men and social actors more closely affiliated with the HIV prevention field (an epistemological habit which has become institutionally solidified in Canada under the CBR paradigm), researchers tend to examine the perspectives of social actors with elevated sexual health literacy levels. In Canada, missing from our analysis of the epidemic in recent years are those men who are less affiliated with the HIV prevention field and who have potentially lower levels of HIV prevention knowledge.

However, to develop original knowledge and insight, following IE, we need to expand our view of the social. Thus in order to offer original contributions to the field of critical social science on HIV, I collected narratives less pervasive in the established literature. I recruited young (aged 18-35) HIV-negative or serostatus unknown men who are gay or queer identified and living in Montréal and Toronto, for an in-depth interview. These men must have had one or more experiences where they were unsure about their HIV statuses or where they felt like they were at-risk to some capacity, for whatever reason. The sexual history of these social actors ranged considerably, with some having multiple instances of higher risk sex, others only engaging in lower risk sexual practices and some even abstaining from sexual activity altogether. The participants recruited could not have previously participated in an in-depth, in person research interview about HIV/AIDS and could not have been closely affiliated with the HIV service industry before the interview by being a service provider or a long-term volunteer at an ASO.

In chapter five, I detail the specifics of the data collection and analysis process, which is based on in-depth qualitative interviewing and interpretative phenomenological analysis. Interpretative phenomenological analysis (IPA) is a methodological framework that is well suited to examining the lived experiences and sexual practices (not just behaviours) of social actors. It focuses on understanding how social actors make sense of their personal and social worlds. IPA is used to produce an explanatory system that can demonstrate why social actors in *specific* contexts, occupying *specific* social worlds, perceive or respond to *specific* events in *specific* ways. The analytical parameters set up by IPA have been essential to the development of an original theory on risk disposition, the next topic I explore.

Risk Disposition Theory

In chapter six, I focus on understanding the experiential modality of the uncertainty triad in order to develop an original theory on risk disposition. As first mentioned above, by risk disposition I am referring to a social actor's unique relationship to HIV that evolves over time. A social actor's risk disposition is a product of his particular social location and unique lived experiences and can be described by investigating his processes of risk reflexivity (his perceptions and assessments of risk, which will be explained fully in chapter one) and his tolerance or aversion to experiences of serostatus uncertainty. Understanding a social actor's risk disposition is essential for understanding how he implements his agency—how he adjusts his sexual practices, processes new biomedical knowledge and relates to other gay men under conditions of uncertainty.

Beyond an interest in sexual risk-taking (barebacking), this dissertation offers original contributions to the field of critical social science on HIV by examining how gay men develop risk tolerance—that is, an acceptance of serostatus uncertainty—or risk aversion—that is, a rejection of serostatus uncertainty—during the transition to the biomedical era of HIV prevention. Tolerance or aversion to serostatus uncertainty is a core element determining the risk disposition of a social actor. The focus of risk disposition theory is not to better understand the rationales for why gay men have unprotected anal intercourse. Rather, I will make sense of why some gay men struggle more and others less with periods where they cannot be resolutely certain if they are still HIV-negative. Through this analysis, I will demonstrate how various social, cultural, material and political forces come to orient social actors to HIV risk management in different ways, cultivating or alleviating anxiety or a felt sense of powerlessness. As such, I consider how gay men develop tolerance or aversion to serostatus uncertainty over time and how risk tolerance comes to play an essential role in the development of a social actor's risk disposition.

I will begin explaining risk disposition theory by drawing on key ideas from the sociology of emotion. Here I will describe the important role of anxiety in the context of serostatus uncertainty. Throughout chapter six I will argue that favourable social conditions for assessing and managing serostatus uncertainty support risk tolerance and less favourable social conditions support risk aversion, mainly by fostering or alleviating the felt sense of powerlessness, or anxiety. I will demonstrate this by first examining in detail how at-risk gay men access health services and navigate bureaucracy in Canada. In other words, motivated by IE, this chapter focuses on the logistical and institutional aspects of HIV risk management. These are dynamics of risk management practices less discussed in much of the established literature on gay men and HIV risk, which favours understanding sexual behaviour and motivations for sexual risk-taking. A consideration of the relationship between the logistical components of HIV prevention practices (such as accessing HIV testing) and the socio-sexual components of HIV prevention practices (like sexual confidence) is another key contribution to critical social science perspectives on HIV.

I will begin this examination by first focusing on how social actors may either assess themselves as being at-risk (internal risk assessment), or may be prompted by external forces (external risk assessment), with the former cultivating risk tolerance and the latter risk aversion. I will then move on to explore how moments of serostatus uncertainty can become key learning moments about HIV prevention for gay men with limited sexual health literacy levels (a product of insufficient safer sex education), before highlighting the logistical difficulties gay men can face when seeking HIV testing services or trying to access PEP. I will spend some time discussing the additional concerns migrant social actors have over seroconversion as a result of current immigration policy that requires HIV testing, arguing that current immigration policy tends to produce risk aversion.

In the final part of chapter six, I will move on to explore sexual practice. Here I shall examine the role different types of sexual relationships, sexual confidence and sexual communities have in shaping risk tolerance. I will argue that certainty over one's sexual choices makes serostatus uncertainty more tolerable, whereas uncertainty over one's sexual choices makes serostatus uncertainty less tolerable. If a social actor is ambivalent about his motivations for seeking a specific sexual experience, the serostatus uncertainty associated with that experience can become perceived or moralised in a more negative fashion. Ambivalent feelings towards specific sexual experiences may be a product of conflicts, clashing expectations, miscommunications, the breakdown of trust or a lack of sexual confidence. Moreover, a social actor's relationship to sexual communities plays a significant role in shaping risk tolerance. The further removed a social actor is from gay male milieus, the less knowledgeable and risk averse he will likely be.

In sum, by closely investigating the experiences of serostatus uncertainty, I will investigate how young HIV-negative gay men's relationship to HIV risk management can change over time. Accessing health services, navigating governmental institutions and various nuanced components of sexual practice come together to support or inhibit tolerance to serostatus uncertainty overtime. These processes greatly affect the well-being of HIV-negative gay men and come to determine how they implement their agency under conditions of uncertainty.

Social and Ethico–Political Dimensions of HIV Risk Management

In chapter seven, I extend upon this analysis of risk disposition by bringing in all the elements of the uncertainty triad, examining the links between epistemic uncertainty, social and political uncertainty and experiential uncertainty. Drawing on the nuances of serostatus uncertainty and gay male sexual practice, I question some of the ruling forms of knowledge and dominating governing practices that I first outlined in chapters three and four. In particular, I will draw on the interview data to question AIDS optimism, treatment optimism, the ethics of HIV status disclosure and the criminalisation of HIV non-disclosure.

Drawing on the narratives from the interview participants, I will examine how HIV-negative gay men's sexual practices have adjusted in response to these various ethico-political issues. Questioning the validity and generalizability of epidemiological research on gay men, I will argue that that the participants in this study are not normally "AIDS optimistic" or "treatment optimistic." They are not using new biomedical technologies to justify having unprotected anal intercourse. Indeed, many of the participants interviewed were highly sceptical of emerging biomedical technologies or were unaware of them in the first place. Many still fundamentally rely, for better or worse, on serosorting as a form of risk management. Indeed, I will argue that serosorting is a fundamental component of the risk disposition of many HIV-negative gay men. Moreover, those interviewed who do not serosort still use condoms when engaging in serovariant sex. The men interviewed also demonstrated a strong preference for HIV status disclosure and differing opinions on the criminalisation of HIV non-disclosure. However, none were relying on HIV status disclosure to justify having unprotected anal sex.

I will use these findings to critique models of HIV prevention research and education that focus on individual risk calculation. Beyond a consideration of risk reduction, HIV-negative gay men must consider the ethico-political implications of their sexual choices—that is, they must factor in the relational. This can be challenging when a risk averse HIV-negative gay man wishes not to reinforce viral apartheid (socio-political hierarchies between HIV-negative and HIV-positive men) by perpetuating HIV stigma, but is conflicted by the uncertainties associated with HIV prevention.

In summary, in chapter seven I will demonstrate a lack of congruence between the knowledge production and governing practices in the HIV prevention field with the sexual practices of everyday HIV-negative gay men. I will demonstrate how the HIV prevention field, through the proliferation of epistemic and social and political uncertainties, amplifies the experiences of serostatus uncertainty for HIV negative men, creating unique ethico-political dilemmas that these social actors must navigate. These are social dynamics that, though imperative to understanding how gay men are affected by HIV, are often lost in the established literature's emphasis on understanding risk-taking behaviour.

Under Conditions of Uncertainty

To summarise the layout of this investigation, the following dissertation operates at the juncture of critical social science on HIV, critical studies on risk and uncertainty and gay men's sexual health studies. As an interdisciplinary form of critical social science on HIV, this project utilises critical theory and methodologies from across the social sciences and humanities, it has a reflexive orientation to the knowledge production practices of the HIV prevention field, it offers critiques of biomedical and public health expertise in the field and it places an emphasis on understanding sexual practice over behaviour. Following Boltanski (2011) and IE (Smith, 2005), the following dissertation incorporates the everyday critique and the moral judgments of social actors into its analysis as a way to understand some of the limitations to our current approaches to HIV prevention in Canada.

In chapter one, I will outline key ideas from critical studies on risk and uncertainty, producing an original analytic framework known as the uncertainty triad. In chapter two, I will review biological and behavioural aspects of HIV prevention. I will then move on to closely examine the epistemic and social and political uncertainties that characterize the HIV prevention field in Canada in its third decade. In chapter three, I will examine mainstream biomedical and public health research, ruling forms of knowledge in the HIV prevention field and will argue that the field produces and cultivates uncertainty and turns HIV-negative gay men into at-risk subjects. In chapter four, I will examine critical social science perspectives on HIV prevention to investigate how gay male sexual practices have evolved over the course of the epidemic.

In the interest of closely exploring experiential dimensions of uncertainty, I will then move on to chart out an original empirical research project examining HIV-negative gay men's everyday confrontations with serostatus uncertainty. In chapter five, I will outline the specific process behind data collection and analysis. In chapter six, I will discuss the results of this qualitative study and develop an original theory on risk disposition. Here I will outline how serostatus uncertainty affects well-being and how gay men build risk tolerance or risk aversion in order to implement agency under conditions of uncertainty. In chapter seven, I will discuss how gay men confront some of the ethico-political challenges of HIV prevention during the transition to the biomedical era of HIV prevention. I will use these findings to generate original critiques against mainstream biomedical and public health research on gay men.

By applying the uncertainty triad I will argue that the HIV prevention field has failed to achieve a stabilising point during the transition to the biomedical era of HIV prevention. By examining the link between knowledge production, governing practices and everyday experience, I will demonstrate how the field has continued to produce conditions of uncertainty. The lack of expert consensus and the propagation of epistemic and social and political uncertainties have generated challenging moments of experiential uncertainty that greatly affect the well-being of HIV-negative gay men. What will become clearer with each passing chapter is that during the transition to the biomedical era of HIV prevention, HIV-negative gay men consistently find themselves confronting serostatus uncertainty. However, this is *not* because they are reckless risk seekers who are apathetic to HIV infection. Rather, it is because HIV prevention in everyday life is complex and full of uncertainty. The rules of the game are always being adjusted and debated, always being moralised and politicised in different ways. My goal in this dissertation is to describe this process in vivid detail, so that we may better understand how young HIV-negative gay men implement agency in the face of all this uncertainty, how they come to adapt to being at-risk and how they come to carve out romantic and sexual lives in the context of an extremely convoluted, politically volatile health epidemic.

There is nothing so practical as a good theory.

Michael Bloor, *The Sociology of HIV Transmission*

Chapter One

Risk and Uncertainty

Toward a Critical Social Science on HIV Prevention

For over three decades now a rich interdisciplinary scholarly field of empirical research and theoretical exploration centred on the topics of risk and uncertainty has been advancing, offering critical scholars a wide array of concepts and frameworks to make sense of knowledge production practices, governance strategies and everyday confrontations with potential dangers. These ideas about risk and uncertainty have played a pivotal role in advancing our critical perspectives on health and illness as well as sexual practice in the neoliberal era, especially in the discipline of sociology (Gabe, 1995). The goal of this chapter is to explore some of these ideas in detail in order to build an analytical frame that will guide the review of scientific HIV prevention literature and community documents in the following chapters.

I will begin this chapter by defining risk and uncertainty, acutely exploring the intimate relationship between these two concepts. In this introductory section I will also offer several key definitions from the field of risk and uncertainty studies (e.g. risk management, risk reflexivity, epistemic uncertainty, etc.) that will serve as indispensable tools in the chapters that follow. After providing this conceptual clarity, I will then move on to examine principal arguments from four critical schools of thought on risk and uncertainty: risk society theory, cultural risk theory, governmentality and biopolitical theory, and experiential risk analysis (including contributions from both emotions theory and empirical pragmatic investigations on risk). Each of these schools of thought offers us both theoretical and methodological aspects that I shall explore. A core concept developed in this review is the notion of the at-risk subject, the social actor who is researched, monitored and governed, and consequently, is expected to self-govern, in relation to a potential threat. In terms of HIV prevention, the at-risk subject is governed by *serostatus uncertainty*, by the inability to *resolutely* confirm his HIV status as HIV-negative. Understanding serostatus uncertainty—at the epistemological, socio-political and experiential levels—is this dissertation's core objective.

I will conclude this chapter by bringing together key ideas from this critical review, offering an analytical framework on risk and uncertainty management that will guide the data collection and data analysis for the remainder of this dissertation. This framework is organised by three general spheres of uncertainty management activities: knowledge production practices, governing practices and everyday experience. Each of these three spheres of activity is most closely associated with a specific modality of uncertainty. Going in order, epistemic uncertainty refers to the limitations of the validity and generalizability of all scientific knowledge claims due to the constraints of available research tools. Social and political uncertainty refers to the unknown effects that arise from various governing practices that are meant to minimise the threat of potential harms to society. Experiential uncertainty refers to the unknowns that arise as a result of a social actor's unique lived experience. I refer to these three modes of uncertainty as the *uncertainty triad*. In outlining the connections between these different forms of uncertainty, I will also provide general analytical questions that will explicitly guide the literature reviews in the forthcoming chapters.

In the conclusion, I will take the time to summarise how each school of thought on risk and uncertainty offers its own unique and important contributions to this analytical framework. I will also use this time to demonstrate how these schools of thought work neatly together within the context of the original analytical frame developed in this chapter, despite recognising the important epistemological and ontological differences between these different scholarly traditions. And finally, returning back to the overarching methodological agenda offered in the introduction of this dissertation, I shall discuss how the risk and uncertainty management framework offered in this chapter will help us to effectively perform a critical social science project on HIV.

The key objective of this chapter is to demonstrate the profound role uncertainty plays within our knowledge about health and illness issues and highlight how uncertainty directs the agency of social actors in the neoliberal era. There are always limits to our knowledge, errors in judgement, gaps in what we know, room for speculation and variable degrees of doubt. How we assess and interpret this uncertainty—how we evaluate what constitutes reasonable and unreasonable doubt—is a highly political process that comes to moralise certain behaviours and persons. In this chapter, it is my task to make sense of this process in order to bring analytical insight to the forthcoming critical review of the scientific literature on HIV prevention.

Risk and Uncertainty: Definitions

Across the social sciences and humanities there are numerous definitions and interpretations of risk. In psychology, Blackwell defines risk simply as "the probability of a particular adverse event occurring during a stated period of time" (2007, p. 2). In introducing risk as a key term in social and cultural theory, Lupton explains that "in contemporary western societies where control over one's life has become increasingly viewed as important, the concept of 'risk' is now widely used to explain deviations from the norm, misfortune and frightening events. This concept assumes human responsibility and that 'something can be done' to prevent misfortune" (1999, p. 3). In generating a framework for the sociology of emotions, de Courville Nicol defines risk as "the fear triggered by the perception that one lacks the capacity to prevent a harmful outcome based on a calculation of its probabilities, whatever the form taken by this estimation, with precaution as its pair" (2011, p. 40). While Zinn (2008) reminds us about the future orientation of risk and its relationship to control: "The concept of risk is tied to the possibility that the future can be altered – or at least perceived as such – by human activities. It might be that we can directly control an event or that we can at least make provisions for the aftermaths of an event" (p. 4). And finally, Wilkinson (2010) argues that "the original meaning of risk is rooted in the development of calculative reason and is used with reference to the prospect of acquisitive opportunity.... However, now it is arguably the case that such positive appreciations of risk are confined to a minority; for at the level of popular understanding, it appears this word is more often used to highlight the prospect of imminent danger and harm" (p.15).

Thus in its most general usage, risk refers to the probability of a negative, undesired, dangerous or harmful outcome that is associated with a particular subject, object, relation or action. To claim that a particular action *poses a risk* is to claim that this action is associated with a higher degree of causing harm. To claim that a group of social actors is *at-risk* is to claim that members of this group are probabilistically more likely to experience a particular harm compared to the general population. To claim that an individual social actor is *at-risk* infers that this individual is probabilistically more likely to experience a particular harm either because of their membership within a particular risk group, or because of previous actions taken he or she is now qualitatively uncertain about their relationship to a potential harm.

Indeed, risk and uncertainty are parallel concepts (Bammer & Smithson, 2008; Zinn, 2008). Like risk, uncertainty also has numerous definitions in the social scientific literature (Smithson, 2008). It is sometimes described as a form of metacognition, a knowing about (not) knowing, an ignorance that is based on having incomplete or ambiguous information (Smithson, 2008). In this way it can be thought of as a form of "'negative knowledge', in other words knowledge of the limits of knowing, mistakes in attempts to know, things that interfere with knowing and what people do not want to know" (Smithson, 2008, p.15). Uncertainty usually involves an explicit awareness of what one does not know or cannot confirm. Thus uncertainty can be defined "as the subjective perception of ignorance. It is this fundamental perception that makes possible the many manifestations of uncertainty catalogued in conventional definitions of the term—e.g., feelings of doubt, perceptions of indefiniteness, indeterminacy, unreliability, etc." (Han, William, Klein, & Neeraj, 2011, p.3). Importantly, this definition not only highlights the cognitive or logical dimensions of uncertainty, but also the unsettlingly affective or experiential aspects of not knowing. Uncertainty is simultaneously an epistemological matter, a questioning of what we believe to be true, and an ontological state, a condition that affects being. Uncertainty may come from a lack of knowledge or from ambiguous knowledge. However, at the level of the individual social actor who has to make decisions in the present moment with regards to a potential threat in the future, it may be experienced as (potentially strong) feelings of doubt, possibly to the point of anxiety and a sense of losing control. I will return to these issues to examine the emotional aspects of risk and uncertainty more closely below.

A useful distinction is sometimes drawn between the concepts of risk and uncertainty (Kasperson, 2008, p. 338). With risk, a social actor has an awareness of all potential negative outcomes associated with a particular object or event and a relatively accurate or stable understanding of the probabilities of negative outcomes occurring. One cannot be certain that negative outcomes will be avoided, but they can be fairly confident that they know the *likelihood* of a negative outcome occurring. If something is considered to be low risk, for example, I cannot guarantee that an adverse event won't be actualized, but I can agree that it is probabilistically unlikely to occur. In contrast, with uncertainty, the magnitude and probability of adverse events occurring cannot be estimated with precision—the probability of risk is indeterminate. In this instance, I am not really sure what the "low" in "low risk" means and I am unsure how probabilistically likely it is that an adverse event will be actualized. Risk implies a fairly dependable awareness of the probabilities of a particular threat occurring. While with uncertainty, our understanding of a particular threat is more vague.

Thus uncertainty includes those moments where risk knowledge cannot be straightforwardly used to thwart danger and where a social actor must turn to a more subjective approach to evaluating harm (O'Malley, 2008, p. 221). However, even with this distinction in mind—a distinction which is not steadfastly upheld in the field (O'Malley, 2008)— risk remains heavily entwined with uncertainty, with the idea of having incomplete and limited knowledge about the future. This is especially the case since our knowledge about the probabilities of negative outcome occurring (i.e. our assessment of risk), or the effectiveness of prevention measures (i.e. our evaluation of risk management practices), is always open to reinterpretation by experts (Beck, 1992, 2002). In the context of rapidly changing knowledge about risk, we can never be resolutely certain about what we know to be true about risk and prevention. With risk, there is always a gamble; there is always uncertainty.

Risk, then, is the probabilistic exercise and experience of making sense of uncertainty about the future. To refer to "a risk" is to reference a potential threat produced by the unknown. In order for something to be a risk there *must* be some uncertainty. When a social actor is at-risk he is uncertain if a negative outcome will be realized—he is in a liminal space waiting to see what will occur. He may have reliable knowledge on the likelihood of adverse events actualizing and confidence that it may be successfully prevented—however, there is no guarantee. If a social actor is certain that a negative event will or will not occur, there is no risk, since risk is a probabilistic assessment of what *could be*—risk is about the future. If the *could be* has already been confirmed, then it is no longer a risk, but an inevitability, a certainty.

For example, if a social actor is certain that she has been infected with HIV and has seroconverted (i.e. HIV replication is now a permanent process in her body), she is no longer at-risk for HIV. Being at-risk for HIV means not having certainty about one's serostatus and facing the *potential* for HIV infection. The more certainty a social actor has that she will avoid a negative outcome in the future, such as an HIV infection, the less at-risk she is in the current moment. The more certain a social actor is that the prevention strategies that she has put in place to avoid HIV transmission have been effective, the lower her level of risk. Thus from the perspective of individual social actors, being at-risk for HIV is synonymous with *serostatus uncertainty*, with an inability to unquestionably confirm one's HIV serostatus as negative or positive. Being at-risk is the "subjective perception of ignorance" of one's HIV status.

The continued emphasis on uncertainty in this dissertation is crucial to understanding its original contributions to critical social science perspectives on HIV. As we will see in chapters two to four, the term "risk" is far more dominant in the scientific literature and education material on HIV. It is less often that researchers and community educators focus sustained attention on the role of uncertainty, with some important notable exceptions in progressive community literature (Wilton, 2012a). Rather than just relying on the notion of being at-risk, which is the standard practice in the HIV prevention field, operationalizing the concept of serostatus uncertainty in this dissertation represents an essential reimagining of the relationship between social actors and the threat of HIV. Risk implies that we have a clear or stable understanding of the probabilities of negative harms occurring. Thus those who are at-risk have either failed to logically compute these probabilities or completely accept experiencing negative events in their lives. Uncertainty, however, complicates this dynamic. Uncertainty implies that it is not always exactly clear what these probabilities are and that knowledge about risk is open to frequent debate and modification. Uncertainty reminds us that when it comes to risk and the prevention of harm, we have our doubts. From this perspective, being at-risk cannot be entirely reducible to an inability to logically compute available risk knowledge or to a social actor's disregard for harm. Rather, social actors may be at-risk because risk and prevention knowledge are uncertain (due to a factor that I shall soon label as *epistemic uncertainty*). This dynamic will become even more evident when I examine the scientific literature on HIV and gay men in the proceeding chapters.

Throughout this dissertation, the concepts of risk and uncertainty are used, *somewhat* interchangeably. For indeed, "risk" is the probabilistic exercise of making sense of uncertainty and to refer to "a risk" is to name a potential danger produced by uncertainty. Moreover, in a very practical sense, being "at-risk" for HIV is the same thing as experiencing "serostatus uncertainty." However, the differing connotations of these two terms add a layer of nuance to the following investigation that needs to be stressed at the onset. The concept of being at-risk is an absolutely suitable term for understanding a social actor's relationship to HIV. It is a term that I will regularly employ, particularly with the added critical dimensions offered by the governmentality and biopolitical theories discussed below. However, by frequently invoking the notion of serostatus uncertainty, I intend to actively complicate the relationship between a social actor and a threat, between gay men and HIV risk, and between knowledge production and lived experience. In so doing, I am stressing the nuanced epistemological and structural reasons behind why a social actor may find himself doubtful about his HIV status in a given moment (that is, why he is "at-risk"), despite managing uncertainty to the best of his ability. This management of risk and uncertainty is key to the following analysis. Thus I shall now take a moment to define these concepts.

Risk and Uncertainty Management

Blackwell (2007) distinguishes between three separate risk concepts that will be useful in the following analysis: risk perception, risk assessment and risk management. Risk perception refers to a subjective interpretation of risk, to the attitudes, beliefs and judgements social actors carry about particular threats. Blackwell describes risk assessment as a more formalized appraisal of the probability of harm, which involves two separate steps. First, it involves the process of estimating the severity of a potential adverse event. Second, it involves evaluating the possible benefits associated with a set of actions known to increase the probability of harm and determining the significance associated with these benefits and harms. How probable is a bad outcome likely to occur? How bad will it be? And is the positive outcome worth the potential for a negative outcome?

Both laypersons and experts perform risk assessments daily. For laypersons this process is often instinctual and unconscious, though not necessarily always. For social scientists this process may be a more formal scientific negotiation of available facts; this more scholastic appraisal of risk will be referred to as risk analysis. Scientific risk assessment—that is, risk analysis—is supposed to minimise the researcher's own risk perceptions as much as possible—though, the complete elimination of subjective opinion from scientific inquiry is impossible (Blackwell, 2007).

In this dissertation, I term the combination of Blackwell's two risk concepts—risk perception and risk assessment—as *risk reflexivity*. The term reflexivity is being used here in a different fashion than the scholarly reflexivity characteristic of critical social science first discussed in the introduction. Instead, risk reflexivity refers to a social actor's (layperson or expert) or social institution's reflexive engagement with a particular threat. It includes both the subjective interpretation of a particular harm (risk perception) and an attempt at a more systematic or objective appraisal of threatening conditions (risk assessment). Risk reflexivity is thus a combination of opinion and value judgement, along with logic and probabilistic calculation. I will return to the idea of risk reflexivity again when I examine tenets from risk society theory as well as emotions theory.

For everyday social actors, experts and social institutions, risk reflexivity remains necessary for risk management. Risk management refers to activities that are rooted in the probabilistic appraisal of adverse events occurring that are *deliberately* implemented to control the effects of uncertainty (Blackwell, 2007). It is the operationalization of risk reflexivity practices aimed at preventing or minimising the impact of a potential harm. HIV prevention, as a set of strategies used to reduce the likelihood of contracting HIV, is an example of risk management. These prevention strategies could be at the level of the individual (e.g. condom use and HIV testing) or at the community or population level (e.g. HIV prevention education and increased funding to sexual health clinics). Drug use harm reduction practices, such as offering new needles to intravenous drug users, are also an example of risk management. Once again, at the individual level, the more effective the HIV prevention strategy implemented, the more certainty a social actor has that HIV transmission will be avoided and the less at-risk he will be. Risk management implies choice, reflexivity and action. It infers agency. Risk management strategies can be evaluated as being either ineffective or effective, depending on whether a social actor's or a social institution's desired outcomes were successfully met (e.g. whether HIV transmission is avoided or incidence rates have decreased).

Uncertainty management is a parallel term that more broadly references activities that are deliberately implemented to mitigate the potential negative effects of the unknown. Risk management is simply a specific form of uncertainty management that is rooted in applying probabilistic logic. All risk management is thus a manner of uncertainty management. However, as discussed above, the term risk management implies that our understanding of the probability associated with a particular threat actualising is fairly clear. Conversely, as a conceptual tool, uncertainty management emphasises that our understanding about the probability of a threat occurring or a prevention measure working are more ambiguous or disputable. As I will argue in the coming chapters, there are a very select few examples in the HIV prevention field where the probabilities of harm associated with particular sexual behaviours and the assumed effectiveness of emerging prevention techniques are not greatly disputed. Risk management practices remain fiercely debated, contentious strategies. Uncertainty reigns.

In order to better understand the nuanced characteristics of uncertainty management, it is necessary that I break down the general concept of uncertainty into more distinct types. This will help to organise the analysis going forward. In the next section, I shall introduce these different modalities. I will continually add to these initial definitions as I go through the various scholarly traditions in the coming pages, ultimately tying all these ideas together to create an analytic framework at the end of this chapter.

The Uncertainty Triad

In this dissertation, I have broken down the general concept of uncertainty into three modalities, which I shall term the *uncertainty triad*: epistemic uncertainty, social and political uncertainty and experiential uncertainty. Each of these modalities directly corresponds to a sphere of social activity concerned with preventing or minimising the impact of a potential threat produced by the unknown: knowledge production (epistemic uncertainty), governing practices (social and political uncertainty) and everyday experience (experiential uncertainty). Taken together, these three spheres of activity make up the foundations of uncertainty management.

The first modality of uncertainty I offer is epistemic uncertainty, the unassailable reality that our knowledge is always limited and the world is never entirely intelligible to us. More specifically, this modality of uncertainty refers to the unknowns produced by knowledge production practices. With epistemic uncertainty I am referring to the limitations associated with the validity and generalizability of scientifically-based knowledge claims due to the constraints of available research tools. In medicine and public health, epistemic uncertainty "reflects limitations in the current 'state of knowledge' underlying models themselves, [and] originates from competing theories or models, is not readily quantifiable, and is manifest by subjective confusion or indecision" (Han et al., 2011, p.6). It is a product of our imperfect research models and the limitations of our medical diagnostic tools. Epistemic uncertainty has also been described in research practice as deriving from "incomplete information or incomplete knowledge of some characteristic of the system or the environment" (Oberkampf & Helton, 2005, p. 10-2). It stems from multiple sources including: insufficient experimental data, a (conflicting) range of expert opinion about necessary inputs for a given experiment, limited understandings of complex processes and the potential for shifting conditions not identified in an experiment (Oberkampf & Helton, 2005, p. 10-2).

In sum, epistemic uncertainty refers to the contradictions, researcher biases, expert disputes, technological deficiencies, knowledge gaps, blind spots, over-simplifications and potential human errors associated with our current research practices. These make it difficult to create *absolute* generalizable claims about a given risk or prevention measure. The scientific tools we have at our disposable to best understand risk (e.g. clinical trials, blood sampling methods, survey and interview techniques, public health reporting, mathematical regression models, etc.) always have the potential for fallibility (e.g. non-generalizable sampling methods, the biases of the observer, inaccurate data reporting, etc.). Thus the truthfulness of the facts we produce is always limited by these deficiencies.

One of the primary goals of knowledge production practices is to manage the overall level of epistemic uncertainty in a given field of scientific research. This remains the case in both "technico-scientific" disciplines (i.e. the hard sciences like biochemistry and virology) and the social sciences (i.e. public health and sociology) (Lupton, 1999). Obviously, any new research project hopes to minimise the epistemic limitations of its own work in order to produce stronger findings. Yet, more broadly than this, new research on an already established topic is meant to resolve the limitations of existing research and fix the errors of prior experimentation. It is meant to clarify some of the ambiguities of the existing literature and answer unresolved questions. Once there is expert consensus that the epistemic uncertainties on a particular issue have been thoroughly addressed (if not eliminated than at least reduced to insignificant levels), new research on that *specific* issue remains significantly less relevant. The epistemic limitations of current research findings serve as the justifications for additional research on the same topic. Epistemic uncertainty thus drives knowledge production practices.

I refer to the second modality of the uncertainty triad as social and political uncertainty. This modality of uncertainty refers to the multiple unknown adverse social and political consequences that are associated with a particular threat and to the governing practices that are implemented to address this threat. Once we have awareness and knowledge about a particular risk, however limited and marred by epistemic uncertainty, we must then determine how best to respond to this threat at the social level. Having scientific evidence is one thing. Deciding exactly how we should use this knowledge (or lack thereof) is another. There are myriad ways in which risk and uncertainty may be managed at the social level. I refer to these uncertainty management practices as *governing practices* in order to distinguish them from the *everyday social practices* of individual social actors. Governing practices are implemented by a variety of formal and informal institutions (i.e. by different fractions of the state and civil society) in an attempt to coordinate the social world. The main governing practices I shall explore in this dissertation include: education and communication programming, adjustments to available public services, policy reform (including legal reform), advocacy work and activism. Safer sex education in high schools, the distribution of rapid HIV testing centres in Canada, blood donation policy and activist work on the criminalisation of HIV non-disclosure, are all examples of social and political work aimed at managing HIV risk. I shall explore the specifics of these issues in the coming chapters.

I categorise the uncertainties associated with these management practices as social, because these actions are predominantly concerned with having broad social or group effects, of reorganising the social world in a way that actively combats a particular risk. These activities aim to affect social relations, altering how social actors respond to each other in everyday life, how social actors respond to different forms of expertise (i.e. medical and legal authority) and to existing social institutions (i.e. public health). The idiosyncratic needs of a singular social actor are less significant here than thinking through the broader social advantages of taking certain prevention actions.

I also refer to the uncertainties associated with these management practices as political, because ultimately questions about how best to organise society in the face of a threat are also questions about how we should govern members of society in the face of a threat. (This matter will become even clearer when I address Foucauldian governmentality theories on risk below.) There are only a set number of solutions that can be enacted at any given moment for any particular risk. This is a product of limited resources, including both human and financial capital. Determining how best to use such capital is, of course, always a political question. Furthermore, risk management choices must be made which will ultimately exclude other possibilities. This is especially the case if we wish to have an effective and coordinated response to a threat. Simultaneously implementing incompatible strategies can create incoherency that will ultimately reduce the effectiveness of any specific risk management strategy. Determining exactly which prevention strategies are the most effective and how exactly they should be implemented can be a matter of great debate, with those in positions of power (i.e. policymakers and researchers) having the greatest decision-making authority.

Moreover, every governing strategy implemented will have a diverse set of socio-political effects beyond the prevention of a threat. For example, in the coming chapters I will address numerous communication strategies and policies that are intended to raise awareness about HIV prevention issues (e.g. undetectable viral load and HIV status disclosure) or help limit the number of high risk sexual exchanges. Yet, some critical voices argue that particular framings of these risk management issues often unfairly responsibilize and blame HIV-positive persons for HIV incidence, thus reproducing HIV stigma and increasing HIV-positive persons' vulnerability to social and biological harm (see chapter four). By addressing health risks in particular ways, some risk management decisions may have unintended negative effects, opening up an unknown series of social and political risks. Thus addressing risk raises complicated ethical and political unknowns. Along with what is practical and effective, activity in this arena of uncertainty management must also contend with what is fair and just.

The last modality of the uncertainty triad I offer is experiential uncertainty. This is uncertainty management from the point of view of individual social actors who have to make practical decisions in their everyday lives to address potential threats and secure their well-being. Social actors must manage the threats produced by the unknown and consider how implementing these specific prevention measures may come to affect their social relations. This modality thus focuses on the pragmatic aspects of facing uncertainty that are not rooted in theoretical postulations of what could or should be, but on the actual lived experiences of social actors. Every social actor has some capacity for risk reflexivity, to instinctively engage with knowledge and resources about risk and prevention and to make their own risk management decisions to address the negative effects of the unknown.

The particular decisions individual social actors make may or may not correspond to the wishes of experts (i.e. researchers, activists, policy makers). Yet, these decisions are very important to these experts. Determining just how exactly social actors are responding to a particular risk and to different prevention solutions is the raw data that makes up the risk research that then affects how we come to govern in the face of a particular threat. (Indeed, it's the raw data that comes to make up this dissertation's argumentation.) Ideally, the entire purpose of producing research and governing practices to address risk is to make the experience of managing uncertainty at the everyday level more palatable. However, I will discuss numerous examples in the proceeding chapters where this is clearly not the case and where the interests of researchers, policy makers, community educators and service providers do not succinctly match with the needs of those at-risk. Hence, better understanding the nuances of experiential uncertainty will be my principal goal in the last half of this dissertation.

In summary, for analytic clarity I divide risk and uncertainty management practices into three spheres of activity: knowledge production, governing practices and everyday experience. I refer to the modalities of uncertainty most closely associated with these different spheres of activity as epistemic uncertainty, social and political uncertainty, and experiential uncertainty, respectively. I will continue to add to our understandings of these types of uncertainty and the relationship between these three domains in the following pages as I explore different schools of critical thought on risk and uncertainty. To begin this exercise, I will first draw on Lupton's informative literature review to briefly outline the parameters of risk and uncertainty research, before focusing attention on four different schools of critical scholarship.

Risk and Uncertainty Based Research

Lupton (1999) divides research on the topic of risk into two general domains: technico-scientific and social-cultural perspectives on risk. The technico-sciences Lupton describes are composed of many of the disciplines that make up biomedical and public health research such as psychology, epidemiology, health management, health promotion, social work, virology, pharmacology, etc. This research is interested in scientifically qualifying what constitutes a risk (risk assessment research), monitoring risk within a given population (risk surveillance research) and understanding the motivations behind risk-taking (risk factor research). This is done in an attempt to modify risk related behaviours through future research, programing, policy adjustments, health service delivery, or communication strategies. Public health, in particular, uses risk assessment, risk surveillance and risk factor research in order to manage the progression of disease within a given population. In chapter three, I will closely review this type of technico-scientific risk research on HIV prevention and gay men.

Debating the accuracy and applicability of available risk knowledge is the primary characteristic of risk analysis research in the techno-scientific fields:

> Debates over risk in these technico-scientific fields tend to revolve around issues of how well a risk has been identified or calculated, the level of seriousness of a risk in terms of its possible effects, how accurate is the 'science' that has been used to measure and calculate risk and how inclusive are the causal or predictive models that have been constructed to understand why risks occur and why people respond to them in certain ways (Lupton, 1999, p.18).

Once again, uncertainty is key to risk analysis, as scientists in these technico-scientific fields try to gauge the accuracy or certainty, and relatedly, the generalizability of our available knowledge about a particular threat. That is, those in the technico-scientific disciplines are interested in addressing epistemic uncertainty and determining how we should proceed given the limitations associated with what we currently know.

In contrast to technico-scientific research, Lupton describes socio-cultural perspectives on risk, or what I will refer to here as critical studies on risk and uncertainty. This is an interdisciplinary field of research in the social sciences and humanities that is interested in critically examining the production of risk knowledge, governing practices and social actors' everyday lived experiences confronting risk. It aims to understand how experts produce and respond to uncertainty through their knowledge production practices (e.g. through biomedical research and clinical trials), how such uncertainty is communicated and managed at various social sites in an attempt to govern populations (e.g. through media, community activism, state intervention and public health policy), and how social actors cope with such uncertainty in their everyday lives (e.g. through disease screening and prevention practices). In other words, this risk research is interested in better understanding the relationship between the three modalities of uncertainty introduced above: epistemic uncertainty, social and political uncertainty, and experiential uncertainty.

At its core, critical studies on risk and uncertainty understand that risk management has become an essential component of how modern institutions organise and respond to the social and natural world, and that this investment in understanding, monitoring and mitigating risk has enormous influence on the everyday lives of individual social actors. Thus this work is interested in the political implications of risk and uncertainty: "Sociological research shows that the objectivist discourse on risk [i.e. technico-scientific disciplines] covers societal power relations. The conflicts regarding the right knowledge, rationality, and values are embedded in power games and the governance of modern societies, constituted by a wide range of (organized) actors" (Zinn, 2008, p. 14).

As a field of scholarly interest, critical studies on risk and uncertainty is intimately tied to the sociology of knowledge and epistemological philosophy, since these sub-disciplines are concerned with determining how we know what we know and how we determine truth (Startup, 1982; Zinn, 2008). These scholars are interested in exposing the power relations inherent to knowledge production practices and assessing the ways in which professional expertise often lacks insight into the social and practical knowledge used by everyday social actors to manage risk and uncertainty (Zinn, 2008). Critical scholars on knowledge recognize that there is *always* a degree of uncertainty associated with scientific knowledge claims—that is, epistemic uncertainty is always present. Consequently, a line must be drawn between reasonable doubt and unreasonable doubt (Startup, 1982)—a determination of what version of the truth is justifiable given epistemic uncertainty. It is the goal of critical scholars to determine the politics inherent in determining how this boundary is established and what effect this has on those most affected by a particular threat (Startup, 1982; Epstein, 1996). Thus critical scholars are also very interested in examining epistemic uncertainty, in tracing the limitations of our knowledge and knowledge production practices about a particular risk and reflecting on how various experts manage the ambiguity and doubt associated with available scientific evidence (Adam, 2011).

Thus broadly speaking, critical studies on risk and uncertainty is interested in understanding the political implications of knowledge produced about a particular threat and the social construction of risk and uncertainty. An interest in social construction does not mean that critical scholars deny the reality of material dangers like HIV (Crimp, 2002; Hilgartner, 1992). Objects exist in the world that do pose potential threats to human beings and society regardless of whether or not we acknowledge them. However, to frame something as being a risk and to create risk management strategies, we must first be able to locate and develop understandings of possible harms and create linkages between particular harms and activities. This task cannot be entirely objective. Available knowledge, our analytic tools, our values, prejudices, emotional states, personal interests and politics will guide what harms and activities we choose to uncover and problematize (Blackwell, 2007; Lupton, 1999; Zinn, 2008). It is the task of critical theorists to make sense of the complex interplay of the social and political forces that shape how we come to know and experience potential threats to human life.

There are several critical schools of thought on risk and uncertainty that perform this work (Lupton, 1999; Taylor-Gooby & Zinn, 2006; Zinn 2008). I shall now examine four of these major areas of critical work that will be useful in the following investigation: risk society theory, cultural risk theory, governmentality and biopolitical theory, and emotion theory.

Risk Society: Self-Identity, Uncertainty and Expert Knowledge

Uncertainty about the future has always existed. However, framing this uncertainty and potential danger through the concept of risk has not. Risk is a specific way to understand uncertainty and risk management is a specific way for addressing hazards that has its roots in early industrial capitalism (Beck, 1992; Douglas, 1992; Giddens, 1999; Lupton, 1999). Since then, it has only played an ever-increasing role in the advanced capitalist era, shaping the relationships between social actors and social institutions. Understanding this relationship is one of the main premises of risk society theory.

Risk society theory is most closely associated with the work of Beck (1992, 2002; Adam & Mythen, 2002; Lupton, 1999) and Giddens (1990, 1991, 1999). Both scholars are interested in the ways in which traditions, customs and social institutions are continuously being modified in modernity, causing uncertainty about our future. Beck (1992) sees risk as a foundational force in the organisation of modern society: “Risk may be defined as the systematic way of dealing with hazards and insecurities induced and introduced by modernization itself. Risks, as opposed to older dangers, are consequences which relate to the threatening force of modernization and to its globalization of doubt” (p. 21). Beck argues that we are moving toward a risk society. The central social problematic of our era is becoming less about disparities of wealth and production (the problems of industrial capitalism), and more about the management of the risks produced by variable processes of modernization (Lupton, 1999).

In a risk society, the breakdown of older traditions, customs and social roles leads to individualization. Freed from some of the social obligations of the pre-modern period, social actors have more autonomy to create their own biographies and identities (Beck, 1992; Lupton, 1999). While individualization means more opportunities to express agency, it also includes risk, as operating outside of traditions or the norm also carries with it high levels of uncertainty about the future. Indeed, uncertainty is a key facet of risk society theory as it comes to threaten established identities and institutions. The process of individualization can be a fulfilling form of self-realization. However, it can also be unsettling, since there are no guarantees. Risk society scholars highlight how—at least for privileged members of Western society—we live in an era of opportunity and the "expansion of choice" (Giddens, 1999). As Beck puts it, "The risk society marks the dawning of a speculative age in everyday perception and thought" (1992, p.73). Nearly every aspect of our lives is open to interrogation and modification. Yet this (unevenly distributed) freedom to choose also carries with it the heavy weight of uncertainty. Dealing with such uncertainty is thus a core facet of modern life and the implementation of self-identity.

Further, while social actors have the freedom to choose and express their agency, they have also become more responsible for their risk related decisions. Beck argues that this contrasts greatly to pre-modern notions of harm and hazard, where misfortune was often positioned as a product of fate, God, or something mystical beyond the capacity of human intervention. Today we have more options available to us to shape our futures, but we live with the burden of all this choice. All our failures as individuals, groups or institutions may be rooted in an inability to effectively manage risk and adequately prepare for the unknown future.

The term reflexivity also plays an essential role in the work of risk society scholars. "The reflexivity of modern social life consists in the fact that all social practices are constantly examined and reformed in the light of incoming information about those very practices, thus constitutively altering their character" (Giddens, 1990, p.38). Reflexivity is not just about self-examination, but also about altering knowledge, self-identity, institutions and social practice. Social actors are reflexive beings who make particular risk management decisions in their everyday lives to assert agency. Social institutions, like public health, are also reflexive; they must respond to the risk-related choices of social actors in a society. As social institutions shift to respond to social actors, so too do available opportunities for social actors.

We can look at the role of gay men in Western society as a clarifying example (Giddens, 1992). Historically, social institutions (law, education, health care, etc.) problematized and prohibited homosexual behaviour, deeming it a perversion and an illness. Knowledge production practices in various scientific fields constructed the homosexual subject in order to consistently solidify the link between homosexual relations with pathology, social degradation and crime

(Conrad, & Schneider, 1980; Davidson, 2001; Foucault, 1978/1990). Eventually the scientific development of this homosexual subject position allowed men and women to actively adopt a homosexual identity as part of their individualization narratives. This act of self-identification then became the grounds for a larger political movement birthed in the civil rights momentum of the Post-WWII era (Stein, 2012).

Thus throughout the 20th century, gay men who were open with their sexual identity within a rabidly hostile homophobic society, took socio-political risks in order to affirm agency, build identity, seek intimate relations and establish community. Over time, social institutions began to reflexively respond to the social practices of gay men, by modifying policies to create a society more favourable to the needs of this group (e.g. anti-discrimination laws, same sex marriage, etc.). Knowledge production practices also shifted to produce more favourable analysis of the role of homosexual persons in society. In so doing, this has shaped how gay men navigate contemporary institutions, establish self-identity, seek intimacy and establish community. Everyday social practices thus reflexively adjust to new knowledge about those very social practices and new governing practices.

Reflexivity about risk often requires social actors to refer to the knowledge produced by professionals. Knowledge, however, is always changing and being debated, especially by experts. “We are aboard in a world which is thoroughly constituted through reflexively applied knowledge, but where at the same time we can never be sure that any given element of that knowledge will not be revised” (Gidden, 1990, p.39). We can never be absolutely certain that existing scientific knowledge about a particular threat might not change radically by tomorrow. For example, a particular food may be associated with a health benefit for numerous years, only to be classified as a potential threat to health after new research exposes its negative effects on the human body. Thus modern life is characterised by a simultaneous dependence and ambivalence towards expert systems.

The implications of the uncertainty triad I introduced above are clearly evident in risk society theory. Emerging knowledge about risk always threatens what we currently believe to be true. Thus our current state of knowledge is always plagued by a degree of epistemic uncertainty, by a truthfulness that has a limited shelf life. Social institutions must respond to emerging knowledge and its associated epistemic uncertainty in an effective manner in order to address social and political uncertainty. Governing practices must somehow adapt to both the shifting nature of knowledge and to the ever-evolving social practices of social actors. And social actors, provided with more flexibility in their decision-making, may become somewhat burdened by choice as they implement their self-identity in a social order less defined by traditional boundaries. The ultimate effects of these personal choices produce experiential uncertainty, especially as knowledge and social institutions continually shift in a way that may or may not correspond to the individualisation choices made by a social actor.

Thus risk society theory offers us a deeper theoretical understanding of the relationships between the uncertainty triad, particularly through the concept of reflexivity. Indeed, the conceptualisation of reflexivity offered by Giddens neatly extends upon the earlier definition of risk reflexivity provided in this chapter. I initially framed risk reflexivity as a composite of risk perception and risk assessment practices taken on by a social actor or group of social actors (i.e. either lay persons or experts) To Giddens, however, reflexivity characterises something even broader and more significant. In risk society theory, reflexivity refers to the intricate symbiotic relationship between knowledge production practices, social institutions and social actors—the consistent give and take these different spheres have on each other given their highly mutual qualities.

Expert knowledge producers must contend with the epistemic uncertainty of their work as well as the shifting needs of social institutions and social actors who will eventually make use of this knowledge. It is a challenge to produce accurate knowledge about the world when governing practices and social practices are rapidly changing. Similarly, social institutions must address the social and political uncertainties associated with their governing practices in the face of inconsistent, limited and changing knowledge claims (i.e. epistemic uncertainty). Moreover, governing practices must be able to effectively respond to the diversity of changing forms of social practice and identity formation occurring in a society at a given movement. Meanwhile, individual social actors must implement their self-identity in the context of uncertain and shifting knowledge claims and changing institutional structures. Each sphere of uncertainty management activities is thus intimately affected by the shifting uncertainties produced by the other two spheres. Epistemic uncertainty affects social and political uncertainty and vice versa. Social and political uncertainty affects experiential uncertainty and vice versa. Experiential uncertainty affects epistemic uncertainty and vice versa.

All three spheres of uncertainty management activity—knowledge production, governing practices and everyday experience—are heavily reliant on the outcomes of the other two spheres. Consequently, each realm of activity is greatly affected by the uncertainties of the other two spheres, while simultaneously producing new uncertainties that the other domains must contend with. Thus risk reflexivity refers to the perception (beliefs, values, judgments and emotion states) and assessment (systematic appraisal of risk) of particular threats by social actors and social group. It is also a *symbiotic process* whereby the uncertainties generated by the risk reflexivity practices of some social actors and social groups *continuously* affect the risk reflexvity practices of other social actors and social groups.

In a risk society, this process is ongoing for any particular threat. This will be the case until there is some sense of coherence and mutual agreement reached between the different spheres of uncertainty management. It is possible to reach a *stabilising point* on a particular risk issue, an idealised state of uncertainty management that exists when no one particular sphere of uncertainty management activity is changing too significantly in relation to the other two. Thus the stabilising point is a term I offer in this dissertation to refer to a moment when the uncertainties associated with a particular risk are finally minimised to a degree that is more or less socially accepted. *Conditions of uncertainty* refer to the converse of the stabilising point. It references those moments when a stabilising point has not yet been reached, when the various uncertainty management practices associated with a particular social problem are generating additional or more convoluted forms of epistemic, social and political and experiential uncertainties than they are reducing or simplifying. These are social conditions where there is a significant lack of expert consensus, a fundamental disagreement on how to approach a risk related problem. Consequently, these conditions produce great confusion over how to adapt everyday social practices to prevent harm.

The stabilising point is reached when three things occur. First, a stabilising point is achieved when experts have a fairly confident level of understanding on an issue and there is predominantly consensus in a field (i.e. epistemic uncertainty has been, not eradicated, but minimised). Second, a stabilising point is reached when current governing practices effectively respond to this knowledge and to the current social landscape more or less harmoniously (i.e. social and political uncertainties have been minimised). And third, this point is actualised when social actors are relatively satisfied with the current state of knowledge and the structure of social institutions allows for individuals to manage a particular risk in their everyday lives with relative ease (i.e. experiential uncertainty has been minimised). For example, in the industrialised world there has been a general state of consensus between our knowledge, prevention services, experiences and incidence rates associated with the threat of polio for decades. Vaccine programs have basically rendered polio a non-threatening entity in countries like Canada. However, more recently, growing anti-vaccine movements have sought to trouble this consensus (Kata, 2012). Thus in a risk society, all stabilising points may be tentative.

In terms of health risk, a stabilising point is not necessarily the same as eradicating the threat of a particular disease. It is not an epidemiological term. Rather, it is a sociological term describing the interaction of knowledge production, governing practices and everyday experience. For example, syphilis is another health issue that has arguably reached a stabilising point (at least until more recently). Though a major threat to population health for centuries, antibiotics have turned syphilis into a completely curable ailment. Unlike polio and other ailments like Hepatitis B (for which there are effective vaccines), however, what has made syphilis a stabilised issue is not a lack of continued incidence. In fact, in recent years we have seen increases in syphilis rates among gay men and other MSM (Leblanc, 2013; Public Health Agency of Canada, 2013). However, in Canada, experts generally agree on how to screen, treat and prevent syphilis. Community agencies and health care services are well equipped to deal with syphilis. For example, when syphilis rates increased in Ontario, the AIDS Committee of Toronto very quickly and effectively responded with a prevention education campaign and outreach work to target those most at-risk (AIDS Committee of Toronto, 2011). And while some social actors may not effectively prevent syphilis, the experience of treating the illness remains relatively straightforward and the management of syphilis risk is not an overwhelming psychological burden on gay men (though, nobody wants to deal with an infection).

Of course, we can always consider a world where syphilis will fail to respond to available antibiotic treatments. Yet, taken as a whole, there has been a general consensus on how to manage the threat of syphilis and we do not see a tremendous replication of epistemic and social and political uncertainties in discussions on syphilis. For example, experts do not continually debate how syphilis is transmitted. Community agencies did not try to deny epidemiological evidence that syphilis was on the rise, but responded to it quickly. And nobody was blaming either HIV-negative or HIV-positive men more for the recent syphilis outbreak.

However, this stabilising point is currently being threatened by HIV risk management practices. There has been much debate in the HIV prevention field over the severity of syphilis, including its role in facilitating HIV transmission and its ability to advance quickly in HIV-positive persons with suppressed immune systems (see chapter two for more details on STIs and HIV risk) (Public Health Agency of Canada, 2013). Emerging research also seems to indicate that HIV-negative men on PrEP are also significantly more likely to become infected with syphilis because they are more likely to abandon condoms (Kojima, Davey, & Klausner, 2016). Once again, in a risk society, a stabilising point may only be tentative.

But by highlighting this example of syphilis, my goal here is to make it very clear that a stabilising point is not the same as an eradicated epidemic. Rather, it is a term used to convey an epistemological and socio-political phenomenon where there is general (though obviously never complete) expert consensus and a limited propagation of epistemic and social and political uncertainties. New research isn't being produced monthly that fundamentally challenges what we know to be true about syphilis transmission and prevention. However, any health issue so closely attached to HIV risk management—where uncertainty and debate is the standard—is bound to unravel soon enough. In the HIV prevention field, uncertainty is the norm, and because of this, syphilis' stabilising point is also under attack (though further discussions on this issue could well make up another dissertation). Indeed, part of what I shall argue in the upcoming review of HIV prevention science literature and with the analysis of the interview data later on, is that the HIV prevention field has not reached a stabilising point in its third decade. Consequently, the uncertainties generated by different spheres of uncertainty management greatly affect the practices in the other two domains. Of particular importance in this investigation will be examining how such uncertainty ends up impacting the agency and well-being of young HIV-negative gay men.

To summarise, both Beck and Giddens see risk and uncertainty as a fundamental component of modern society and self-identity formation. Individualization and reflexivity play a key role in establishing self-identity and how institutions respond to changing social practices. In this way, risk can be a productive and positive force. However, since knowledge is always changing, and social practices continue to shift at a rapid pace, the risk society brings with it an increasing sense of uncertainty about the future that must be managed by both social institutions and individual social actors.

Knowledge producers must produce knowledge of significance to social institutions and social actors. Social institutions must produce governing practices that respond to available knowledge and appeal (to some capacity) to the needs of social actors. Social actors must make choices given available knowledge and the restrictions imposed by current governing practices. From a risk society perspective, critical analysis entails examining the relationships between the three spheres of uncertainty management and how the uncertainties in one domain affect the practices of the other. Indeed, until a stabilising point has been achieved, the relationship between these three areas of activity may be highly contentious. It is the task of a critical scholar to thus describe this convoluted dynamic. Moreover, critical analysis can entail examining how knowledge production practices and social institutions are reflexively responding, or failing to respond, to the risk management choices of individual social actors who are burdened by choice and an uncertain future.

Cultural risk theory offers very congruent reflections to risk society theory. However, it adds additional emphasis on morality, blame and community that will add significantly to our analysis in the proceeding chapters. I shall now examine the tenets of this scholarly tradition.

Risk, Uncertainty and Culture: Morality and Blame in the Community

Another critical method to risk analysis is the cultural approach that is most closely associated with the anthropological work of Douglas (1992). Similar to Beck and Giddens, Douglas sees risk as playing a fundamental role in the shaping of self-identity and selfhood. Douglas argues that risk has come to replace ideas of sin and taboo in modern Western society. Historically, notions of sin, purity and taboo, normally rooted in religious or mystical traditions, helped to protect a community from outside threats by positioning certain activities or people as amoral, harmful, deviant and unclean. These activities and persons were dangerous to the integrity of the community and were to be avoided, condemned or exiled. Instead of a reliance on religious or supernatural notions of what may cause harm to a community, in contemporary Western societies we now rely more on ideas of risk rooted in "objective" science. However, the social function remains the same. Risk knowledge helps us to make sense of outside threats and raises questions about who is responsible for such threats—both in terms of who is responsible for controlling the threat (who has the legitimate professional expertise and political authority to govern) and who is culpable for introducing the threat to the community (whose behaviour needs to be problematized, observed and controlled). Those individuals who are characterised as threatening to a community's function, as posing a risk, are positioned as others. They are stigmatised and excluded from the community in some capacity as they address their potential for posing harm.

Thus to Douglas, risk is *always* about morality, blame and responsibility: "Knowledge always lacks. Ambiguity always lurks. If you want to cast blame, there are always loopholes for reading the evidence right" (1992, p. 9). In so far as there is a degree of epistemic uncertainty about a particular harm and the benefits of available prevention strategies, there is flexibility in how we may cast blame. Referring back to the sociology of knowledge and uncertainty, there is always a line to be drawn between reasonable and unreasonable doubt in our existing evidence, between how much uncertainty about a particular threat is tolerable in a given context. Douglas reminds us that this process is deeply political and operates to establish moral boundaries and social hierarchies in a community (i.e. between expert and layperson, outstanding citizen and social deviant). Indeed, to Douglas, there is no reference to risk that does not imply a moral position. To frame a matter as one of risk always implies that this risk can and should be managed. While discussions on risk, either in popular media or scientific discourse, often present risk knowledge as being neutral—that is, as being grounded in clear scientific evidence that favours no particular action or group—to Douglas, all risk analysis is motivated by determining the intrinsically political question of what constitutes an acceptable level of risk and risk-taking, and what constitutes acceptable strategies of risk management (p. 44). Failure to effectively manage risk renders one blame-worthy, culpable for his own misfortune and possibly culpable for bringing that misfortune to his community.

Further, Douglas argues that while risk-taking tends to be problematized in certain scientific fields like epidemiology—that is, the belief that if (excessive) risk-taking increases the chances of serious harm occurring then those who actively engage in high levels of risk-taking must be ill informed (or mentally ill or sociopaths)—it is always necessary that we contextualise risk-taking within particular community locations or cultures. Speaking specifically of risk-taking in the context of the AIDS crisis affecting gay men in the early 1980s, Douglas argues that:

> The self is risk-taking or risk-averse according to a predictable pattern of dealings between the person and others in the community. Both emerge, the community and the person's self, as ready for particular risks or as averse to them, in the course of their interaction. The person who never thought himself as a risk-taker, in the unfolding of the drama of his personal life, and under the threat of the community's censure, finds himself declaring a commitment to high risk.... The relevant behaviour for identifying this process is in mutual scanning, judging, reproving and excusing, blaming and retaliating against blame (p.102).

At the beginning of the AIDS epidemic, very little was known about how the disease was contracted or how it could be successfully prevented. Returning back to Epstein (1996), initially there was very little certainty that AIDS was actually caused by a virus, as it took time to establish the scientific link between HIV infection and AIDS (see chapter two for more details). Moreover, it took time to establish the infectiousness of the virus once HIV was discovered as the cause of AIDS. During this period of panic, confusion and doubt—a period of great uncertainty—*all* gay men were positioned as being equally at-risk and they were—along with homosexuality as a sexual practice and identity category—considered to be a threat to society as a whole (Flowers, 2001). Since scientists could not officially confirm the cause of AIDS, there was no way to verify which prevention strategies could possibly work, and thus, from a public health perspective, *all* forms of homosexual sex between men was considered to be very dangerous. All gay men—along with intravenous drug users, sex workers, and other members of LGBTQ communities—became highly stigmatised and became threatening members to the "general population." AIDS became almost wholly associated with gay men as the original name given to AIDS was GRID, Gay Related Immune Deficiency and the epidemic was often referred to as the "gay plague" (Watney, 1997).

Conservative political leaders and journalists often positioned gay men dying from AIDS as amoral, over-sexed deviants who deserved their suffering, especially for potentially introducing a dangerous threat to the general population comprised of morally respectable heterosexuals (Treichler, 1999). AIDS was considered to be a result of society not effectively managing the risk of homosexuality, promiscuity and perversion, of being too quick to do away with hetero-patriarchal traditions. Referring back to risk society theory, social institutions were becoming too lenient with the development of burgeoning homosexual communities and this generated a significant health risk that, though confined to particular social groups, threatened all of society. In short, the uncertainties faced at the beginning of the AIDS crises were interpreted through an extremely homophobic lens. Following the long-standing link between homosexuality, deviance and pathology, *all* gay men, regardless of the specific nature of their sexual activities, were seen as great threats to themselves and to society as a whole.

From this context of great epistemic and social and political uncertainty, it seemed improbable that “rationally-minded” men interested in staying alive would continue to put themselves at-risk for such a devastating and highly stigmatised disease. At this particular historical moment, putting oneself at-risk simply meant having homosexual sex of *any* kind, even with condoms, since it was unclear what constituted effective prevention (Flowers, 2001). Thus all forms of homosexual sex were considered to be a form of risk-taking, all sexually active gay men were risk takers, and all sexually active gay men were, from a conservative public health perspective, immoral or irresponsible.

However, to Douglas, the pervasive belief that people will always be automatically risk averse and intolerant to uncertainty—a belief rooted in neo-classical economic theories of reasoned action that generally underpin theoretical models about health risk—does not capture the complexity of social life. Instead, she argues that social actors will hold different attitudes about risks and may be risk averse or tolerant depending on their conception of self and community. Douglas is not referring to the self in the psychological sense of the term, but more in the tradition of symbolic interactionist theory where the self is formed through its interactions with other members of the community. The self—and by extension, self-identity—is the product of social experience, the learning gained through complex and unique forms of social interaction and the comparisons made to other social actors in a given milieu. Thus to understand the risk management choices of an individual social actor, we must look to the community where the individual is positioned to see how shared cultural preferences shape the attitudes and beliefs towards specific risks, making certain risks excusable, necessary or welcome. In short, communities shape tolerances to risk.

Each community within a broader society will relate to a particular risk differently based on different sets of ethics, morals and principles of justice. Different social groups have different understandings of what constitutes reasonable doubt and moral behaviour. Each community will hold different core values—those features of social life that become defining characteristics of the community and of members within that community. Each community will also hold different levels of trust toward expert systems that produce knowledge about risk. Members of a particular community may or may not be willing to accept what has been deemed a risk and effective risk management by experts if there have historically been contentious relations between these two groups—which was indeed the case with gay men and public health authority during the beginning of the AIDS crises.

Thus forms of risk management that might appear unconscionable to one fraction of society because of their "high risk" potential, might not actually be so problematic, or might not be considered to be "high risk" within a different cultural context with different values. It is not simply a matter of individual choice that shapes risk aversion or risk tolerance, but a matter of cultural preference and an understanding of the self that is shaped through community interactions. For example, historically, it has been argued that sex and promiscuity have been core facets of gay male identity, community formation and political mobilization (Crimp, 2002). However, AIDS turned homosexual sex into a major health risk. Public health and biomedical experts wished to manage this risk through the reduction of homosexual sex acts (i.e. encouraging less partners, threatening to close public sex venues like bathhouses). (As we will see in chapter three, biomedical experts' desire to manage the epidemic by encouraging the reduction of casual homosexual sex acts persists.) However, fundamentally, such risk management strategies were a direct threat to gay self-identity, community and politics rooted in sexual exploration. Furthermore, after decades of being actively oppressed by biomedicine, public health, psychiatry and the law, many gay men were highly sceptical of the expert knowledge being produced about HIV/AIDS, unsure of what sexual practices constituted a genuine risk. Thus, even though an individual gay man may have been risk averse and may have wanted to avoid dying from AIDS, his willingness to have sex (and thus to be a risk taker) must be situated within this broader community context. Certainly, an individual preference or desire for sex plays a role. However, this preference was also being mediated by larger cultural forces that linked sexual risk-taking with a resistance to systemic homophobia perpetuated by the very expert systems seeking to manage risk (control homosexuality) in the face of AIDS (Crimp, 2002; Dean, 2009).

Importantly, Douglas reminds us that preferences are not shared equally within any given group. Not necessarily every member of the gay community viewed sex as a necessary political act and some were highly critical of men who continued to be promiscuous (Flowers, 2001). Even at the level of community, there exist differences in the prioritization of values, different understandings of what constitutes moral or just behaviour. Not every gay man will view the politics of sexuality in the same way and will thus interpret the risks associated with various sex acts differently. This can create tension and fractions, as well as opportunities for social cohesion among those members in a community who share similar preferences and methods of risk management. These intra-group tensions are important to consider. Assuming that a social actor shares the same values as everyone else in their community—that is, assuming that all gay men are automatically risk tolerant—masks differences in opinion and experience within a group, thus erasing how power and privilege operate within a given milieu. As Douglas warns us, we should "be careful not to idealize the community. It does not always deal kindly with its members" (1992, p.104).

For this very reason, it is important that researchers analysing risk issues pay very close attention to which community voices they are predominantly drawing on in their work. If a researcher focuses too exclusively on the narratives of a select fraction of community members, such as those who are comfortable taking higher risks, this can create a very skewed perception of how a community more generally relates to a particular threat. In other words, there must be diversity in our samples, a range of voices who we call on to invoke the notion of "community." In chapter four, I will return to address this theme more closely. Thinking about community and how to attract voices less heard in the field of HIV prevention science is an essential component to the forthcoming data collection process. It marks one of the main original contributions of this dissertation.

Another important element that may be situated under the cultural dimensions of risk includes a consideration of gender. Risk is undoubtedly a gendered phenomenon (Lupton, 1999). Risk management is often characterised as a form of rational calculation and control (traditionally considered to be masculine traits) and the suppression of emotion and intuition (traditionally considered to be feminine traits)—I will complicate this fallacious distinction below. However, as a result of this belief, effective risk management has historically been more closely associated with men, thus problematically granting men more decision-making power. Men are also considered to be more likely to take risks and be more tolerant to risk compared to women (Lupton, 1999). Men are also commonly considered more likely to pose a risk to others, while women are more likely to be vulnerable to risks (and thus to men).

However problematic these various cultural beliefs may be, there is no denying that contemporary ideas of masculinity have been thoroughly shaped by ideas of risk-taking and effective risk management. Returning back to Douglas, how we interpret a social actor's decision to take or avoid a risk is not based on neutral, value-free knowledge, but is guided by underlying cultural assumptions and moral systems. In this case, risk-taking among men may often be seen as more excusable (at least in comparison to similar activities taken by women). Risk-taking can be considered to be an essential aspect of masculine self-expression and, at its most severe, a social expectation. In the context of gay men and HIV risk, even if we moralise sexual risk-taking negatively, ironically, as men, we expect these social actors to take some sexual risks to establish their masculinity (Adam, 2005). Culturally, then, there exists an implacable contradiction between the social expectation to take some risks to affirm gay self-identity and community with the social expectation to resolutely avoid all risk to protect population health. This contradiction is arguably a core characteristic of HIV prevention politics (Flowers, 2001; Warner, 1999). This dynamic will become more clear when I examine research and community education examples in chapters three and four and when I analyse the interview data in the second half of this dissertation.

Like risk society theory, Douglas' work covers the three main domains of uncertainty management that I have been discussing throughout this chapter: knowledge production practices, governing practices and everyday experience. And also similar to risk society theory, her work adds nuances to our understanding of how the uncertainties associated with each of these domains affect the other. In particular, Douglas emphasises how the relationship between epistemic uncertainty and experiential uncertainty is a moral one. In so far as our existing knowledge lacks, or can be interpreted differently, there is room to blame individual social actors for not responding correctly to a threat. Epistemic and experiential uncertainties also have social and political effects by establishing social hierarchies. This occurs not just between experts and laypersons (e.g. between doctors and patients), but also between different members of the same community, some of whom may be greater risk takers and thus framed as threatening to the community's integrity. Epistemic uncertainty thus provides the grounds for othering and stigmatising certain social actors.

Furthermore, how individual social actors come to understand their position within a given community comes to play a role in how they moralise a particular set of risks and establish a sense of self (or in risk society parlance, how they come to establish self-identity). A social actor's community location plays a role in how he interprets epistemic uncertainty and whether or not he chooses to adopt behaviour that is in alignment with expert opinion. I will return to investigate this dynamic more closely when I explore the topic of undetectable viral load in chapters three and four. This prevention topic has been greatly affected by epistemic uncertainty and consequently there have been vastly different opinions on this issue among different fractions of the gay male community. The epistemic uncertainty associated with undetectable viral load has played a monumental role in generating political divides between HIV-positive men and HIV-negative men (particularly those HIV-negative men who will not have sex with HIV-positive men). It has played a major contributing role to the continued stigmatisation of HIV-positive persons and to the criminalisation of HIV-positive persons for serostatus non-disclosure.

The main thrust of Douglas' work is that insofar as epistemic uncertainty exists for a particular risk—insofar as we have failed to achieve a stabilising point—there will be great debate on how members of society should conduct themselves. Epistemic uncertainty is often harnessed politically to establish social hierarchies and moralise the behaviour of certain social actors and communities more negatively. The political implications of knowledge and its ability to govern social actors is also one of the main thematic cornerstones of Foucauldian theory. This is the next branch of critical work that I shall explore.

Risk, Uncertainty and Public Health: Governmentality and Biopolitics

The work of Foucault has inspired another realm of critical risk analysis. Foucault never addressed the issue of risk or uncertainty with much specificity. However, his corpus leaves us with multiple analytical tools that describe the relationship between knowledge, power and subjectivity, which are ultimately useful for investigating risk (Lupton, 1999). For this reason, Foucauldian theory has become a staple in critical studies on health and illness, including critical health promotion studies and critical public health (Petersen & Lupton, 1996; Petersen & Wilkinson, 2007).

Governmentality is one concept frequently employed to understand risk management in the neoliberal context. Foucault (1991) describes governmentality as a complex form of power that targets the population, draws on political economy as its main knowledge source and is invested in security. Critical interest in governmentality:

> Addresses how society's pressing problems, expert authorities, explanations, and technologies are organised in relation to particular kinds of action/policy orientations, problem-solution frameworks, subjectivities, and activities. Governmentality also explores how individuals are privileged as automatous self-regulating agents or are marginalized, disciplined, or subordinated as invisible or dangerous (Nadesan, 2008, p.1).

Neoliberalism, our current political-economic order, is considered to be a form of governmentality, a general orientation to governing society that is rooted in neoclassical notions of individual accountability, rational calculation and self-regulating markets (Steger & Roy, 2010).

Within neoliberal governmentality, risk plays a fundamental role in how we make sense of uncertainty, socio-political problems, knowledge and expertise, policy issues and the regulation of subjects (Steger & Roy, 2010). Following Foucault, Lupton states that "risk may be understood as a governmental strategy or regulatory power by which populations and individuals are monitored and managed through the goals of neo-liberalism" (1999, p.87). Neoliberal governmentality strategies include both direct, coercive tactics as well as indirect strategies that rely on social actors complying voluntarily, and even unconsciously, with the interests of the state. Risk is one of these indirect strategies. The objective of labelling something a risk is to alter people's conduct in relation to a potential harm, a process that is known in governmentality studies as the "conduct of conduct" (Wilkinson, 2010, p.54). Once someone considers a situation to pose a risk, she may actively avoid it without needing much more prompt. HIV prevention is a prime example of this dynamic. By framing certain sexual activities as risky acts, social actors are encouraged to adopt risk management strategies that will reduce the potential for infection. I will examine the specifics of these HIV risk management practices in the next chapter.

In neoliberal societies, framing matters through risk has become a dominant way to govern potential harms at the population level. Social actors then adopt or resist adopting proposed risk management strategies in compliance with or resistance to the state. However, while individual social actors may have more freedom to choose within the risk society—they are autonomous agents carving out their own biographies—this freedom is also being heavily monitored and disciplined through variable state institutions like public health, education and the criminal justice system (Mykhalovskiy, Betteridge, & McLay, 2010; Rose, 2007). Subjects are governed, regulated, penalised and criminalised for their risk management choices. For example, HIV-positive persons have a variety of risk management approaches that they can implement to avoid having their sexual partners also becoming infected with the virus. However, under certain circumstances, an HIV-positive person's choice not to disclose his or her HIV status—that is, to communicate to the HIV-negative partner that the sexual encounter is one that poses a risk—can result in criminal charges and prosecution (Mykhalovskiy et al., 2010). (Refer to chapter two for more details.)

It has been argued that within neoliberal society, health and illness issues are always framed as risk management issues (Gabe, 1995; Petersen, 1997; Petersen & Lupton, 1996; Petersen & Wilkinson, 2007; Wilkinson, 2010). Public health performs risk surveillance and implements governing practices (i.e. research programs, funding allocations, service development, communication and education strategies, media outreach, etc.) to help minimise the spread of heath risks in the population. At the individual level, this results in self-regulation, in the adoption of risk management strategies by social actors, which will minimise their risk for illness (Petersen, 1997; Petersen & Lupton, 1996). This form of self-regulation is premised on the health belief model, arguably the dominant approach underlying much public health communication. The health belief model argues that if a person perceives herself to be at a plausible risk for a serious harm then she will take preventive action to reduce the risk if she perceives available preventive actions to be effective (Bloor, 1995a) As a risk management model, it assumes that most social actors are risk averse. Theories of situated rationality extend upon this frame, recognizing that a social actor's perception of being at-risk and his perception of the effectiveness and necessity of available prevention strategies will depend on his specific social context (Bloor, 1995a).

Within neoliberal society, it has been argued that this heavy emphasis on health risk has turned every social actor into a pre-patient, to someone at-risk (Petersen, 1997). Terms range in the literature from potential sick role (in opposition to Parson's sick role) to the pre-symptomatically ill (Crawford, 1980). In this context, the precise distinction between healthy and unhealthy dissolves, since nearly everyone is at-risk for some impending health threat. We remain perpetually uncertain about our health status and consequently we are expected to continually monitor and manage our health status—especially if our health status poses a threat to others (Petersen & Lupton, 1996).

Thus under neoliberal governance social actors are frequently turned into *at-risk subjects*, into individuals who are researched and governed vis-à-vis their association to a particular set of biomedical uncertainties and to the probability of becoming ill. Said actors, in turn, are meant to understand themselves and self-govern in relation to biomedical uncertainties. Being at-risk is a perpetual ontological state in a neoliberal society and managing risk to avoid the actualization of illness is a key feature of neoliberal subjectivity and middle-class self-identity (Crawford, 1994). In line with neoliberal market ideology, at-risk subjects are asked to consider their health and bodies as an entrepreneurial project, to control their "at-riskness" and invest in their bodily vitality (Petersen & Lupton, 1996). Crawford (1980, 1994) defines this process as healthism, as a preoccupation with health as the primary definition of well-being, with the management of health risks as the principal way to assert and control self-identity in an otherwise uncertain geo-political world order. Under this model, to become ill represents not just a failure to manage health risk, but is, fundamentally, a failure of self, an inability to sustain a healthy self-identity.

Though every social actor is an at-risk subject in some capacity for some potential health threat, different groups of people are considered to be more or less at-risk for particular health hazards. Similarly, specific health hazards are moralised and politicised differently depending on available risk management strategies. For instance, everyone is at risk for cancer and cardiovascular illness. However, those who are obese and/or who smoke cigarettes are considered to be more at-risk. They are also often considered more blame-worthy for a potential illness since they did not take clear preventative action—that is, adopt a healthier diet, exercise or quit smoking.

In neoliberal society, effective risk management is a moral imperative and thus recognizing one's "at-riskness" is an ethical necessity. As Geary (2007) argues, "the ethical practices of AIDS prevention [*sic*] are first-and-foremost practices of self-confrontation in which one is to acknowledge oneself as a person at-risk" (p.681). Failure to effectively manage risk not only endangers the health of the individual at-risk subject, but it also places a burden on health systems that have (as a result of neoliberal economic policies that shrink the welfare state) limited resources. If there is a clear understanding of how an illness may be prevented or its effects minimised, then there is a social expectation that an at-risk subject will implement these risk management strategies. This is especially true for infectious diseases, since how one manages risk at the individual level can affect the spread of the disease to other members of society. Furthermore, infectious disease has always been extremely stigmatised, both because of the generalised fear of contagion, but also because of its historical association with subordinated members of society who have had higher levels of prevalence and morbidity from infection (mostly due to inferior sanitation and nutrition). Infectious diseases have also been closely associated with deviant and immoral members of society including beggars, vagrants, prostitutes and homosexuals (Crawford, 2007). While our understandings of the social causes of infectious disease have increased in recent decades, arguably the stigma associated with contagion and those at-risk continues to frame how we moralise and make sense of new risks (Triechler, 1999).

Under neoliberalism, public health strategies to manage risk may also be classified as a biopolitical strategy. Foucault (1978/1990) describes biopower or biopolitics as a form of power invested in the life of the population and thus the health of certain members of the population—those bodies deemed the most valuable to the body politic. Whereas sovereign direct power operates by being able to take life (and freedom), biopower operates by fostering some lives within a population, while ignoring others to the point of marginalization, vulnerability and death. Biopower encourages the adoption of health maintenance practices by individual social actors in order to minimise health risks to the population. "As a kind of power that concerns itself with representing, explaining, and regulating the life forces of populations, biopolitical forces adapted to neoliberal ends seek to minimise societal risk and maximize individual well-being through scientific engineering and individual technologies of the self" (Nadesan, 2008, p. 3). Thus, at its core, biopolitics refers to the implementation of governing practices that are designed to foster the health of the population by encouraging certain social actors to adopt particular risk management strategies (i.e. technologies of the self). Different biopolitical agendas refer to different opinions on what exact governing practices should be implemented to foster the health of the population, which also means determining what social groups and social practices are deserving of our attention and resources.

From a biopolitical perspective, to frame a particular population as being at-risk has several implications. Following Douglas, those at-risk may be blamed for threatening the "general population" and those who pose risks to society may be tightly monitored and disciplined, such as in the case of the criminalisation of HIV-positive status non-disclosure.

Foucauldian health theorists also have a strong interest in examining the ways in which public health and epidemiological surveillance regulate social actors to adhere to social norms (Petersen & Lupton, 1996; Petersen & Wilkinson, 2007). In this critical research, risk surveillance and biomedicine are often framed in a somewhat negative light, with risk experts positioned as having extreme levels of control over knowledge production and social regulation.

However, we must also examine the productive biopolitical elements of risk. First, framing information through risk can be a clear and effective way to communicate complicated knowledge about health and illness. Second, while risk might cause modes of self-regulation, some of these regulating strategies are clearly beneficial to the social actor who might have a longer or better life after adopting healthier practices. Third, even though some members of society may adopt expert risk information uncritically, we should not assume that social actors are passive or uncritical and that they will just self-regulate unwillingly. Indeed, a major point of risk society theory is that social actors have reflexivity and a fundamental capacity for agency. Fourth, and quite importantly, highlighting a group as being at-risk means that this group may be recognized by the state as being vulnerable to potential harms and consequently strategies can be developed to respond to this group's particular needs. As discussed in the introduction to this dissertation, not having bisexuals officially considered to be a key risk group made it difficult to justify funding research for this community (Namaste et al., 2012). When groups of people are not framed as being at-risk they are more easily erased from research, policy and advocacy work. Thus, at the biopolitical level, being at-risk becomes a way to make citizenship claims, to advocate for particular governing practices that would address the needs of those most affected by an illness.

This is noted in the work of Rose, a seminal biopolitical theorist. To Rose (2005, 2007), our ideas of citizenship are increasingly being expressed in biological terms and our ability to manage health risks. He refers to this as biological citizenship, our duty as citizens to manage biological risks in the interest of the state and the duty of the state to care for the biology of its citizens. HIV/AIDS activists advocating for better treatments and services and the eventual development of the state-sponsored HIV prevention field to respond to these needs is an example of biological citizenship in action (Epstein, 1996; Rayside & Lindquist, 1992; Silversides, 2003). While not wishing to oversimplify the concept of biological citizenship and the unique richness of this literature, in this dissertation I employ this term in a synonymous fashion as the at-risk subject. The biological citizen is a social actor who, in viewing himself as a somatic subject, recognizes potential threats to his biological integrity and thus demands that the state and civil society take active measures to address these threats. Thus for our purposes here, biological citizenship is primarily about the at-risk social actor making citizenships claims regarding his health and at-risk status and how the state responds to such claims.

In his work, Rose examines the complex ways that we are governed by the proliferation of knowledge and related epistemic uncertainty. He further considers such knowledge in relation to our bodies and how we increasingly come to understand ourselves and our roles in society in biological or somatic terms. As technology and medicine improves and we learn more about health and illness at the molecular level (for example, through advancements in testing procedures), new ethical questions and biopolitical debates emerge. As we produce new knowledge about the human body and are able to measure and examine it more closely at the microscopic level, we are confronted with more choice on how to manage potential risks to our health. For example, genetic screening can allow us to determine the likelihood of a woman developing breast or ovarian cancer, which raises challenging questions for the female patient. If the risk levels are deemed high, preventive actions may be taken such as having a mastectomy and/or a hysterectomy (Kosenko, Binder, & Hurley, 2016). Again, the issue is one of uncertainty. One does not know with certainty that a threat will be actualised and consequently one has to make a decision now based on limited available knowledge. The more we know about the human body, the more we are exposed to uncertainties about its longevity and vitality and the more ethical questions arise for social actors who must presently take action. As we will see in the remaining chapters, this has indeed become the case within the HIV prevention field, particularly with the debates on undetectable viral load and HIV transmission.

There are many clear parallels between the risk and uncertainty theories on health and illness that may be broadly classified as Foucauldian, with the theories presented in the previous two sections. In part this is because all of these schools of thought are more or less devoted to theorising the relationships between knowledge production, governing practices and everyday subjects. However, whereas risk society theory, and particularly the work of Giddens, tends to have a more positive appreciation of the relationship between social institutions and social actors, work inspired by Foucauldian thought tends to present a somewhat more dystopian view. Once again, Giddens sees social actors and social institutions as locked in a process of risk reflexivity, constantly adapting to one another as each addresses epistemic uncertainty. Work inspired by the Foucauldian tradition, however, is more likely to place emphasis on how the relationship between knowledge production practices with the lives of everyday social actors is one of power and often outright oppression. Existing knowledge is used to turn social actors into governable subjects and is used in the interests of neoliberal governmentality and biopower. In risk society theory and cultural theories on risk, risk becomes a key aspect of how individual social actors implement self-identity or how they come to actualise a sense of self. To Foucauldian theorists, risk becomes a way to operationalize governmentality and biopower, to turn social actors into governable at-risk subjects.

The uncertainty triad I introduced above offers us additional ways to understand some of the Foucauldian inspired theories on health and illness. As already discussed earlier, to be at-risk implies that a social actor is uncertain about his relationship to a particular harm. For example, serostatus uncertainty is a form of at-risk subjectivity whereby a social actor is unsure whether or not he remains HIV-negative. In Foucauldian theory, this mode of experiential uncertainty becomes a justification for the implementation of biopower. Researchers monitor and observe social actors as being at-risk for HIV and governing practices are implemented by the state (and adopted across civil society) to understand and monitor these social actors. Eventually social actors voluntarily adapt to the needs of the state by addressing themselves as at-risk subjects and implementing forms of healthism to secure well-being and avoid (expensive) illness.

Yet, epistemic uncertainty and social and political uncertainties add complexities to this dynamic. It is not always immediately clear how at-risk subjects should be governing themselves in relation to a particular harm, since knowledge is ever changing, as are the social structures available to address particular risks. Moreover, social actors are not agentless dupes. As biological citizens, they may actively resist dominant modes of governance and demand significant changes in state policy and service offerings to address particular health needs (i.e. as has been the case with HIV/AIDS). There isn't just a top-down control of uncertainty in society. Members of society also use uncertainty to resist governance and demand social reform. In other words, epistemic, social and political, and experiential uncertainty complicate processes of risk governance and challenge our conceptions of the relationship between subjects and power. Insofar as we have failed to reach a stabilising point on an issue, who counts as an "at-risk subject" and what counts as the best modes of governance to address this subject's needs (and their potential threat to society) is open to question and reform. Thus strategies of governmentality and biopower not only aim to govern uncertainty, but they are also governed by uncertainty. Epistemic uncertainty provides grounds for power, but it also provides grounds for resistance against power.

To summarise, risk produces governable subjects. It frames solutions to health, social and political-economic matters through the lens of risk management and it subjugates individuals and groups who become understood and controlled through their relationship to specific harms. As a governing strategy, risk can be used to allocate resources and to monitor and discipline subjects whose health statuses pose a threat to the security of the state. At the citizenship level, risk can be used to advocate for resources and health care. Risk is a powerful tool for monitoring health and illness within neoliberal society, due mainly to its capacity to generate at-risk subjects who voluntarily self-regulate and manage health risks in accordance with the biopolitical interests of the state. Indeed, within neoliberal society, risk is a core element of everyday life. Exploring these more mundane dynamics of risk management more thoroughly is the task of the next section.

Pragmatic Case Analysis and Emotions: Risk, Uncertainty and Everyday Life

The forms of critical risk analysis that I have reviewed up to this point have mainly looked at risk and uncertainty from a more macro perspective. They examine how social institutions, expert systems and communities use risk knowledge to govern social actors and how, in turn, social actors self-govern vis-à-vis this risk knowledge. While these theories argue that social actors are greatly affected by risk, they often avoid close examinations of the micro or mundane aspects of risk management. In the work above, experiential uncertainty is often used to make larger theoretical claims about knowledge production practices and social institutions rather than being the primary object of inquiry. Yet, some risk scholars play close attention to the ways in which risk and uncertainty affect decision-making in everyday life and believe that it is necessary to provide details or “thick descriptions” of everyday risk management strategies in order to have a more nuanced understanding of the political dimensions of health and illness (Lupton, McCarthy, & Chapman, 1995). These scholars may draw on the theoretical tools described above and will certainly add to discussions about knowledge production practices and social governance. However, the primary goal of this work is to provide detailed accounts of experiential uncertainty through rigorous case study analysis that examines the pragmatic, grounded and common sense elements of risk management practices. Following Boltanski (2011), this work has a critical capacity by offering us accounts of the moral judgements and everyday critiques of social actors that can allow us to determine how current social conditions remain unacceptable.

As an example of this type of pragmatic risk analysis, Lupton, McCarthy and Chapman (1995) performed interviews with heterosexual and homosexual men and women in Australia to understand their rationales for, and experiences of, getting an HIV test. This project focused especially on those who would not, epidemiologically speaking, be considered to be at "high risk." By focussing on everyday experience, Lupton McCarthy and Chapman uncovered a range of social cues and beliefs guiding the risk management practices of social actors, including the physical appearance, lifestyle and geographic location of sexual partners. For example, their research participants believed that sexual partners living in urban settings pose a higher risk than those from rural settings. They discovered that many of their gay and bisexual male participants routinely got tested for HIV despite no obvious risk factors. In some instances this routine testing was a way to alleviate feelings of guilt associated with participating in homosexual activity. We can see clear parallels here with Douglas' arguments about the moral dimensions of sexual risk-taking. Some participants, including heterosexual participants, strongly believed that what constitutes effective HIV prevention is extremely uncertain and thus felt certain that they were at-risk—that is, they were certain that they were uncertain that they didn't have HIV. While many of the research participants were not at high risk from an epidemiological standpoint, testing in the face of serostatus uncertainty presented many of these social actors with a concrete strategy to deal with anxiety, guilt and feelings of vulnerability.

Indeed, by focusing on the everyday experiences and decision-making processes of social actors, Lupton, McCarthy and Chapman have discovered that HIV testing often (though not always) has significantly less to do with verifying a possible HIV infection and more about a social actor trying to implement control and certainty in the face of extreme anxiety and the vulnerability associated with sexual intercourse. In chapter four, I will review other studies that have examined the everyday experiences of risk management and the processes by which gay men come to assess themselves as being at-risk for HIV. A common theme among all of this research is a need for social actors to implement certainty in the face of uncertain events (Körner, Hendry, & Kippax, 2005a, 2005b). Moreover, a need to placate anxiety and feelings of vulnerability plays a substantial role in how gay men come to assess themselves as being at-risk for HIV. Anxiety is a core dimension of experiential uncertainty.

Unquestionably, anxiety is a key component to understanding how risk and uncertainty is experienced in everyday life (Wilkinson, 2001, 2009). Wilkinson defines anxiety as "a reaction to social processes and cultural experiences in which our doubts and uncertainties are encountered as a threat to our personal security and even our identity as a personality" (2001, p.9). He further describes anxiety as a tension between knowledge and ignorance of a fearful situation—between what we know may harm us and our inability to know with absolute certainty if this harm can be avoided. Anxiety is thus a reaction to experiential uncertainty, to our awareness of knowing that we do not fully know everything about a potential threat's impact on us. Anxiety may be heightened for many social actors—indeed, for some it may be a permanent ontological or existential state—within modern risk societies where such a high premium is placed on a social actor's capacity for consistently implementing control in order to reduce the effects of uncertainty. When notions of self-identity are so strongly associated with managing uncertainty, failure to do so effectively can be experienced as an agonizing failure of self (Crawford, 1980, 1994). Thus everyday risk management is not simply about how lay people use available knowledge to manage risk. It is also a set of affective practices that rest on a social actor's fundamental desire to implement security with regards to her body, health and self-identity. Risk and uncertainty is, experientially, a confrontation with doubt and anxiety.

However, because risk is commonly understood as a logical calculation of harm and expert risk assessment and risk management strategies are, at least in theory, supposed to minimise subjective bias, risk is often considered to be a form of "reasoning." To think and act in terms of risk is considered to be a rational pursuit, one that is intended to prevail over the emotional. In this framing, emotions cloud our ability to make effective risk management decisions and to adequately evaluate harms—emotions are the antithesis of "genuine" risk management.

The idealisation of reason over emotion has been a cornerstone of Western thought and politics since the Enlightenment. Historically, sociologists and other social and political theorists have tended to ignore or marginalise emotions in their work, considering them better suited to the biological and behavioural sciences, like psychology (Barbalet, 2001, 2002). However, since the 1980s, an increasing body of critical social theory has emerged arguing that if we are interested in capturing the complex relationships between agency, structure and social change, we need to factor in the bodily experiences of social actors, including elements of emotional life (Barbalet, 2001, 2002; Lupton, 1998; Schilling, 2007; Turner, 2008). Many of these emotion theorists have challenged the reason/emotion binary, highlighting that emotions are always necessary to prompt a social actor to act rationally (Barbalet, 2002). De Courville Nicol (2011) argues that it is in fact unhelpful to categorize some actions as "rational" and others as "emotional," since *all* actions have an emotional component and emotions always shape agency—all decision-making, conscious or unconscious, involves emotion. When thinking about risk and uncertainty management, the key distinction, then, is not between reason and emotion, since emotion is always used to help us achieve reasonable ends. Rather, a more helpful distinction would be between cognitive analytical processes (the logical evaluation of knowledge, including ambiguous or uncertain knowledge claims) and the particular emotional embodied experience associated with a given situation.

Indeed, to de Courville Nicol, the experience of rationality can also be thought of as an emotion. It is an emotional attempt by a social actor to overcome the fear of being irrational, the fear that one lacks the capacity to cognitively process a particular problem and achieve desired outcomes. Following this argumentation, we could argue that risk management, as a form of rationality, is also an emotional effort to overcome the fear that one is unable to cognitively process the potential for harm and to mitigate uncertainty. Psychological risk theorists Slovic, Finucane, Peters and MacGregor (2004) support this view. They argue that a social actor's perceptions of risk always contains elements of the experiential and the analytic. On the one hand, the experiential mode of our risk perception is holistic and affective. It is based on associated connections, "vibes" from past experiences, images, metaphor and narrative. It is rapidly processed and self-evidently valid (p.313). On the other hand, the analytical mode of our risk perception is sensible, built on logical connections and mediated by consciousness. Similarly, Blackwell (2007) differentiates risk assessment from risk perception, to make the analytical distinction clear between more objective and more subjective aspects of risk management. Our analytic mode (our risk assessment) is based on symbols, words and numbers, and can be justified through logic and evidence (Slovic, et al., 2004, p. 313). Thus *both* the experiential and the analytical are rational, because both the experiential and the analytical—the affective and the logical—involve making reasonable decisions about how we might satisfy our particular needs at a given moment. Both modes are necessary to understand a problem posed by uncertainty and to implement a solution in the interest of preventing or minimising harm. Further, the two modes work simultaneously; people make risk management decisions based on how they have analytically processed a potential danger and how they intuitively feel about it. Risk management is influenced not just by analytic risk assessment, but also by experiential risk perception (attitudes, beliefs, senses).

De Courville Nicol has made parallel arguments. Drawing on the need to think about decision-making and agency beyond "reasoned action," de Courville Nicol (2011) has developed the theory of embodied in/capacity. Embodied in/capacity theory addresses how emotions help us to solve problems. De Courville Nicol understands emotions as having an embodied and felt character that is experienced through a continuum of fear to desire and that dialectically structures agency. Social actors move across situations being oriented by feelings of incapacity or fear (e.g. uncertainty) and of capacity or desire (e.g. certainty). Patterns of emotional experience constitute fear-based attempts at overcoming danger (anticipated pain) in the desire based hope of implementing security (anticipated pleasure). De Courville Nicol terms these combinations of incapacities (fears) and capacities (desires) as emotional-norm pairs.

While a sustained analysis of emotions is often absent from many sociological investigations (particularly those focused on understanding the social and political effects of knowledge, power and institutions), critically understanding the *social function* of emotions is key to understanding any sociological problem. Indeed, de Courville Nicol argues that "emotions act as *a bridge between structure and agency*, and are, one might add, normative forces in their own right. Emotional norms of incapacity and of capacity designate the forms of subjects' felt perceptions of problems in the overcoming of danger and the implementation of security. Emotions motivate us and help us in the resolution of problems, and they do so because they are the felt forms of those problems" (2011, p.3, emphasis added). For example, if we are interested in better understanding how social actors are affected by variable HIV risk management practices, we cannot exclude an examination of emotions. Indeed, it is through the felt perception of danger that social actors recognise that there is a (potential) problem to overcome in the first place. Serostatus uncertainty is not simply an abstract phenomenon; it is an embodied experience, a felt perception of looming danger. Risk is not only cognitively processed, but is something that is *felt*.

In in/capacity theory, risk/precaution is presented as a specific emotional-norm pair, with a preventive orientation to problems. Risk is the fear that one lacks the capacity to prevent potential harm to which one relates through some form of calculative knowledge, with precaution serving as its solution. The feeling of risk—at least in its advanced modern version—thus arguably contains the feelings of irrationality and of uncertainty. However, at any given moment an individual social actor may feel a combination of incapacities/fears or capacities/desires as emotional-norm pairs blend and develop in complex, dynamic, and relational formations.

The definition of risk in in/capacity theory is consonant with the definition I provided earlier. I first defined risk as being the probabilistic exercise of making sense of threats produced by the unknown. The difference here is simply the more explicit emphasis on the emotional dimensions of this "probabilistic exercise." All risk management decisions involve the systematic assessment of risk *and* a social actor's perception of risk (Blackwell, 2007; Slovic et al, 2004). All risk management decisions thus involve social actors negotiating with how they are *affected* by a particular threat. Embodied emotional reactions inform, from the very beginning, a social actor's recognition of a threat, his assessment of the significance of this threat, and how he comes to process available knowledge and weighs variable solutions in the interest of avoiding or minimising future pain. If, for example, a social actor does not *feel* that he is at-risk, cannot feel the emotional pain or anticipate future emotional pain, he is unlikely to adjust his social practices to respond to a situation. The felt sense of being at-risk is the very thing that will motivate a social actor to exercise his agency in the interest of managing future pain. There is thus no reference to risk management decision-making that is not also a reference to the emotional implications produced by a particular threat.

De Courville Nicol takes this analysis further by developing the concept of emotional economies which serves to highlight the broader social structuring of emotional life. Emotional economies refer to the "kinds of in/capacities that subjects experience in particular settings, and the felt strategic orientations that inform their action" (p. 4). Emotional economies can be larger socio-historical formations (such as those produced within advanced neoliberal capitalism) or smaller formations based on community affiliation (such as those produced by communities of sexual minorities). Emotional economies can be internally oriented—predominantly organized around moral dangers, where the self is ultimately responsible for states of danger and security—or they can be externally oriented—predominantly organized around subjective dangers, where an external force is ultimately responsible for states of danger and security. Moreover, de Courville Nicol argues that the emotional economy of our advanced capitalist era is often structured around ideas of healthy self-realisation, to the proper expression of socially acceptable desires rather than the negation of desire, or the disciplining of social actors through fear.

If we want to understand agency and action within the context of an emotional economy, we need to consider emotion management. Emotion management refers to strategies of any type that direct a social actor's behaviour in a given context by triggering an emotional experience: "In emotion management, emotional experiences and the agential course with which they are already associated, or with which they become deliberately associated, are purposely triggered so as to become embodied normative effects" (de Courville Nicol, 2011, p.115). Depending on how a danger and its solutions are presented, emotion management may be morally-based (the subject sees themselves as a threat to themselves), or subjectively-based (the threat is external). Thus emotion management can be performed on the self or can be directed toward others. Yet, in de Courville Nicol's own words, "whether it aims to transform the self (as an other) or another self, emotion management should be understood here as a form of social control that I refer to as emotional socialization" (de Courville Nicol, 2011, p.7).

One example of emotion management in action comes in the form of emotional campaigns. These are "rhetorical attempts to emotionally manage subjects—to direct agency through emotional regulation effects, or through prompting subjects' emotion management efforts. Emotional campaigns affect social practices by transforming individual and collective forms of embodied perception" (p.169). These campaigns can primarily use a *rhetoric of fear* that instigates the repression or correction of an (unwanted) desire to deal with painful effects. Or they can primarily use a *rhetoric of desire* that aims to activate or form a (wanted) desire to produce pleasurable effects. Think "smoking will kill you in a horrible way that will devastate all of those who love you" versus "regular exercise will increase your happiness, self-confidence and your sense of social connectedness (p.s. not smoking makes exercising easier)." Public health education campaigns to address HIV risk and prevention are examples of such types of emotional campaigns. I will examine a few cases of these in the following chapters.

From this reading of in/capacity theory, I argue that risk as a general discursive frame (or "rhetorical attempts") and an epidemiological strategy for classifying social objects—persons, groups, actions, relationships, etc.—is a form of emotion management. Risk discourse aims to alter how people feel and thus how they respond to these objects. Framing social objects through risk is a way to instigate a variety of in/capacities such as uncertainty/certainty, vulnerability/invulnerability, distrust/trust, social disapproval/social approval, immorality/morality, irresponsibility/responsibility, guilt/innocence, disobedience/obedience, etc. The specific set of emotions experienced will depend on how risk management (that is, the solution presented to avoid a particular threat) is framed and how an individual social actor perceives the threat. In this way, I present risk not just as a specific fear, but as a broader emotion management strategy that may operate through multiple in/capacities and that can have either moral or subjective dimensions depending on a social actor's specific relationship to a threat. When a social actor is labelled as being at-risk for a particular health hazard like cancer, this may activate a fear (such as vulnerability) that may prompt the social actor to take some action to implement security, such as adopting healthy behaviours or seeking medical advice. However, others may like the idea of resisting authority and consequently they will seek pleasure by actively adopting unhealthily behaviours (such as smoking). When specific social relations are labelled as risky relations, such as sexual relations between men, this will activate a fear (such as uncertainty) that may cause social actors to implement security, perhaps by avoiding these relations or taking precautionary measures (such as using condoms). However, some social actors may be aroused or drawn to this fear and can derive satisfaction from resisting precautionary measures (such as the use of condoms). Indeed, for some, sexual risk-taking as a practice can be a pleasurable, exciting experience (I will explore this issue more closely in chapter four).

Given the pervasive role of risk discourse in contemporary society, I argue that risk is a reigning emotion management strategy within the context of neoliberal capitalism. Risk management, especially as enforced by public health, can be considered to be a form of emotion management commonly used within neoliberal society to govern subjects and prompt, in the language of in/capacity theory, self-regulation (non-deliberate, habitual, spontaneous agency acquired through socialization) and self-management (deliberate, novel, effortful agency that is in the process of being acquired) (de Courville Nicol, 2011; Lupton et al., 1995; Petersen &

Lupton, 1996). Risk's affective dimensions are what make it such a powerful tool in aligning social actors' everyday actions with the needs of the state. Within neoliberal society, risk management solutions may either be presented as the suppression or correction of unwarranted desires through disciplinary action (for example, encouraging subjects to repress their desire to smoke, or fining them when they do smoke in certain contexts). Or they may be presented as the activation or formation of healthy desires (for example, providing incentives and promoting the benefits of regular exercise).

As we have seen, anxiety is a self-reflexive fear experience that is closely associated with experiences of risk management inasmuch as these implicate individual responsibility and effort in dealing with anticipated painful experience (i.e. in dealing with emotional danger). De Courville Nicol (2011) describes anxiety/interest as a modality of emotional experience in which danger and security are experienced as a problem of moral agency. Anxiety/interest is a modality of emotional experience in which danger is experienced as internal and responded to reflexively through novel, deliberately chosen means. When a social actor feels that a particular outcome is not only going to cause him pain, but that he is currently incapable of dealing with it for lack of means or of access to power, his interest (i.e. his moral reflexivity) is aroused. In order to implement emotional security in such an anxious state, a social actor might seek out knowledge that will make him feel better equipped to deal with an upcoming threat. Anxiety/interest can be contrasted with panic/excitement, a modality of emotional experience in which danger and security are experienced as externally determined and responded to through deeply ingrained, well-known means. A third modality called distress/relief is also discussed. Individuals and groups are thought to process emotional difficulties in this modality when a radical transformation in emotional orientation is required.

Like all modalities of emotional experience, anxiety may be experienced in different intensities. Moreover, any number of emotions could be experienced via this quality of moral awareness (i.e. anxiety is a modality of emotional experience through which one might experience sadness, anger, guilt, terror or jealousy). What makes it an anxious experience is the fact that the painful emotional state becomes an object of concern for the self as an agent who is responsible for his fate. Anxiety may be experienced as a subtle sense of doubt, a persistent feeling of worry, a periodic wave of nervousness, a flash of terror or a debilitating onslaught of horror. Anxiety favours the experience of blended emotions such as the mix of anger, shame and guilt (as the interview data presented later on will demonstrate) to deal with complex problems. In short, anxious experience is principally about the social actor's reflexive attempt to manage future emotional pain. Anxiety may be prompted by external events, but it manifests as an internal dilemma, a conflict of capacity—and for the risk disposed individual, as a lack of satisfaction in his ability to manage an uncertain future.

Embodied in/capacity theory introduces a temporal-spatial frame for understanding our relationship to danger based on three key agential strategies: present-oriented confrontation, past-oriented avoidance, and future-oriented prevention. While all dangers can be experienced non-reflexively in the modality referred to as panic/excitement, in contrast, anxiety is the moral fear experience that I have a hand in neutralizing threats, in mitigating the effects of threats, or in preventing the existence of threats. For instance, an individual might worry about their capacity to manage future problems competently and experience such an incapacity as an agonizing failure of self (Crawford, 1980, 1994; Wilkinson, 2001). Thus, HIV risk as an example, does not just threaten our physical health, but threatens what Giddens (1990) refers to as our *ontological security*, the confidence that we have as people in the continuity of our self-identities and our social and material environments. HIV infection threatens to change our very identities (from negative to positive persons) and our social worlds. The anxiety experience prompted by HIV risk is thus not reducible to avoiding physical illness or death, but is a manifestation of a social actor's sheer struggle *with himself* to prevent the breakdown/reconstitution of his very personhood.

In embodied in/capacity theory, risk is an emotional orientation to danger based on the future-oriented logic of prevention. Prevention-type emotions in the "worry/safety" family are geared towards ensuring that anticipated problems do not come into being. The feeling of risk adds an element of probability and a calculative rationality to this anticipation that is peculiar to it, and in being paired with precaution it orients solutions in particular ways—namely it orients social actors towards solutions that implicate proceeding with caution in the face of potential problems down the road, such as with "safer sex." Uncertainty is therefore built into this particular emotional-norm pair.

In contemporary culture, experiences of risk/precaution are frequently experienced through anxiety/interest based on the important volume of novel risky situations to be processed. As the moral fear that one cannot manage a threat to one's satisfaction, anxiety gives moral weight to experiences of risk. Thus uncertainty over preventing harm—that is, risk—can spark an existential, mental, emotional and somatic crisis, whereby a social actor begins to feel powerless in his ability to prevent or otherwise manage threats to the self. The danger, however remote, threatens to engulf the social actor whole unless some action is taken to implement emotional security. Risk related anxiety, then, is a reaction to uncertainty and to the experience of perceived powerlessness and vulnerability in the face of uncertainty. It is a reaction to acknowledging the fact that one may lack the agential power to handle the unknown and the ambiguous. It is an embodied reaction to the precarity of one's ontological security. The actual threat to one's physical health, is less significant (though certainly not insignificant) here than the threat one feels to their sense of self.

Experiencing anxiety is a core feature of human life, since all human beings are precarious and at some point will not have the ability to overcome the ultimate threat to life—death. Experiencing anxiety is thus not reducible to the management of risk. However, as I discussed throughout this chapter, in the neoliberal era social actors are made continuously cognisant of the many potential harms that threaten one's livelihood and longevity, as well as potential calculative precautionary measures which they can—and indeed, are *expected* to—implement to manage these harms. The constant influx of new risks and new (conflicting) precautionary measures to address these risks, creates the continual illusion that human beings can master their world and overcome precarity (and indeed, death) through probabilistic calculations. Thus in modern risk societies social actors are continually expected to evaluate their capacity to address potential harm, implement precautions and overcome precarity. Such self-evaluation can produce severe anxiety in those instances where a social actor feels particularly ill-equipped to deal with a threat, leading to a moral crisis. As we will see later on when I review the interview data for this study, this is indeed often the case when gay men assess themselves as being at-risk for HIV.

Thinking through de Courville Nicol's conceptualisation of emotions as a *bridge between agency and structure* will be essential to the analysis provided later on in chapter six. There I shall discuss the integral way anxiety structures the dynamic between a social actor's risk disposition during the context of *experiential serostatus uncertainty* and the broader social conditions which both produce serostatus uncertainty and are set up to help a social actor address his serostatus uncertainty. Anxiety thus serves as a conduit between the conditions of uncertainty generated by the HIV prevention field (as outlined in chapters two to four of this dissertation) and the agential capacity of social actors who must respond to experiences of serostatus uncertainty under such convoluted social conditions. Anxiety, I will argue, is core to how social actors are managed under conditions of uncertainty and is integral to how they come to build their agency through health maintenance practices, institutional navigation and sexual practices. Consequently, understanding the social function of anxiety will be critical to our investigation of the uncertainty triad. We cannot fully understand the social and political significance of the knowledge production and governing practices I shall be exploring in chapters three and four, without understanding the anxiety they produce and how social actors come to respond to such anxiety.

As a final example of the relationship between risk, uncertainty and emotion, sociological research has demonstrated the close relationship between emotional experience, political mobilisation and the assessment of risk knowledge. In her sociological investigation on early AIDS activism in the US, Gould (2009) argues that emotional structures directly shape how people respond to particular risks and how they manage feelings of anxiety, vulnerability and shame. Drawing on Bourdieu, Gould develops the concept of emotional habitus which she defines as: "an emotional pedagogy, a template for what and how to feel, in part by conferring on some feelings and modes of expression an axiomatic, natural quality and making other feeling states unintelligible within its terms and thus in a sense unfeelable and inexpressible" (p. 34). Gould makes a convincing argument that the dynamics of early AIDS activism can best be understood through an emotional habitus structured by an ambivalent relation between gay shame and gay pride. When gay men were confronted with feelings of shame (i.e. shame for being homosexual which was further exacerbated by an illness that seemed to be targeting mostly homosexuals), the gay community's response to the epidemic was more tranquil, complacent and cooperative with the state. Gay men were more willing to accept the blame associated with being at-risk. Many even considered themselves responsible for the "gay plague" (Watney, 1997).

However, as time moved on, the gay community started to develop pride in its ability to effectively manage the epidemic (i.e. to provide care and support to those sick and dying). It thus encouraged gay men to move away from harbouring feelings of shame and instead to cultivate anger toward mainstream society's indifference or hostility toward those suffering from AIDS.

Gay men as a *collective* were now less willing to accept the blame associated with being an at-risk group and were demanding a more responsive state. Emotions were key to gay men envisioning themselves as biological citizens—to recognising/feeling that there was a *social* problem that needed to be addressed and not just a failure of self. These emotions became the ground from which they began to advocate for more research, access to experimental treatments and services. The shift in the emotional habitus from one of shame, to pride and then to anger helped *individual* gay men move away from feeling responsible for harm. It altered the moral composition of risk (from "we are responsible for this illness" to "the state is responsible through its biopolitical neglect") and prompted fierce political mobilisation (Epstein, 1996; Rayside & Lindquist, 1992; Silverside, 2003).

Thus very similarly to Douglas, Gould argues that how a community responds to a risk will affect how individual social actors in that community mitigate a particular risk and how they interpret the moral implications of being at-risk. Along with the critical evaluation of expert produced knowledge, resistance to expertise and the preservation of communal values, this process works through the development of an emotional habitus that teaches members of the community how to manage their emotions—how to *feel* about serostatus uncertainty and sexual risk-taking in the context of the HIV/AIDS epidemic—in particular ways to meet socio-political goals.

To summarise, some critical risk scholars closely investigate social actors' everyday experiences managing risk and uncertainty. This research may be interested in offering grand theorisations, but it is primarily motivated in providing us with rigorous case study analysis of how particular threats affect particular people in particular ways. This type of work offers us grounded evidence on the concrete, pragmatic and common sense ways social actors are making sense of harm. Paying such close attention to the mundane elements of risk and uncertainty management provides us with nuanced understandings of how social actors are responding to epistemic and social and political uncertainties.

Scholarship in this domain is not entirely separate from the scholarly traditions mentioned above. It remains directly conversant with many of the theories that I have been exploring in this chapter. However, its emphasis on the finer details of risk management in daily life over producing grand theories on risk and uncertainty, offers us very different, and necessary, ideas and insight. Arguably, the theoretical traditions described before have a tendency to turn people into abstract concepts, into these "subjects of risk" that help us to think about the effects of power (especially Foucauldian analysis). Research of a more case study and pragmatic nature combats this tendency in the field. It does this by bringing back a sense of humanness and bodily awareness to our understanding of social actors and social behaviours, a reflection of how people are affected in visceral, somatic and emotional ways as they address dangers (i.e. anticipated pain).

Indeed, it is strikingly clear from the literature that feelings of anxiety and vulnerability play a crucial role in how social actors make sense of uncertainty and risk knowledge. Social actors' perceptions of risk are based on analytical and experiential modes, on the cognitive and emotional. Risk may be considered to be a specific fear, as the incapacity to probabilistically calculate harm. Or, as a widely used discursive tool within neoliberal capitalist society, it can be considered to be a master emotion management strategy that aims to regulate subjects in accordance with the needs of the state. Framing matters through risk changes how social actors think and feel about them. Emotional pedagogical strategies at the community level can shape how individual social actors respond to and politicise uncertainty in ways that may resist mainstream moral characterisations associated with certain risks and dominant strategies of risk management proposed by the state. Thus part of critically analysing the effects of epistemic and social and political uncertainties on social actors includes a reflection on how social actors are emotionally affected by these uncertainties. Understanding the experiential domain of uncertainty, means grasping with the emotional elements of risk and uncertainty management.

The key issue here is that framing problems through risk not only entails a cognitive evaluation of potential harmful outcomes, but also a management of fear and desire. This means that everyday risk analysis is not just about assessing how knowledge about potential harms comes to shape how social actors implement security. It is also means the reverse. A desire to implement security, certainty and safety will play a role in how social actors assess and negotiate what is true and untrue about anticipated harms. Knowledge shapes emotional experience and emotional experience shapes how social actors interpret knowledge. Congruently, epistemic uncertainty shapes emotional experience and emotional experience shapes how social actors interpret epistemic uncertainty. Again, there is no reference to risk that is also not a reference to emotions.

This does not mean that all scholarly risk analysis, including work focused on everyday experience, is always explicitly concerned with describing and making sense of emotional life in advanced detail. Indeed, the sociology of emotions can be considered to be an entirely separate field of inquiry from risk and uncertainty studies, one that has its own epistemological and ontological dimensions. Theories on emotions can be used as the primary framework to investigate matters such as HIV/AIDS without any substantial reference to risk theories (Crimp, 2002; Cvetkovich, 2003; Gould, 2009). In this dissertation, however, the sociology of emotions operates less as a primary framework for investigating HIV risk management and more as a congruent set of ideas that will add a degree of theoretical richness and analytical clarity to the following investigation. I believe that in order to investigate the effects of HIV risk on social actors we must understand how HIV risk emotionally affects social actors. This requires us to draw on nuanced analytical tools from the sociology of emotions, even if emotions are not our principal object of study.

Thus in the proceeding chapters, as I investigate the epistemic, social and political and experiential uncertainties associated with HIV prevention, I will often return to ideas from the sociology of emotions to add additional insight. This will especially be the case when I present the original theory on risk disposition in chapter six. There I will demonstrate how anxiety comes to structure the ways in which HIV-negative gay men implement agency in the face of serostatus uncertainty. In chapters three and four, I will periodically return to the ideas of emotion management and emotional pedagogy strategies when I deal more particularly with the effects of epistemic and social and political uncertainties in the HIV prevention field.

For now, it is necessary to bring together all of the key ideas that I have picked up from critical studies on risk and uncertainty thus far, in order to develop an analytical framework that will guide data collection and analysis in a coherent fashion.

The Uncertainty Triad and Critical Social Science on HIV

To summarise, uncertainty refers to a condition where unknown variables produce a recognized state of ignorance or ambiguity. It is a form of “negative knowledge,” a knowing about not knowing. Risk refers to the probabilistic exercise of making sense of uncertainty. To label something as being “a risk” is to make explicit that the uncertainty associated with this object may pose a threat in the future. Uncertainty management refers to social practices deliberately performed by social actors (both experts and laypersons) to negotiate with, prevent and minimise the impact of the unknown on individuals or groups. These social practices can be in the form of knowledge production (e.g. scientific research), social governing practices (e.g. public health policy) or everyday confrontations with uncertainty (e.g. condom use). Risk management is a form of uncertainty management that is reliant on the probabilistic appraisal of future threats versus future rewards. In addition to a systematized appraisal of risk (that is, risk assessment), all risk management practices are guided by risk perception, by beliefs, values, judgments and emotional states. Critical scholarship on risk and uncertainty investigates the nuances and socio-political implications of these risk management practices.

In particular, critical studies on risk and uncertainty examine how experts in technico-scientific disciplines, such as epidemiology, produce and respond to uncertainty through their knowledge production practices, thus socially constructing risk. They examine how this uncertainty is communicated and managed at various social sites and how social actors cope with such uncertainty in their everyday lives. Risk society theory places emphasis on how knowledge production practices, social institutions and everyday social actors reflexively adapt to one another in the context of shifting social practices and emerging contradictory knowledge. I referred to the constant negotiation of social practices in all domains of uncertainty management as a condition of uncertainty. A consistent and extreme lack of expert consensus on key risk management issues represents a failure to achieve a stabilising point. Cultural theories on risk place emphasis on how risk discourse is used to moralise particular persons and behaviours and how aversion or tolerance to risk is determined by a social actor's location within a given community context. Governmentality and biopolitical perspectives on risk are interested in how various social institutions, such as public health, use risk knowledge to govern subjects and how this knowledge is operationalized to make biological citizenship claims. This critical perspective is interested in how research about health risk from the technico-sciences generates at-risk subjects, persons and groups who are understood, monitored, governed and are expected to self-govern vis-à-vis their relationship to a particular set of risks. And finally, research that focuses on everyday risk management practices pays close attention to the nuanced ways that social actors handle uncertainty and how they confront themselves as being at-risk for particular harms. This often entails understanding how social actors cope with anxiety and vulnerability and how emotions may be used to manage the conduct of social actors.

In the following pages I shall take the ideas presented in this chapter and apply them to an analysis of the HIV prevention field. Instead of relying on a singular school of thought or theoretical framework (e.g. risk society theory), I offer an analytic model that combines compatible elements from across the different critical perspectives on risk and uncertainty. After I present this model I will take a moment to discuss why this combination of theoretical tools is justified despite potential epistemological and ontological differences across the contributing scholarly traditions.

For all of its diversity, critical studies on risk and uncertainty are interested in making sense of the interactions between the three spheres of uncertainty management: knowledge production practices, governing practices and everyday social practices. In aiming to address particular threats, social actors operating in each of these domains continually encounter uncertainties. Knowledge production practices confront epistemic uncertainties, governing practices encounter social and political uncertainties and everyday social actors face experiential uncertainties. Each sphere of uncertainty management eventually comes to confront the uncertainties and shifting practices of the other two domains.

Broadly speaking, critical social science on HIV is also interested in examining the connections between knowledge production, governing practices and everyday experience (as I laid out in the introduction). However, as a general domain of research, it doesn't exactly inform us *how* to do this work, how to organise, interpret and ultimately make sense of data. Critical studies in risk and uncertainty, however, provide us with the analytical tools to do a critical project on HIV. It provides us conceptual clarity and helps us to think through the connections between the three spheres of uncertainty management. And it is particularly apt to do such a critical project considering how embedded the notion of risk is in our response to HIV (which I will demonstrate more clearly starting in chapter two). You cannot think about HIV prevention without thinking in and through the concept of risk, and as I will further demonstrate, uncertainty.

Critical social science on HIV is thus the larger framework and general goal of this dissertation. However, critical studies on risk and uncertainty provide the tools to achieve this goal. Periodically matched with key ideas from institutional ethnography, health and illness and sexuality studies, I will use notions from critical risk and uncertainty studies to construct a critical social science project on HIV-negative gay men and HIV risk. In the proceeding chapters, as I closely review activity in the HIV prevention field, my primary task will be to critically reflect on the three spheres of uncertainty management and to examine how the uncertainty triad is mobilised in the interest of affecting social change and controlling disease incidence. The following table summarises the analytic questions that will guide the following literature reviews and empirical project.

Table 1.1: Uncertainty Triad Analytic Framework

Sphere of Uncertainty Management	**Relevant Activities**	**Associated Uncertainty**	**General Analytical Questions**
Knowledge Production Practices	-Scientific research -Public health reporting (e.g. epidemiology reports)	Epistemic	-What types of knowledge are being produced about a particular threat and/or preventive action against that threat? -How is epistemic uncertainty about this threat or preventive action being addressed?
Governing Practices	-Health care services -Policy and policy adjustments (e.g. legal reform) -Community programming & education -Media -Activism	Social and Political	-What governing practices are being implemented to respond to a particular threat and to emerging information about prevention practices? -How are the social and political uncertainties associated with these governing practices being handled? -How are social institutions moralising and politicising shifting social practices?
Everyday Social Practices	-Sexual practices -Drug use -Health maintenance -Fostering relationships	Experiential	-How are social actors experiencing a particular risk in their everyday lives? -How are social actors adjusting their social practices in response to a particular risk? -How do social actors perceive themselves as being at-risk?

In chapter three, I will primarily apply the questions on knowledge production practices and epistemic uncertainty to the review of mainstream biomedical and public health research (that is, ruling forms of knowledge) on gay men and HIV prevention. I will extend upon this analysis in chapter four, where I will then more directly apply the critical questions on governing practices. Here I will closely review critical social science and humanities literature on gay men to make sense of the social and political uncertainties associated with shifting gay male sexual practices. In chapters six and seven, I will then use the original interview data collected for this dissertation to respond to the last set of questions on everyday experience. However, my reflections on epistemic and social and political uncertainty in chapters three and four will be absolutely integral to setting up the methodological parameters for data collection outlined in chapters five and securing original insights into the everyday experiences of navigating HIV risk. In particular, following the insights of institutional ethnography described in the introduction, I will use my critical review of the HIV prevention field in chapters three and four to determine which groups of social actors and which types of social practices are over-observed at the expense of others groups and practices. I will outline a research project and data collection process that aims to address this dynamic, expanding how we envision the "gay male community" within the context of our research practices.

Thus throughout this dissertation I will continually reflect on the role of the uncertainty triad during the transition to the biomedical era of HIV prevention, charting out its effects on sexual practice, agency and well-being. However, the fullest articulation of the relationship between epistemic, social and political and experiential uncertainties on gay men's lives will be presented in chapter seven. It will be in this final chapter that I will most comprehensively draw on all of the critical conclusions drawn from the proceeding chapters to offer the fullest portrait of the conditions of uncertainty.

The particular organisation of uncertainty management practices that make up the analytical model presented in table one is perhaps most congruous with risk society theory. Nonetheless, I will routinely return to ideas and conceptual tools from the other scholarly traditions in the forthcoming analysis. The following chart provides a list of analytical questions that best encapsulate the main thrust of each school of thought on risk and uncertainty that I have discussed in this chapter.

Table 1.2: Risk Theory Tools

Theoretical School	Critical Questions
Risk Society Theory	-How are knowledge production and social institutions reflexively adapting to one another in the absence of a stabilising point? -How are social actors implementing self-identity in the context of shifting knowledge and social institutions?
Cultural Theory	-How are epistemic uncertainties being moralised to cast blame and establish social hierarchies? -How is risk-taking and risk avoidance being moralised at different social sites? -How do social actors develop a sense of self in relation to their community location, given competing information on risk?
Governmentality and Biopolitical Theory	-How are the uncertainties in each domain of risk management being mobilised to govern the population? -How are uncertainties turning social actors into self-regulating at-risk subjects? -How do epistemic uncertainties become grounds for competing biological citizenship claims?
Pragmatic Case Analysis and Emotions Theory	-What does uncertainty and risk management actually look like in everyday life? -How are social actors emotionally affected by uncertainty? In what ways does this influence agency? -What emotion management strategies are being employed in order to govern social actors?

To clarify, I will use the questions in table one to guide the literature review, data collection and data analysis process in the coming chapters. These questions have been established by reflecting closely on the key contributions of critical scholarship on risk and uncertainty. The questions presented in table two are comparable in intent to those in table one, though they follow the distinct nuances of the scholarly traditions that they are associated with, adding an additional analytical texture. Throughout the forthcoming literature reviews I will regularly employ the different conceptual tools described throughout this chapter to add clarity to the investigation, thus answering the questions in table two. However, while I draw substantially from the work of the scholars presented in each of these schools, my analysis is not indebted to one specific tradition. For example, while I will routinely use Foucauldian ideas to understand a dynamic or situation, this dissertation does not consider itself to be (at least not principally) Foucauldian. Rather, this project can be more accurately described as a critical social science project on HIV that utilises an original, multidimensional analytical framework on risk and uncertainty management—that is, the uncertainty triad.

This decision to merge scholarly traditions may be unsettlingly to those who are more accustomed to research that operationalizes a singular framework or scholarly tradition. There are no doubt epistemological and ontological differences between the different schools of thought that I have been discussing, which can surely complicate such a strategy. Giddens (1992), for example, has vastly different views on sexuality than Foucault (1978/1990). Yet, for my purposes in this dissertation, understanding the differences between risk and uncertainty theorists remains less important than recognising their inherent similarities. Combined, their analytical tools offer us the capacity to rigorously reflect on the relationship between epistemic, social and political and experiential uncertainty during the transition to the biomedical era of HIV prevention. This is my primary goal over offering further elaborations on the nuances and differences between risk and uncertainty theories.[8]

There are two remaining justifications for combining theoretical ideas into one broad analytical frame. The first is that combining these conceptual tools is already quite common in established scientific literature as numerous scholars routinely mix ideas from across the risk and uncertainty canon in myriad ways. As an example, Girard's (2013) work on gay men and HIV in France regularly employs ideas and analytical tools from Giddens, Douglas and Foucault in a coherent fashion.

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[8] For a robust literature review on this topic, including key differences, please see Lupton (1999).

And second, an inability to merge tools from different critical traditions would render the notion of interdisciplinarity invalid. Interdisciplinarity requires researchers to synthesise and harmonize across disciplines to create a coherent analysis (Choi & Pak, 2006). Thus by its very nature, interdisciplinary investigations require researchers to take ideas from different schools of thought (and indeed, disciplinary traditions) in order to create an intelligible narrative on an issue. This type of research practice will inevitably fail to address all of the finer details of every framework it incorporates. This dissertation cannot, for example, cover the entire scope of Foucault's thoughts on power and the body. This is, no doubt, the primary weakness of interdisciplinary methodologies. Yet such limitations are arguably offset by the intellectual possibilities bred by the creative merger of scholarly ideas and analytical tools.

This is not, to be sure, a valorisation of scholarly scope over scholarly depth. Indeed, chapters three and four are very in-depth analyses of research on gay men and HIV prevention. My argument here, rather, is that a thorough analysis of this literature—which is in fact absolutely necessary to understand in order to produce new knowledge about gay men and HIV—would not be possible within the parameters of a dissertation if reflections remained just on the theoretical tools of analysis. As interdisciplinary social scientists we need to ensure that we use ideas and concepts correctly and respect their original epistemological and ontological parameters. Merging ideas is not a justification for a lack of scholarly rigour. Yet we also need space for intellectual freedom in order to provide original insight and produce new analytical tools. Indeed, employing the uncertainty triad as a chief analytical device is one of this dissertation's original contributions to critical social science perspectives on HIV.

In short, the theories presented in this chapter have been foundational for helping me to think about how to best advance a critical social science project on HIV. In the coming chapters I will routinely operationalize the key ideas that I introduced in this chapter to learn more about how HIV risk, and in particular, the experience of serostatus uncertainty, affects the sexual practices, agency and well-being of HIV-negative men. Concepts and theories about risk and uncertainty are highly suitable for a critical social science investigation on HIV. As discussed throughout this chapter, critical studies on risk and uncertainty tend to be highly critical of how expert systems, such as public health authority, produce and utilise knowledge to govern at-risk populations. This is also one of the main objectives of critical work on HIV (Mykhalovskiy & Rosengarten, 2009a, 2009b).

Indeed, concepts and theories from critical studies on risk and uncertainty have already been used in critical social science projects on HIV and gay men. Adam's (2005, 2006) work has tracked the way in which the HIV prevention field has turned gay men into neoliberal sexual actors who are expected to operate as risk calculators. Flowers (2001) has documented the evolving nature of risk management practices over the first two decades of the epidemic. Kippax has used the risk management practices of gay men based on condomless sex to question public health governance strategies (Kippax & Race, 2003). Körner, Hendry and Kippax (2005a, 2005b) have detailed the nuances behind HIV risk self-assessment. Bloor (1995) has critically investigated the limitations of existing epidemiological models premised on risk assessment practices, such as the health belief model. Girard (2013) has used cultural risk theory to categorise gay men's reactions to unprotected anal intercourse in Paris based on their affiliation to gay community and political groups. I will examine the details of this work in chapter four. However, at their core, these studies demonstrate that HIV prevention in everyday life is a fairly complex phenomenon and that epidemiology and biomedical research, by flattening out the nuances of social interaction and politics, often provide limited understandings of what risk management actually looks like on the ground. Moreover, work like Adam's (2011) and Epstein's (1996) highlight just how much epistemic uncertainty is attached to emerging evidence on HIV prevention. This scholarship further reminds us of the politics inherent in determining what constitutes—and who gets to constitute—reasonable versus unreasonable doubt.

The following chapters will continue this tradition of critical social science on HIV. I will utilise theories and concepts from critical studies on risk and uncertainty in the interest of investigating HIV prevention practices among gay men. Methodologically, I will offer something original by operationalizing the uncertainty triad laid out in this chapter. Guided by the three central sets of questions on knowledge, governing practices and everyday experience outlined in table one, I will come to make sense of the relationship between epistemic, social and political and experiential uncertainties during the transition to the biomedical era of HIV prevention.

I will begin this examination by looking at established scientific literature on HIV prevention and will critically investigate how social institutions have used this knowledge to generate and govern gay men as at-risk subjects. I will pay close attention to how epistemic uncertainty related to emerging biomedical and public health research is managed and governed.

I will then closely explore critical literature on HIV prevention and gay men to see how critical scholars have contributed to our understandings of risk management. From here, I will move on to collect and analyse data about the everyday experience of managing HIV risk to see how gay men perceive themselves as being at-risk and how they are managing serostatus uncertainty in the transition to the biomedical era of prevention. This analysis will lead to the development of an original theory on risk disposition, which explains how gay men implement agency in the face of serostatus uncertainty.

However, before I begin this literature review and critical analysis, I shall first take a moment in chapter two to go over the specifics of HIV transmission and prevention. Here I shall address key words, important acronyms and explain the intricate relationships between various HIV prevention concepts. This will allow readers to enter the critical literature reviews with a crystal clear understanding of available HIV prevention practices in Canada during the transition to the biomedical era of HIV prevention.

Okay, so when a guy finishes, there's ... the material, okay? And then that stuff can leak out from around the sides of condoms. And here's how I figure it, he will leave his penis in you from when it's hard to when it shrinks because that's what guys are wont to do .... And then when they pull out: it’s fucking mayhem! I've been diagramming it in my head all afternoon. And no one speaks about this!

-Hannah Horvath, HBO Girls, Season Two, “Vagina Panic”

Chapter Two

HIV Prevention and Gay Male Sexual Practice

Biological and Behavioural Overview

HIV prevention is a fairly complex form of risk management. Though the ideas of condom use and avoiding the exchange of bodily fluids are, at least in theory, fairly straightforward, there are a significant number of nuances that can make HIV prevention practices more or less effective. To bring clarity to these practices, in this chapter I will provide an overview of the gay male HIV risk management strategies available during the transition to the biomedical era of HIV prevention. Particular emphasis will be placed on HIV transmission through sexual activity versus drug use. Though the focus will be on gay male HIV prevention, much of what is presented below may also apply to heterosexual sexual relations.

The following pages will focus on the biological and behavioural aspects of HIV risk management in order to introduce or refresh readers to key HIV prevention concepts (e.g. undetectable viral load, window period, serovariance, etc.). In the following chapter, I will specifically review scientific literature and education examples from the HIV prevention field and, guided by the uncertainty triad, I will factor in some of the political nuances behind HIV prevention knowledge production, governing practices and everyday social practices. However, having an intermediate understanding of the biological and behavioural components of HIV prevention will be essential for making sense of the scholarly arguments explored throughout the remainder of this dissertation.

From the onset, it is important to highlight that absolutely every single idea presented in this chapter has been rigorously debated at some point. Many of these issues and strategies have been associated with significant levels of epistemic uncertainty. There remains great disagreement among HIV experts over the accuracy of certain research claims and the efficacy of prevention practices. I will critically explore and make sense of this epistemic uncertainty in the next chapter. However, to begin, we need to build a basic understanding about HIV prevention practices. Furthermore, we must remember that knowledge and policy about HIV prevention and the availability of particular biomedical tools and health services are always changing. Thus this chapter provides a snapshot of available prevention tools within the transition to the biomedical era of HIV prevention in Canada. Some of the information below is not as directly applicable in the current context. For example, the use of Truvada as PrEP (*pre*-exposure prophylaxis) was approved by Health Canada in February 2016 and more science confirming the link between undetectability and the reduced risk of HIV transmission among gay men has emerged (Grulich et al., 2015). Despite these important shifts, it is necessary to capture the very specific research claims, policies and safer sex strategies that were available during the time period under exploration in this dissertation, in order to accurately reflect on the relationship between epistemic, social and political, and experiential uncertainty.

As a form of uncertainty management, HIV prevention is usually framed as a form of *risk reduction* or *harm reduction* by community agencies and in public health guidelines (Canadian AIDS Society, 2004). The term harm reduction, however, is more commonly associated with drug use. This means that as a risk management strategy, HIV prevention practices are meant to reduce the probability of an HIV infection occurring in someone who is currently not infected with the virus. The more effective the risk reduction practice implemented, the higher the degree of certainty someone may have that he has not been infected.

Risk reduction is not the same as *risk elimination*. In terms of HIV prevention practice, probabilities for harm may be reduced, but rarely can they be absolutely extinguished from a particular sexual circumstance. This is why the original and far more popular concept of *safe sex* is more routinely referred to as *safer sex* in the HIV prevention field (Henriksson & Månsson, 1995). Sexual activity can be made safer (risks can be reduced), but can rarely be made entirely safe (where all potential risk is eliminated). Sex always brings some uncertainty. Since HIV prevention is often framed as the reduction and not the elimination of risk, to practice HIV prevention automatically renders a person at-risk in some capacity. The degree to which someone is at-risk will vary widely depending on his behaviours. However, regardless of preventative measures taken, the sexually active gay man is still at-risk, as there is always a possibility, however slight, that HIV may have been transmitted. Throughout this chapter, I will thus note the fundamental role of *serostatus uncertainty* in HIV prevention practices. This refers to a social actor's inability to be able to *conclusively* confirm his HIV-negative status or the HIV-negative status of his sexual partners.

HIV prevention can be divided roughly into four modes: safer sex, safer drug use, health maintenance and biomedical prevention. Safer sex and safer drug use refer to sexual activity or drug taking activity that factors in at least one risk reduction method, however effective that risk reduction method may be. I will examine many of these tactics below. Health maintenance, or medical surveillance, refers to interactions with health services, such as testing for HIV and sexually transmitted infections (STIs) that are necessary to effectively implement risk reduction strategies. HIV testing is not a form of HIV prevention in and of itself, but it can play a fundamental role in directing which safer sex strategies will be implemented. Biomedical prevention refers to the ways in which medications normally used to treat an HIV infection in a person already living with the virus can play a role in preventing new infections.

HIV prevention practices can be explained in very abstract and sterile ways. Yet sex and drug use are messy, complicated and real. Thus the following discussion will aim to describe some of this messiness and complexity by bringing in colloquial language used by gay men and highlighting some of the nuances of gay male sexual practice. This means that this chapter will contain some fairly explicit details about gay male sex. However, defining sex only in biomedical and highly abstract ways would fail to capture the experiences of those managing serostatus uncertainty.

Furthermore, such detail injects the body into our socio-political analysis on health and illness (Bendelow, 2009; Frank, 1990; Shilling, 2007; Turner, 2008), not just as a metaphorical construct, but as a living, breathing thing that senses, leaks, bleeds, gets aroused, ejaculates, pre-ejaculates, spits, tears up, shivers, cries, moans, aches, vomits, urinates, defecates, ages, gets ill and dies; a body that also sucks, fucks and comes. As a form of risk management, HIV prevention is fundamentally about body maintenance and healthism. It is about preserving the integrity of one’s body, protecting its boundaries and frequently subjecting oneself to medical surveillance in order to evaluate the realms of our body we cannot easily observe on our own. The aim of this chapter is to explore the nuances of this bodywork.

Biology of HIV Transmission: General Overview

HIV does not transmit easily from one person to another. It cannot be transmitted through everyday casual contact (e.g. shaking someone’s hand) and it is not an airborne virus that can be transmitted through coughing or by being in close physical proximity with an infected person. It cannot be transmitted through unbroken skin. Furthermore, not all *exposures to HIV* (moments where HIV has come in contact with the body of an uninfected person), will lead to a *chronic HIV infection* (a biological state where a person will forever be living with the virus in his system) (Canadian AIDS Society, 2013).

In their scoping review of recent clinical literature on transmission, the Canadian AIDS Society (2013) outlines five specific requirements necessary for an exposure to HIV to lead to a chronic HIV infection: (1) a source of infection (someone must already have HIV in their body in order to transmit the virus to someone without it); (2) a means of transmission (an activity must occur that will allow HIV to enter into the body of an uninfected person); (3) a host susceptible to infection (the uninfected person's body must be vulnerable to infection, which will be based on several biological factors); (4) an appropriate route of entry to the target cells of the body (the area of a person's body exposed to HIV must allow HIV to come into contact with the immune system cells that HIV needs in order to replicate and become a permanent fixture in the body); and (5) sufficient levels of the virus must be present in the transmitted bodily fluid (extremely low levels of transmitted virus will not be able to overcome the immune system's initial response to eliminate HIV from the body).

Considering all of these factors, the odds are not necessarily in HIV's favour. However, sexual exchanges between men can present opportunities where all of these requirements are easily met. Within Canada, such exchanges are one of the most prevalent ways in which the virus is transmitted.

HIV may be found in some quantity in multiple body fluids of an HIV infected individual, including saliva. However, in men, there are only several body fluids that can contain enough of the virus to allow for infection through sexual means. These fluids include: semen or ejaculate (colloquially: come or cum), pre-ejaculate (colloquially: pre-come or pre-cum), rectal fluid and blood. One of these fluids from a man currently infected with HIV must come in contact with a *mucous membrane* (areas of the body not covered in skin) of a man currently not infected with HIV, for a new infection to occur (Canadian AIDS Society, 2013).

Mucous membranes are found in the anus, rectum, foreskin, urethra, mouth and throat. HIV infection may occur when mucous membranes are intact and healthy. However, any damage to such surfaces (fissures, abrasions, sores, etc.) increases the potential for HIV to enter into the bloodstream and also increases the number of immune cells already present in the area to deal with possible infection and damage. These immune cells are also the very cells that HIV targets.

Such damage may be caused by (rough) sexual contact as well as the presence of other sexually transmitted infections (STIs) like syphilis or gonorrhea. *Thus the presence of STIs increases the likelihood of an HIV exposure leading to an HIV infection* (Canadian AIDS Society, 2013). In the context of oral sex, damage may also be caused from oral hygiene (flossing, brushing), as well as minor cuts, canker sores, etc.

When HIV enters the body the human immune system becomes activated, as it would with any other virus. However, HIV has found a way to use this process to its advantage by infusing itself into the very cells that are meant to protect the body from outside invaders and potential internal threats (such as bacteria or cancerous growths). HIV inserts its genetic material directly into the genetic material of *CD4 cells* (including helper T-cells, monocytes, macrophages and dendritic cells). These cells are designed to target foreign invaders. HIV integrates itself by turning its single stranded genetic code (RNA) into a double stranded genetic code (DNA). It then incorporates this new DNA (which contains the genetic knowledge necessary to replicate the virus in the future) into the DNA of the CD4 cells. As a result, these infected CD4 cells are now able to produce new HIV within the body. Thus HIV turns CD4 cells, our body's main defense system against bacteria, viruses and cancers, into its own little viral production factories. While the human immune system will get rid of stand-alone HIV traveling throughout the body, it does not attack the CD4 cells that have been taken over by HIV, as there is no indication from the outside that a foreign body has invaded these cells. Consequently, these infected CD4 cells are able to roam freely throughout the body, entering different organs and embedding themselves deeply into different tissues in the brain, lungs, gut, etc.

Eventually, the modified genetic material of the infected CD4 cells will activate the production of more HIV. The body's immune system will notice these newly produced viruses as foreign intruders and will aim to eliminate them. However, once again, some of these newly produced viruses will embed their genetic material into the genetic material of the very cells that are responsible for destroying them. These infected CD4 cells will then move around the body and wait to produce more HIV.

If the immune system works fast enough it can eliminate the production of new HIV in the body and an exposure to the virus will not be permanent. If, however, the production of HIV moves more quickly than the immune system's initial elimination process, the infection will be permanent. HIV will always embed itself into enough immune system cells before stand-alone viruses are eliminated. This is why the amount of virus in the transferred infected bodily fluid is an extremely important element for understanding transmission and chronic infection. For example, while there may be HIV present in saliva, there will not be enough of the virus present in transferred saliva for HIV to replicate more quickly than the body's immune defense.

Several weeks after an exposure to HIV where HIV is gaining ground, the body will produce antibodies for the virus. These are proteins specifically designed to eliminate HIV from the body. The appearance of HIV specific antibodies is known as *seroconversion*. As a term, seroconversion also refers to a permanent HIV infection in a human body. An uninfected person *(HIV-negative)* has moved from being exposed to the virus, to being infected with the virus permanently (they are now *HIV-positive*). HIV-positive persons are also commonly referred to as people living with HIV/AIDS (PHA or PLHIV or PWA). Colloquially, HIV-positive persons may be referred to just as "positive," or "poz." HIV-negative persons may just be referred to as "negative."

The "sero" prefix from seroconversion is used in multiple ways in the HIV prevention field. *Serostatus* refers to *HIV status* (whether one is living with or is not living with the virus). *Seropositive* refers to an HIV-positive individual (someone living with HIV, a PHA). *Seronegative* refers to an HIV-negative individual (someone not living with HIV). *Seroconcordant* refers to a relationship (normally sexual) where the partners share the same HIV status (all the partners in a relationship are HIV-positive, or all the partners in the relationship are HIV-negative). *Serodiscordant* or *serovariant* refers to a relationship where the partners do not share the same HIV statuses (one partner is HIV-negative and one partner is HIV-positive). While the terms serodiscordant or serodiscordance are more popular within the HIV prevention literature, *mixed status*, serodifferent (Davis & Flowers, 2011), *serovariance* and *serovariant* (which remove the concept of "discord" from sexual relationships) have gained some popularity in the HIV prevention field recently and will thus be used more regularly in the following pages. *Serophobia* refers to the fear of, and the discrimination directed toward, men and women because they are living with HIV. Other uses of the "sero" prefix will be described below.

Current medical screening methods can currently detect HIV antibodies in a newly infected person 22 days to 90 days after an exposure to the virus (Tooley, 2010; Ontario Ministry of Health and Long-Term Care, 2008). This time period of exposure to HIV to seroconversion is known as *acute infection* (Grace et al., 2015). About 80% of individuals may experience flu or cold like symptoms during the acute infection stage, as well as other symptoms such as rashes, chronic fatigue, depression and being more prone to other infections (Ontario Ministry of Health and Long-Term Care, 2012). These symptoms range in character and severity, and in most cases are very difficult to distinguish from other common ailments like the flu. This means that some people may be infected with HIV, but may think that they just have a cold or flu, while others may be infected but will show no symptoms, perhaps for years. *Thus the experience of early HIV related illness in the acute infection phase varies considerably from person to person. It is not easy to determine whether or not one has been infected or not based on somatic cues in the early stages of infection.*

When making specific reference to HIV testing or screening (more details below), the acute infection period is parallel (but not identical) to the term *window period*. The window period is the time period after being exposed to the virus, normally 12 weeks, that a person must wait in order to confirm an HIV-negative status through standard HIV testing practices (Ontario Ministry of Health and Long-Term Care, 2008). The most common way to test a person in Canada to see if they are infected with HIV is to check for the existence of *HIV antibodies* within collected blood. So one is not testing for the presence of the virus (a viral test), but for the presence of proteins that indicate that the body has been permanently infected with HIV. *Thus it is only after seroconversion that one can test positive for HIV antibodies*. Consequently, a person may be infected with HIV, but if he gets an HIV antibody test before he has developed *enough* antibodies for the virus to be detected by the antibody test (so anytime before the 12 week mark), his test results can turn out to be HIV-negative, even though he is living with the virus and is highly infectious. *To summarise, though most individuals will seroconvert within 22-34 days after an exposure to HIV, in Canada, an HIV-negative status cannot be confirmed before the window period of 12 weeks.*

Quite importantly, during the acute infection stage—so while the person is in the window period and cannot confirm his HIV status—the replication of HIV is in overdrive, as the body has not yet developed enough antibodies to neutralize the virus. This means that HIV viral load is extremely high. *Viral load* refers to the quantity of HIV within infected body fluids. The higher the viral load the more infectious a specific body fluid will be because the more virus is present. *Thus individuals in the acute infection stage—the first few months after an HIV* *exposure—have a high viral load count and extremely infectious body fluids*. This also means that individuals who have been recently exposed to the virus who are in the acute infection phase and have high viral loads, but have not yet produced antibodies, may test HIV-negative. These individuals are sometimes referred to as *HIV status unknown* men or *status unconfirmed*—they are experiencing serostatus uncertainty since they cannot confirm their HIV-negative statuses.

After the acute infection phase, the production of HIV specific antibodies will start to reduce the viral load in the body. The infected person, who has now seroconverted, has entered into the *chronic HIV infection stage* (Canadian AIDS Society, 2013). The infection is permanent, but the body has, for the time being, defenses to keep it at bay. In cases where HIV is not treated with medication, antibodies can keep the viral load low for long periods of time—months, years, and possibly decades. The length of time that the viral load will remain low depends on other biological factors and the initial strength of a person's immune system.

However, despite the presence of antibodies in the body that will neutralize HIV, invaded CD4 cells will consistently reproduce new HIV. Antibodies will destroy these viruses when they find them, keeping the viral load levels at bay throughout much of the chronic phase. However, each time this process occurs, HIV will invade more CD4 cells, which will go on to produce more HIV, which will invade more CD4 cells, which will go on to produce more HIV, and so on. Thus over time, viral load will increase. As HIV invades CD4 cells it also destroys their capacity to do their job, which is to remove foreign bodies that can do harm to tissue and organs and ultimately disable or kill a human body. Thus, while the *viral load increases, the amount of CD4 cells decrease. The amount of virus in the body will go up and the strength of the immune system will decline*.

If left untreated, eventually the number of immune system cells will be reduced to such a degree that HIV will not be neutralized—there will not be enough antibodies to face the quantity of virus in the body. Viral load will thus increase and the body fluids will once again become extremely infectious. The immune system will also be sufficiently compromised by this point. It will not be able to adequately stave off the growth of bacteria (e.g. salmonella septicaemia, tuberculosis), parasites (e.g. toxoplasmosis), fungi (e.g. pneumocystis pneumonia, candidiasis), viruses (e.g. Human Papillomavirus, Herpes Simplex Virus) and cancerous cells (e.g. Kaposi Sarcoma) that we frequently encounter in our environment or that usually live within our bodies at manageable levels. These are termed *opportunistic infections,* referencing the fact that pathogens have used the opportunity of a weakened immune system to gain a foothold in a human body. With opportunistic infections, previously benign pathogens and cancers become aggressive characters, creating severe illnesses that can lead to disability (e.g. blindness, dementia) or death. At this stage, one has developed *AIDS (Acquired Immune Deficiency Syndrome)*.

However, if medically treated, and if the patient is receptive to medical treatment, this process may be thwarted. Current combination therapies (highly active anti-retroviral therapies, HAART or ART) target HIV's ability to integrate its genetic material into CD4 cells *and* make the reproduction of HIV cells from infected CD4 cells more difficult by destroying the enzymes (proteins) that are necessary for this process.[9] In 1996, these combination therapies were first proven to be effective at turning an HIV diagnosis from an eminent death sentence into a *chronic manageable condition*, marking a key turning point in the global fight against HIV/AIDS (Mykhalovskiy, Patten, Sanders, Bailey, & Taylor, 2008). Since then, ART has also improved significantly, with reduced side-effects and easier to manage dosage levels, including one a day pill formats.

A person living with HIV and on ART has a chronic infection—with current biomedical technologies HIV cannot be completely eliminated from the body. However, ART keeps more CD4 cells from becoming infected. This means that an HIV-positive person's immune system will become less compromised. Fewer infected CD4 cells also means less HIV will be produced in the body. Thus not only does ART keep an HIV-positive person's immune system healthy, it also makes an HIV-positive person significantly less infectious by reducing his viral load. This is another significant biomedical fact in the HIV prevention field (Canadian AIDS Society, 2013). *Those with a medically treated HIV infection, who have managed to reach an undetectable viral load, are considered to be less infectious or not infectious at all to uninfected individuals*. The term "*undetectable viral load"* (sometimes termed *undetectable* or *undetectabilit*y), refers to a biomedical measurement of viral load within the collected body fluids (normally blood) of an HIV-positive person. When the viral load has become so low that our current medical

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[9] In more biomedical jargon, ART regimes operate through different combination of pills that have the following effects: nucleoside reverse transcriptase inhibitors or non-nucleoside reverse transcriptase inhibitors, protese inhibitors, entry inhibitors and integrase inhibitors.

technologies cannot detect the existence of the virus within the collected sample, this is referred to as "undetectable viral load." In Canada, an HIV-positive person is considered to be officially undetectable when he has less than 40 copies of the virus per milliliter of blood (Ontario Ministry of Health and Long-Term Care, 2008). Depending on the research study and technologies used, this figure has varied throughout the transition to the biomedical era of HIV prevention, including less than 200, 50, 40, 20 copies/ml. I will review these studies in chapter three.

Undetectability does not mean that the virus is not present in bodily fluids. It means that the virus cannot be detected with current medical screening technology. The term *zero viral load* and other variations of this term can be used colloquially to refer to undetectability; yet it inaccurately suggests the absolute absence of the virus from the body. I will consider the specific role of undetectability in prevention practices below, but in short, *an undetectable viral load can drastically reduce the level of infectiousness in the context of serovariant sex*.

Finally, since HIV-positive persons on treatment and who have access to medical care can maintain a strong immune system, an HIV infection is significantly less likely to develop into AIDS. This means that a person living with HIV is less likely to experience opportunistic infections, to be critically disabled or die as a result of having been infected with the virus. Consequently, HIV is often termed a *chronic manageable condition*. While it cannot be eliminated from the body, with current medications a person can live a healthy and long life with the virus. An HIV diagnosis is no longer the death sentence that it once was. Similar to a condition like diabetes, it can be managed.

With these biomedical facts in mind, I shall now turn to a discussion on safer sex strategies, to see how gay men may modify their sexual practices in order to prevent or reduce the risk of HIV infection.

Safer Sex Strategies for Gay Men

There are various strategies that can be employed to eliminate exposure to HIV and to prevent an exposure from becoming a chronic infection. Any strategy that successfully removes just one of the five factors necessary for a chronic HIV infection that were described above can be considered to be an effective HIV prevention practice—a person uninfected with the virus will remain uninfected with the virus. Yet, we will soon see that prevention practices can never be reduced to a single strategy or method. To successfully remove one of the five factors often requires a series of overlapping practices that must work together.

At the abstract level, ideas about HIV transmission and prevention can be articulated quite clearly. However, those practising prevention everyday are often faced with a series of unknowns, the most important of which are whether or not one or more sexual partners in a scenario is currently living with the virus or has an infectious viral load. That is, gay men are faced with serostatus uncertainty. This is why HIV prevention is often framed as a form of *risk reduction,* as there is always a degree of uncertainty (however miniscule) over whether or not HIV could be transmitted and whether or not HIV is even present in a given sexual situation. This is why the concept of risk reduction (versus risk elimination) is often employed to understand HIV prevention.

The Canadian AIDS Society (CAS, 2004) uses a risk reduction framework in its document *HIV Transmission Guidelines for Assessing Risk*. In Canada, this document is widely used within the HIV prevention field to communicate risk and discuss safer sex practices. *The Guidelines* offer risk categories to organize sexual behaviours: no risk, negligible risk, low risk and high risk. These categories are determined based on the abstract potential for a particular behaviour to lead to transmission (the theoretical possibility of an infection occurring through a particular sex act) and evidence of transmission (existing cases of HIV infection occurring though a particular sex act). Each risk category represents a combination of these two factors: no risk (no potential for transmission, no evidence of transmission), negligible risk (potential for transmission, no evidence of transmission), low risk (potential for transmission, evidence of transmission under certain conditions), and high risk (potential for transmission, evidence of transmission).

Examples of no risk sex acts include: kissing with no blood, non-insertive masturbation, and urine play on unbroken skin. Examples of negligible risk sex acts include: fingering, fisting, *receiving* fellatio/oral sex, *performing* fellatio/oral sex *with* a protective barrier (i.e. condom), and anilingus. Examples of low risk sex acts include: *performing* fellatio/oral sex *without* a protective barrier and anal intercourse *with* a protective barrier. Examples of high risk sex acts include: anal intercourse without a protective barrier. In summary, unprotected anal intercourse is the highest risk sex act, followed by protected anal intercourse and performing fellatio without a condom. HIV can be transmitted through all of these acts. The CAS guidelines do not distinguish between acts of anal intercourse where a sexual partner is the receiving or is the insertive partner. However, some evidence suggests that being the receptive partner during anal intercourse poses more risk (because more mucous membrane is exposed and there is a greater potential for tearing) than being the insertive partner (Wilton, 2012). In chapter three, I will look more specifically at the epidemiological literature qualifying the risks between receptive versus insertive anal intercourse.

To organize the following descriptions of safer sex practices, I will begin by discussing sex acts and prevention activities where the HIV statuses and viral load counts of the partners are either not known or cannot be confirmed. That is, I shall focus on moments where there is serostatus uncertainty. I will then move on to discuss how the biomedical advancements earlier described have shifted prevention strategies.

The first prevention practice to discuss is the most effective—abstinence. By avoiding all sexual contact and activity with individuals who are or who may be infected with HIV, a person may effectively avoid an HIV infection. Obviously this strategy does not work for social actors who wish to be sexually active. It can, however, be a suitable option for those who wish to avoid dealing with serostatus uncertainty for specific durations of time, as the interview data discussed later on will demonstrate.

A parallel strategy includes sexual activity where there is no physical contact—as through mediums like the phone (calling or sexual text messaging/“sexting”), mobile sex and dating applications, internet sites dedicated to sex, etc. There are numerous phone applications and websites that gay men may use to interact, flirt, date and meet up with one another for sex such as Bareback Real Time, Craigslist, dudesnude, Gay411, Grindr, Jack’d, Manhunt, OkCupid, Scruff, Squirt and Tinder.

One step above virtual meetings includes in-person encounters where individuals keep physical contact to a minimum and/or avoid *penetrative sex* (any form of sex where one person’s body part enters into an orifice of another). Mutual masturbation is one form of non-penetrative sex, which can be combined with other forms of touching and sexual play to stimulate intercourse (colloquially: dry fucking). According to CAS, (non-insertive) masturbation is a no risk act. Men may masturbate alongside one another (colloquially: jerking off), or may jerk each other off or may rub their penises against each other’s bodies, including against each other’s anuses and penises. In the last instance, risk may be increased since *theoretically* mucous membranes may be exposed to infected body fluids—for instance, if ejaculate/come or pre-ejaculate/pre-come were to land inside the urethra, foreskin or anus. Pre-ejaculate or ejaculate may be shared and used as a temporary lubricate. Semen landing directly into the urethra and foreskin increases risk.

The more likely risk here comes when instances of intense masturbatory play escalate un/expectedly into intercourse. Colloquially, this is referred to as *dipping*, a process whereby initial dry sex practice (in particular when one man is rubbing his penis against the anus of another), turns into a moment of penetration. This may be a momentary “slippage” or it may turn into full intercourse. Each partner may be on the same page (i.e. both the insertive and the receptive partner may have wanted this to occur) or one partner may initiate penetration without the full consent of the other partner in an attempt to move sex along. If the dipping is momentary, risk levels depend on the HIV statuses of the partners, how much pre-ejaculate/pre-come is present, the infectiousness of the receptive partner’s rectal fluid and whether the insertive partner is uncircumcised, since foreskin contains a mucous membrane.

Condoms may be used in such situations from the outset to avoid such risk, but using a condom in the context of sex that is not supposed to turn into intercourse may appear to be illogical or unnecessary. Indeed, putting a condom on can serve as an indication that full intercourse is on the table. Moments of dipping are also often just the beginning of intercourse, a way to slowly make the receptive partner more responsive to full anal intercourse. Partners may also begin intercourse without condoms and then decide after to put on a condom. This would still be considered high risk.

There are two general domains of penetrative gay sex—intercourse and oral sex. For anal intercourse (colloquially: fucking), a man may either be the insertive or the receptive partner. The act of inserting one’s penis into another (to fuck) is known as *topping*. To be the sexual partner who is topping is known as being the *top*. The act of receiving someone else’s penis (to be fucked) is known as *bottoming*. To be the sexual partner who is bottoming is known as being the *bottom*. Men who switch sexual roles from topping to bottoming (in general or during a singular sexual encounter) are considered to be *versatile* or *vers*.

Acts of anal intercourse can range in terms of intensity. The more aggressive an act of intercourse the more likely there will be tearing or bleeding, which will increase risk. Anal intercourse where condoms are not used is colloquially referred to as *barebacking, skin-to-skin* or *raw sex*. The term barebacking has a very particular history within certain gay/queer male milieus (Adam, 2006). It originally signified condomless anal sex with casual partners and partners with unknown HIV statuses or serovariant statuses. However, more and more the term is used to describe all condomless anal sex acts between men regardless of the sexual relationship. During bareback sex, the act of ejaculating into someone's anus is colloquially referred to as *breeding* or *dumping a load*. As a sex act between serovariant men, this obviously poses the highest risk for HIV transmission. The top may withdraw before ejaculating as a form of risk reduction, since one is reducing (but not eliminating) the amount of transferred bodily fluid. However, the top has been exposed to the body fluids of the bottom (e.g. rectal fluid on foreskin or in the urethra) and the bottom has been exposed to the body fluids of the top (e.g. pre-ejaculate and possible ejaculate in the anus).

Penetrative anal sex does not necessarily have to include penises. People can top or be bottomed with fingers and/or sex toys. These activities can only pose a risk if body fluids are involved. For instance, if one partner has pre-ejaculate/pre-come or blood on his fingers or on the toys that he is using to penetrate someone else. Again, the amount of body fluid is important to consider, so we are mostly in the domain of the theoretical.

Oral sex refers to oral contact with genitals including the penis, testicles, anus, and surrounding areas. Normally when the term oral sex is used in the HIV prevention field it is describing fellatio. To perform oral sex on the genitals, fellatio, is colloquially referred to as *sucking dick*, *giving head*, *blowing dick* or giving a *blowjob*. This is considered to be a low risk sex act. People can be infected with HIV from *giving* head. However, *receiving* head is a negligible risk act. Oral sex may involve placing some or all of someone's penis into one's mouth. To avoid receiving pre-ejaculate/pre-come or ejaculate/come, a performing partner may avoid putting the head of a penis into his mouth. Additionally, a performing partner may ask the receiving partner not to ejaculate/come into his mouth. These are both risk reduction strategies. Having someone ejaculate/come into one's mouth as well as swallowing ejaculate/come can increase risk. Any cuts, sores, abrasions (e.g. canker sores, cold sores/herpes, minor cuts from brushing one's teeth or flossing, STIs in the oral cavity, etc.) will increase risk. Given oral sex's status as a low risk act, recourse to oral sex over anal sex with casual partners may be a safer sex strategy for some, though STIs can still be easily transmitted.

To perform oral sex on someone's anus, anilingus, is colloquially referred to as *eating out* or *rimming*. Tactics here can range from non-insertive (activity occurs on the surface area) to insertive (the tongue may enter the anus). Rimming may be performed as an actual full act of sex, or to prepare for anal intercourse. Though rimming poses risks for STIs and hepatitis, it is a no risk act for HIV.

The main strategy to prevent the transmission of HIV in penetrative sex is the use of protective barriers—that is, condoms. Despite the many nuances of effective HIV prevention practices, the use of condoms is commonly what people refer to when they are describing safer sex.

In the context of fellatio, the receiving partner can wear a condom on his penis. This will eliminate the chances of ejaculate/come and pre-ejaculate/pre-come going into the mouth of the performing partner. This strategy will also help reduce the transmission of other STIs that can be transmitted orally, like syphilis, herpes, gonorrhea, etc. Though, as the forthcoming review of the HIV prevention literature and the original empirical data presented later on will demonstrate, it is very rare for a receiving partner to voluntarily wear a condom during fellatio.

For anal intercourse, the top can put a condom on his penis *before* penetrating the bottom to prevent semen being transferred. There are, however, a few nuances to condom use that are necessary to most effectively reduce risk. First, not all condoms are effective at protecting against the transmission of HIV. For instance, lambskin condoms do not provide an adequate barrier against HIV. Second, the condom must go on before penetration for risk to be reduced. The more dipping and casual play, especially if pre-ejaculate lands on the anus, the higher the risk. Third, the condom needs to be the right size for the penetrative partner's penis in order to avoid the condom slipping off or breaking. Fourth, excess air is supposed to be removed from the tip of the condom to avoid breakage. Fifth, the condom should not be past the expiry date and should be stored appropriately. Condoms are still functional past the expiry date but are more prone to breaking. Condoms that have been tampered with or left out in too cold or too warm weather can break more easily. Sixth, it is commonly recommended that lubrication be used to avoid tearing of the mucous membranes. The lubrication must, however, be compatible with the condom. Water based lubricates work with latex condoms, but oil based lubrications can break a latex condom down. And seventh, as a risk reduction strategy it is sometimes recommended in community education settings that the top pull out of the bottom before ejaculating even when a condom is being used, just in case the condom has broken or slipped off and also to avoid semen spilling out during withdrawal. Due to all of these nuances, protected anal sex, though by far one of the most effective strategies for avoiding HIV transmission between men who have anal intercourse, is considered a low risk sex act. Using a condom does not absolutely eliminate the potential for HIV transmission, especially since condoms are often used incorrectly (Sanders, Yarber, Kaufman, Crosby, Graham, & Milhausen, 2012).

Until now I have been discussing sexual relations where the HIV status of one or more partners is unknown or cannot be confirmed. However, there are strategies that are based on partners knowing the *actual* or *perceived* HIV statuses of everyone in a sexual relationship that can help to reduce risk. These are termed *seroadaptive strategies*. Grace et al. (2014) have scoped the scientific literature and have outlined five major seroadaptive strategies.

The first seroadaptive strategy is *serosorting*. This is when sexual partners select only to have sex with partners with the *same* HIV status (for example, an HIV-negative man only has sex with other HIV-negative men, or an HIV-positive man only has sex with other HIV-positive men). The sex may be protected or unprotected. The second seroadaptive strategy is *negotiated safety,* where partners who share the same HIV status and who are in a *non-monogamous* primary relationship may choose to have unprotected sex with each other. However, when having sex with partners outside of the primary relationship they can use condoms and practice lower risk forms of sex (for example, only oral sex). The specific details of these arrangements are negotiated between the partners in the primary relationship. I will return to the issue of negotiated safety in chapter four. The third seroadaptive strategy is *strategic positioning* and *seropositioning*. Since risk tends be to higher for receptive anal sex partners (bottoms) than for insertive partners (tops), a social actor may choose to only top (with or without a condom) when having casual sexual relations to reduce risk, regardless of the HIV statuses of his partners. Or when having serovariant sex (when HIV-negative and HIV-positive men have sex with each other), risk can be reduced (but not eliminated) when an HIV-negative partner is the top and the HIV-positive partner is the bottom when no condoms are used. The fourth seroadaptive strategy is *condom serosorting*. This is where condoms are only used with serovariant partners and not used in the context of perceived seroconcordant sexual relations. The fifth seroadaptive strategy is *viral load sorting*. This is when a person selects his sexual partners based on their viral load. *Inverse serosorting* is a term used when partners serosort for partners with the *opposite* HIV status. For example, an HIV-negative man may seek to only have sex with HIV-positive men who have undetectable viral loads. The benefit of this strategy is that the HIV status of the positive partner can be confirmed and he is not likely to be infectious. When an HIV-negative man seeks out only other HIV-negative men (traditional serosorting), he is also likely to meet men who cannot confirm their HIV statuses and may be in the acute infection stage and thus extremely infectious.

In addition to these strategies, gay men can choose to be monogamous, where they only have sex with one partner whose HIV status can be confirmed and with whom safer sex has been negotiated. Two HIV-negative men in a monogamous relationship where no infidelity has occurred cannot transmit HIV to each other. When men primarily have sex within the context of monogamous relationships, but change partners over time, this is termed *serial monogamy*. Monogamy and serial monogamy are only effective strategies when HIV statuses are confirmed. If a man enters into a monogamous relationship having just contracted HIV, he can potentially infect his new monogamous partner.

Individuals can also create specific sexual arrangements with certain lovers or friends, commonly known as *fuck buddies*. In these arrangements an individual will have one or more friends/acquaintances with whom he regularly has sex with (the relationship may just be sexual in nature or there may be other social components) and where the terms of safer sex, and possibly HIV statuses, have been confirmed. Sex that happens outside of the context of monogamous, romantic relationships, with fuck buddies or other casual partners, is colloquially referred to as *hooking up* or having a *hookup* (Kalish & Kimmel, 2011). As the interview data presented later on will highlight, some men may also choose to wear condoms in all instances of anal sex (regardless of the presumed or known HIV status of the sexual partner) or may avoid having anal sex.

All of the above information so far can be combined in different ways to create a particular *safer sex strategy,* a risk reduction arrangement that satisfies a social actor's sexual desires. For example, someone may select only to have oral sex when hooking up. Someone may only have anal sex when in a monogamous relationship. Someone may only bottom when in a monogamous relationship, but may top when having casual sex. Someone may decide that regardless of the relationship they will always use condoms. There are numerous combinations.

With all of these arrangements, an accurate awareness of one's HIV status and an awareness of the HIV statuses and viral load levels of one's sexual partners are essential for effective prevention. Thus safer sex HIV prevention is closely linked to health maintenance and biomedical technologies, the topics of the next two sections.

Health Maintenance and HIV Testing

HIV testing services vary throughout the country. An individual can get tested at his family doctor or at a walk-in clinic. Depending on the onsite services available, a social actor may have to go to another location to draw blood. HIV tests from family physicians do not normally come with pre-test counseling and are not anonymous (i.e. there is a permanent record of being tested in one's medical file). The results can take two to three weeks since the collected blood is sent to a provincial lab. Individuals may have to return back for another appointment to find out their results or may be contacted when their results have returned (usually only in the case of a positive result). Every clinic has a different arrangement.

Another option is to get tested at a specialized sexual health clinic. These can be located in medical centres like the CLSC Métro in Montréal. Other clinics that do testing in Montréal include Head and Hands (which has limited spaces available and thus uses a lottery system), L'Actuel and RÉZO. In Toronto, the major sexual health clinic servicing gay and queer men is the Hassle Free located in the Gay Village. Testing is also provided on site at gay male bathhouses (i.e. saunas where men have sex and socialize). There are also Public Health of Ontario sexual health clinics located throughout the city of Toronto and the Greater Toronto Area (GTA). Most of these clinics offer anonymous testing (no record is taken of the test) and pre as well as post test counselling. Counselling will aim to understand why a person is seeking the test, educate them on prevention practices and help them access services should they test HIV-positive (Ontario Ministry of Health and Long-Term Care, 2008). If a person does test HIV-positive, he will be asked to provide his name as he goes in for additional tests and is linked up to services.

Most of these specialised sexual health clinics offer the *rapid HIV test* (Tooley, 2010). A rapid test draws a small amount of blood from the patient, usually from the finger. The tester and/or nurse then mixes the blood with several fluids that will show whether or not the blood is reactive. The results appear within a minute and can be done in front of the at-risk patient. Thus instead of waiting two weeks for a result, a person can find out his HIV status in a few moments. If the test is not reactive, it indicates that no HIV antibodies have been found in the blood sample. If the test is reactive, it indicates the possible presence of HIV antibodies (thus indicating a potential HIV-positive status). More blood will then be drawn and sent in to the provincial labs to confirm the results. In rare instances, it is possible for someone to receive a *false positive* from a rapid test. The full blood test will determine with certainty whether or not a patient is HIV-positive.

Several at home testing kits have been developed and are currently available in US markets. These tests use a person's saliva to check for the presence of HIV antibodies. Though several pilot programs have existed in Canada, including those run through research teams at McGill and RÉZO, none of these kits have been readily available on the Canadian market.

One of the most important things to remember is that most testing services only offer *antibody testing*. This includes both when blood is drawn and sent to the provincial lab (a traditional test) and when one does a rapid HIV test. This means that an HIV-negative status can only be confirmed *after* an individual has passed the three-month window period after a potential exposure to the virus. Though, as mentioned above, there is evidence to suggest that an HIV test can provide an accurate result after just 22 days for most patients. Indeed, the window period can be greatly reduced with higher quality assays (e.g. fourth generation antigen and antibody tests), and the communication of the three-month window period may reflect a more conservative public health view of effective risk management (Taylor et al., 2015). However, despite this, given the current set-up of testing in Canada, a person may test HIV-negative even though they are living with the virus and are highly infectious since they are in the acute infection phase. Viral load testing is not readily accessible in Ontario and Québec for gay men who have not already had an HIV-positive diagnosis. This test would be able to detect the presence of HIV in the blood sooner, but it is more costly.

Many of the HIV prevention strategies listed above require one to confirm the HIV statuses of the partners involved. However, it is often difficult to absolutely confirm the HIV-negative status of those who are regularly sexual active given current testing options. For example, if someone's safer sex strategy involves having anal sex only with HIV-negative confirmed men, this means that he cannot have anal sex with someone until after three months have passed since his prospective sexual partner has last had sex (including lower risk sex like fellatio) with another partner. Depending on the person, such a strategy might not end up being feasible.

The recommended number of times gay man should test for HIV a year ranges (i.e. normally either every 3 or every 6 months) depending on how sexually active he is, his sexual practices and the number of different sexual partners he has per year (Ontario Ministry of Health and Long-Term Care, 2012).

Biomedical Prevention

Biomedical prevention refers to the role current HIV medications have in preventing new infections. As discussed above, HIV-positive men on treatment can have their viral loads reduced to the point that they are considered to be undetectable. Consequently, they are not likely to be able to transmit the virus to HIV-negative men. Both HIV-negative men and HIV-positive men can incorporate this information into their safer sex strategies. For example, an HIV-negative man can choose to have condomless anal sex only with HIV-positive partners who are undetectable, instead of having condomless sex with HIV-negative men who may not be able to confirm their HIV statuses and who are thus experiencing serostatus uncertainty.

Along with taking their medication, HIV-positive men must routinely get a viral load test to ensure that their viral load remains at undetectable levels. Viral load levels can change over time, like during a moment when the immune system is compromised by another virus or infection. Further, while reaching undetectability has become the biomedical goal for most HIV-positive men and the HIV prevention field as a whole (more on this in the next chapter), some HIV-positive men, for a variety of biological factors, have a harder time reaching undetectable levels even when taking medication (Adam, 2011). *Undetectability is not guaranteed for all HIV-positive men on treatment*.

Treatment as Prevention is a biomedical paradigm that looks at these dynamics at the population level. The British Columbia Centre for Excellence in HIV/AIDS is responsible for advancing this paradigm globally (Montaner et al., 2010). The treatment as prevention model argues that if you reduce the level of *population viral load*—that is, the total amount of HIV present in a given population—by putting all of those living with HIV on medication, you will lower the number of new infections in the population as well. Specifically, this translates into encouraging more HIV testing and fostering rapid access to treatment for those who test positive—what is sometimes referred to as a "seek-test-treat" strategy (Nosyk & Montaner, 2012; Sorensen et al., 2012).

HIV medications can also be taken by *HIV-negative men* to prevent infection. There are two ways this can be done: *post-exposure prophylaxis (PEP)* and *pre-exposure prophylaxis (PrEP)*. PEP involves taking HIV medication *after* a potential exposure to HIV in order to avoid a permanent infection. PrEP involves taking HIV medication *before* a potential exposure to HIV to avoid a potential infection.

After an exposure to HIV (for example, if the condom broke during serovariant intercourse) an HIV-negative man can seek PEP either by going to a hospital emergency room, a specialized sexual health clinic (where he will also receive counseling) or by going to a family physician. In order for PEP to be effective, this at-risk man must start his PEP treatment within 72 hours of exposure and ideally within 24 hours. If this initial 72 hour period has expired, he will most likely be declined a PEP prescription (Wilton, 2011). The man will also be assessed to see if he is indeed at-risk enough to warrant a PEP prescription (usually higher risk forms of sex). He will also be screened to see if he currently tests positive for HIV antibodies (this would not pick up the potential recent infection under question, but an older infection).

If he tests negative and is in the 72 hour time frame, he may be given a PEP prescription. PEP is a high dose of HIV medication (there are different combinations that can be prescribed) that is taken daily over the course of the month or 28 days. The side effects of PEP (especially when some older HIV medications are prescribed) tend to be quite severe and include diarrhea, vomiting, nausea, fatigue and anal sores (from diarrhea). These side effects can last for a couple of weeks. They tend to lessen over the course of the month. Newer regimes of PEP have reduced side effects.

After finishing his PEP prescription (the end of a month), the at-risk man must wait the duration of the full window period (so another two months after finishing his PEP prescription) to get another HIV test to see if he has contracted HIV. While PEP is generally considered to be a highly effective strategy at avoiding seroconversion after a potential exposure, it has been difficult to calculate its effectiveness in clinical trials and it has been stressed that it is not a cost-effective prevention method (Byrant, Baxter & Hird, 2009; Cohen, Gay, Kashuba, Blower &

Paxton, 2007; Kahn et al., 2001). Indeed, PEP does not always work. It is possible to have taken PEP and to still contract HIV. It is also possible to take PEP when one believes that they have been exposed to HIV, but in fact, they have not. PEP costs between $900-$1500 depending on the drugs prescribed and the location. This prescription can be covered by personal medical insurance and by some provincial health plans. In Québec, PEP costs are usually covered by the Régie d'assurance medicaments du Québec (RAMQ) (Christopher, 2012). It is one of the first provinces to offer such support. Though in chapter six I will highlight specific situations where this plan does not work out for all gay men living in Québec. During the transition to the biomedical era of HIV prevention the cost of PEP was not covered by the Ontario Health Insurance Plan (OHIP), at least by those who have been exposed to HIV through consensual sex (Beneteau, 2009). PEP is also offered to those who are exposed to HIV through occupational hazards (e.g. nurses and accidental needle pricks) or to victims of rape. In these instances, it is covered by occupational health insurance and provincial insurance plans.

With PrEP, sexually active HIV-negative gay men take HIV medication daily (in particular, the drug Truvada). The logic behind this is that if the HIV-negative man is exposed to HIV from a sexual partner, the HIV medication circulating in his system will most likely prevent HIV from becoming a chronic condition. However, this requires that the medication be taken daily as prescribed. Along with potential side effects associated with HIV mediations (though the actual prevalence of notable side effects experienced from Truvada as PrEP may be questionable), one major concern is the potential for an HIV-negative man on PrEP to actually develop a chronic HIV infection (perhaps because he was not taking his medication as prescribed) and then develop a drug resistance to Truvada, which would make managing his chronic HIV infection much more difficult (Wilton, 2015b). Consequently, men on PrEP must be tested regularly, usually every three months (possible up to six months) for HIV. Current studies (Grant et al., 2010) indicate that PrEP is quite effective at preventing chronic HIV infection for those who take it daily as prescribed. This means that some HIV-negative men may choose PrEP as their chief risk reduction strategy, especially if they prefer to have condomless, serovariant sex. However, PrEP does not protect against STIs. One concern often raised about PrEP is that due to its high degree of effectiveness at preventing HIV transmission it will lead to the abandonment of condoms among gay men which could increase the transmission of STIs (see more about the negative effects of this below) and, in rare cases where HIV is transmitted among

PrEP users, could lead to an increase in transmission of drug-resistant strains of HIV (Kempner, 2015).

The Federal Food and Drug Administration in the United States approved Truvada as PrEP in 2012. During the time period under consideration for this dissertation, the transition to the biomedical era of HIV prevention, Truvada had not yet been approved for PrEP in Canada. However, it could be prescribed "off label"—this is when an already legally approved drug is prescribed for another purpose other than that which it was originally intended (in this case, Truvada may be prescribed for the prevention of HIV instead of for the treatment of a chronic HIV infection). In order to get a PrEP prescription a man must first test negative for HIV. He must then negotiate with his doctor, presenting himself as being at high enough risk to warrant the treatment. This also means that the doctor must be aware of using Truvada as PrEP and how to care for a patient on PrEP. Thus this doctor will most likely be directly networked to the HIV prevention field. A PrEP prescription will cost around $1000 a month, though it can be covered with good personal medical insurance. During the transition to the biomedical era of HIV prevention, Truvada was not covered by Ontario health care plans for the use of PrEP. More recently in Québec, the RAMQ has covered the costs of Truvada prescriptions for PrEP.

Another option to access PrEP includes joining clinical trials that are currently testing its efficacy. One example includes the Ipergay study in Montréal (http://www.ipergaymtl.com).[10] This study examined "on-demand" or episodic PrEP use (Wilton, 2015b). This is when two pills of Truvada are taken simultaneously two to twenty-four hours before sex, then one pill is taken again twenty-four hours after the first dose, followed by a final pill twenty-four hours after the second dose. Getting PrEP this way involves participating in the full study process (including regular testing for HIV and STIs and completing surveys and assessments). Ipergay admitted HIV-negative men (and other MSM) that had condomless anal sex with at least two partners in the two months prior to participation. In other words, a participant must have presented himself as being at high risk in order to join the study.

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[10] Ipergay Montréal is currently closed for further participation. Those interested in the study will now be directed to REZO Santé (http://www.rezosante.org/), the community organization associated with the program.

Other STIs and Drug Use

As already mentioned, STI prevention is important to consider in the context of HIV prevention, since the presence of STIs, in both the oral or genital regions, can increase the potential risk of HIV infection.

Using condoms can prevent STIs. However, STIs are far easier to acquire than HIV, often only requiring minimal bodily contact with genitals and genital fluid. Over the last decade we have seen a substantial rise in transmission rates for most STIs in gay male populations, especially with syphilis (Leblanc, 2013; Totten, MacLean, & Payne, 2015; Wilton, 2015d).

Many STIs do not produce any symptoms or present minor symptoms. This is especially true among men. If the infection is in one's anal cavity it may also be very difficult to notice. However, left untreated many STIs can cause severe damage in the long term, especially to those living with HIV who have compromised immune systems that may allow the STI to progress rapidly. In other words, STI prevention has significant implications for both HIV-negative and HIV-positive men.

Many of the most common STIs, such as syphilis, gonorrhea, chlamydia and pubic lice are currently treatable and can be eliminated from the body. Though recently there have been some concerns raised over the development of an aggressive antibiotic resistant strain of gonorrhea (Armstrong & Cain, 2015). Those who have been potentially exposed to any of these STIs can ask to be tested from the same places where they would seek HIV testing. Syphilis requires a blood sample. Usually urine samples and sometimes a urethral swab are taken for genital gonorrhea and chlamydia. An anal swab is taken to trace these STIs in the anal cavity.

Herpes Simplex Virus (HSV) is currently not curable. There are two common strains of this virus (HSV-1 and HSV-2). HSV is an extremely common virus among both heterosexual and homosexual populations. Due to the sores it produces, it generates an apt opportunity for the transmission of HIV both orally and genitally.

The Human Papillomavirus Virus (HPV) is one of the most common forms of STIs among both heterosexual and homosexual men and women (Public Health Agency of Canada, 2011). It can either show no symptoms or appear as genital warts, which can then be treated. HPV can lead to anal cancer (as well as cervical cancer among women). This is especially more likely for men who are living with HIV. In Canada, during the transition to the biomedical era of

HIV prevention, there were vaccine programs in place to vaccinate young girls against HPV, yet no programs to vaccinate young boys (Public Health Agency of Canada, 2011). If a gay man wishes to receive the vaccine he would have to pay out of pocket or through personal medical insurance.[11]

Hepatitis refers to a series of liver diseases that can be transmitted, among other ways, through sexual activity. There are currently vaccines for Hepatitis A and B, the former of which is given free to gay men in some provinces like Ontario and Québec upon request and the latter of which is a mandatory vaccine given to all children in grade 7. Individuals who may be exposed to the viruses frequently can request a booster shot.

Hepatitis C does not have a functional vaccine yet. It can be treated, but original treatments have very severe effects on the body and are often difficult to manage. More effective treatments are now available, though the cost ($55,000-$80,000) makes them highly inaccessible for most (Dunn, 2015). Throughout the 2000s, HIV/AIDS organisations in Canada started to integrate Hepatitis C information and services into their work due to the increase in *co-infections* (when someone is infected with two or more viruses, such as Hepatitis C and HIV, simultaneously). This is mainly a condition among intravenous drug using populations (IDUs) since the sharing of needles is a common way for both of these viruses to be transmitted. The transmission of HIV and Hepatitis C can be eliminated completely by providing IDUs with clean needles and by IDUs not sharing used needles and drug equipment.

The Canadian AIDS Society (2004) presents anal intercourse as a low risk act for Hepatitis C transmission and fellatio as a negligible risk act. At this point, the actual risks of Hepatitis C transmission through gay sex are fairly ambiguous and there is not substantial work going on encouraging non-IDU gay men to seek Hepatitis C testing. Using shared equipment to snort drugs (like cocaine, speed, meth, MDMA—all common party drugs used by gay men) is also low risk for Hepatitis C. There is a theoretical potential for HIV to be transmitted through sharing this equipment as well, since blood may exit and enter through the nasal cavity. Though the actuality of this occurring is open to debate, harm reduction education generally discourages the sharing of all equipment for both Hepatitis C and HIV.

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[11] In 2016 gay men under the age of 26 became eligible of having the costs of Gardasil, the HPV vaccine, covered by provincial health insurance in Ontario (The Canadian Press, 2016).

Relevant HIV Risk Management Policies

In order for us to best understand the link between epistemic, social and political and experiential uncertainty, it is necessary to discuss two sets of nationwide policies related to HIV. These include the criminalisation of HIV non-disclosure and the blood donation ban for gay men and other MSM. These policies are integral to understanding the social and political dimensions of serostatus uncertainty. The first legal policy aims to discipline HIV-positive persons who are considered to not be effectively managing risk. The second set of public health policies aims to protect population health by preventing the spread of HIV-positive blood into the blood supply. These are both examples of risk management practices that aim to minimise the threat of uncertainty at the social level. They operate as governing practices that then come to have an effect on how gay men self-regulate, either through serostatus disclosure practices or declining blood donations. I am introducing these policies in this chapter since they are absolutely integral components to prevention discourse in Canada during the transition to the biomedical era of HIV prevention. They play a substantial role in how gay men conduct their prevention practices, how they understand serostatus uncertainty and how HIV risk management is politicised. As such, I will frequently return to these policies in my review of the HIV prevention field in the remaining chapters.

The first risk management policy to discuss is the criminalisation of HIV non-disclosure. In 1998, the Supreme Court of Canada ruled in *R. v. Cuerrier* that HIV-positive men and women must disclose their HIV status to their sexual partners if the sex involved would place their partners at a "significant risk of bodily harm" (R v. Cuerrier, 1998). HIV transmission and infection do not need to occur for an HIV-positive person to be charged and prosecuted. Under the law, non-disclosure of HIV status in the context of a "significant risk" encounter is considered to be a form of fraud which nullifies any other forms of sexual consent (Canadian HIV/AIDS Legal Network, 2012; Mykhalovskiy, 2011). HIV-positive persons have been convicted with the most severe offenses available in the Criminal Code for acts of non-disclosure, including first-degree murder and aggravated sexual assault.

Over the last two decades there has been a steady increase in charges and convictions related to HIV non-disclosure, with Canada being a world leader in legal cases against HIV-positive persons (Mykhalovskiy, 2011). A significant number of cases have been among heterosexual men and women from ethno-racialized minority communities. However, given the prevalence of HIV among gay male populations, the issue of HIV non-disclosure and the law has been a fairly contentious issue in gay male communities.

For many years, it was unclear as to what exactly constituted a “significant risk.” It was not clear, for example, if oral sex or protected intercourse (vaginal or anal) posed a significant risk of bodily harm (Mykhalovskiy, 2011; Mykhalovskiy, Betteridge, & McLay, 2010). It was also unclear how new information on undetectable viral load would be factored in to assess these legal cases.

In 2012, two Supreme Court rulings, *R v. Mabior* and *R. v. D.C,* brought some clarity to the issue. Now HIV-positive persons would only have to disclose their HIV statuses in instances where there was a “realistic probability” of transmission (Canadian HIV/AIDS Legal Network, 2012). Legally, sex *not* considered to pose a realistic probability of transmission so far only refers to *vaginal* intercourse where *both*: (1) a condom is used *and* (2) the HIV-positive person has an undetectable or low viral load. If any of these two criteria are not met, the sex is considered to pose a realistic probability of transmission and the HIV-positive person must disclose his or her HIV status prior to sexual contact. These two Supreme Court cases did not provide any clarity either for homosexual sex or oral sex.

The criminalisation of HIV non-disclosure remains a divisive issue within HIV/AIDS activist circles and the critical social science field in Canada. I have introduced this policy in this chapter as it has played a vital role in guiding conversations on HIV risk management and responsibility during the transition to the biomedical era of HIV prevention. Understanding the nuances of this policy as outlined above will be necessary for us to better comprehend the link between epistemic, social and political and experiential uncertainty in the HIV prevention field. I will explore the divisive politics related to the criminalisation of non-disclosure in much depth in chapters four and seven.

The second set of policies I shall discuss here refers to blood donation. In Canada, blood donation is handled by Canadian Blood Services (CBS) in every province but Québec. In Québec, blood donation is coordinated by Héma-Québec. Until 2013, under CBS policy men who have ever had any sex with another man were forbidden from donating blood, regardless of their HIV status (Canadian Blood Services, 2015). The policy was adopted by Health Canada in 1992 from the Canadian Red Cross Society. This policy rule was originally implemented in the

1980s after thousands of individuals needing blood donations (such as hemophiliacs) became infected through the blood supply (Canadian Blood Services, 2015). Thus even gay men who could absolutely confirm their HIV statuses as being negative, either because they have been abstinent or because they have been in a seroconcordant monogamous relationship for a length of time, could not donate blood. Though rare, men who have lied about having had homosexual sex have been tracked down by CBS and sued for "negligent misrepresentation" (CBC, 2010).

In 2013, CBS got approval from Health Canada to alter its policy after much pressure from community groups. It now allows men who have had sex with men to donate blood if they have not had any homosexual sex within the last five years (Canadian Blood Services, 2015). This is the same policy as Héma-Québec. In other words, in Canada, only non-sexually active gay men or MSM may donate blood.[12] Recent trial clinics have opened up in Toronto that allow sexually active gay men to donate blood. However, the blood is only used for scientific experiments and not for donations. I will return to investigate this policy more closely when I examine the particular nuances of serostatus uncertainty in chapter six.

In sum, the criminalisation of HIV non-disclosure and blood donation policies are both examples of governing practices that seek to manage risk at the population level. As I investigate these policies more closely in the coming chapters, I will demonstrate how these governing practices have been greatly determined by the epistemic uncertainties of existing HIV prevention research and how they have generated additional social and political uncertainties. I will investigate how these policies mobilize particular versions of serostatus uncertainty, which then become the grounds for biological citizenship claims by both HIV-positive and HIV-negative men. In short, to understand safer sex in everyday life, we also need to understand the governing practices that address HIV prevention.

Conclusion: Behavioural and Biomedical Prevention Review

HIV is not easily transmittable. Significant quantities of bodily fluids with elevated levels of the virus must be passed from an infected person to a non-infected person for seroconversion (permanent infection) to happen. A range of behavioural and biomedical strategies can be

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[12] During the course of working on revisions for this dissertation, Health Canada once again adjusted this policy. Starting in August 2016 gay men and other MSM can donate blood if they abstain from homosexual sexual relations for a year or more (Tasker, 2016). The policy still effectively bans all sexually-active gay men from donating blood.

employed to prevent this from occurring including: abstinence, non-physical sexual interaction, condom use for oral and anal sex, limiting sex to negligible and lower risk sexual activities (like mutual masturbation and oral sex), serosorting, viral load sorting and inverse serosorting (using undetectable viral load information), negotiated safety, seropositioning, strategic positioning, condom sorting, monogamy/serial monogamy, safer sex fuck-buddy arrangements, PrEP and, as a last resort, PEP. While many of these strategies can be highly effective at preventing HIV, either individually or when combined together in different formations, they all operate as forms of risk reduction and not risk elimination, as safer sex and not safe sex.

From this perspective, all HIV-negative men who are sexually active and who engage in sexual activity considered to be lower risk or higher are to some degree at-risk—they can no longer confirm with absolute certainty that they are HIV-negative. This does not mean that they are highly likely to be HIV-positive, but simply that they cannot be certain about their serostatus at the current moment—there is a modicum of doubt. In the coming chapters I shall explore the effects of this doubt, looking at how it is negotiated and mobilized in knowledge production practices, governing practices and everyday experience. This doubt is at the core of the analysis ahead as I investigate how experts and laypersons come to moralise and politicize the experience of serostatus uncertainty. Doubt, we shall see, fuels the HIV prevention field. Consequently, serostatus uncertainty (that is, being doubtful about one's HIV status) plays a substantial role in how HIV-negative men implement their agency by modifying their sexual practices and securing their well-being. Consistently negotiating serostatus uncertainty is thus a driving force behind much HIV prevention practices, research and policy.

Indeed, serostatus uncertainty plays a significant role in how these various risk management strategies may be implemented and whether or not they prove effective for an individual social actor. All of these strategies rely, either directly or indirectly, on one's awareness of one's own HIV status—either HIV-negative or HIV-positive—and, for HIV-positive men, an awareness of viral load levels. Serosorting, as an example, can only work if both of the sexual partners know that they are HIV-negative. If there is a chance that one of the partners *might* be positive, however minimal, risk is elevated. Of course, condoms may be used to further reduce the risk. However, even in this context of minimal risk, the social actor may still be considered to technically be at-risk, to have an unconfirmed serostatus. Moreover, given the availability of current HIV testing technologies, which require a pretty sizeable window period of up to three months after a potential exposure to the virus to confirm seroconversion, it is fairly difficult for sexually active HIV-negative gay men to be able to resolutely confirm their HIV-negative status. This is particularly important since those in the acute infection phase, who may still not test HIV-positive—that is, they may still identify as HIV-negative—are often considered to be the most infectious. I will examine this dynamic closely in the next two chapters. In the forthcoming literature reviews of the HIV prevention field, I will also demonstrate exactly how various experts have simultaneously presented serostatus uncertainty as both a biomedical inevitability for all sexually active gay man and as one of the highest risk factors among gay men.

Thus to end as I started, HIV prevention is a complex form of risk management. It is one that cannot eliminate all serostatus uncertainty. Moreover, it cannot be reduced to a singular behaviour, like the use of condoms. Rather, it is a combination of different practices and the reassessment of different pieces of knowledge that are constantly changing and being debated. Having developed a basic understanding of the biomedical and behavioural aspects of HIV prevention, in the following chapter I will now employ the tools from critical studies on risk and uncertainty that I outlined in chapter one to unravel some of the social and political nuances of research on these practices. There was absolutely nothing presented above that has not been, at one point in time, a fiercely contentious issue during the transition to the biomedical era of HIV prevention. In the next chapter I will explore how these issues have been debated so that I may untangle the relationship between epistemic, social and political and experiential uncertainty.

If at times the sea of terms and options above appeared confusing to readers, we must consider how these actually take shape when implemented in everyday life and how those practising safer sex are making sense of such complexity. Indeed, despite the various nuances of HIV prevention, every day gay men across Canada continue to make their sexual choices, hookup and begin romantic relationships. And while some will contract HIV and STIs through these arrangements, many will implement strategies that will effectively prevent HIV. It is the stories of these gay men that I seek to understand in the remainder of this dissertation.

Medicine is a science of uncertainty and an art of probability.

-William Osler

Chapter Three

Unquestionably Uncertain

Biomedical and Public Health Research on Gay Men and HIV Prevention

In the previous two chapters, I examined key tenets from critical risk and uncertainty studies and offered an overview of biological and behavioural components of HIV prevention practices during the transition to the biomedical era of HIV prevention. In this chapter, I shall now apply the uncertainty triad framework that I developed in chapter one to make sense of biomedical and public health research, or ruling forms of knowledge, on gay men and HIV risk. Through this analysis I will explore the relationship between knowledge production practices and governing practices, and thus between epistemic and social and political uncertainties, in the HIV prevention field in Canada.

In this dissertation, I am principally interested in better understanding how HIV-negative gay men are affected by HIV risk and how they have managed the uncertainties associated with HIV prevention during the transition to the biomedical era of HIV prevention. However, in order to contextualise these experiences of serostatus uncertainty, I will first examine how the HIV prevention field produces and debates knowledge about gay men and HIV prevention. Indeed, in order to understand the dimension of experiential uncertainty comprehensively, it is first necessary to explore the epistemic and social and political uncertainties that help to produce serostatus uncertainty and give it its particular character during the transition to the biomedical era of HIV prevention. Social actors are not managing serostatus uncertainty within a vacuum. They are doing so in a context where numerous experts—researchers, service providers, policy makers and activists—avidly debate what constitutes effective risk management. In this chapter I will explore some of these debates and examine how the production of knowledge in the field of HIV prevention is used to govern gay men—that is, how subjects of risk turn gay men into at-risk subjects.

As first described in chapter one on critical risk and uncertainty studies, under neoliberal governance social actors are frequently turned into at-risk subjects who are monitored, researched and governed by their relationship to particular health risks and who are then expected to self-regulate in relation to these risks in order to be responsible biological citizens.

This is clearly the case with research on gay men and HIV. Knowledge about HIV risk plays a fundamental role in how we come to understand gay men's health, gay male sexuality and gay male sociality more broadly. In turn, individual gay men navigate the social world in an entrepreneurial fashion with HIV risk management as a primary strategy in the implementation of self-identity. However, as will become clearer as I sort through the established scientific literature on gay men and HIV, what constitutes effective risk management can be a highly contentious debate. This has especially been the case during the transition to the biomedical era of HIV prevention where rapidly evolving technologies and research have introduced us to new epistemic and social and political uncertainties, causing us to rethink long-established risk management strategies in a context of emerging, controversial knowledge claims. Indeed, things have remained unquestionably uncertain. The production and cultivation of this uncertainty and its role in generating at-risk subjects is the critical focus of this chapter.

Indeed, one of the key characteristics of ruling forms of knowledge production within the HIV prevention field is the tendency for various experts to harness the power of epistemic and social and political uncertainty in order to cast doubt over most of our prevention tools and to seek out at least a modicum of risk in all aspects of gay male sexual behaviour. In so doing, all HIV-negative gay men, even those who implement the most effective prevention strategies we have available, are considered to be at-risk. This means that they are meant to govern themselves as social actors who are not absolutely certain about their HIV statuses and who must acknowledge that serostatus uncertainty is both a threat to their own health and a threat to the health of their sexual communities. Gaining certainty over one's serostatus has become the primary responsibility of gay men as biological citizens in the context of the HIV/AIDS epidemic. However, this must be done under the conditions of competing knowledge claims and contradictory prevention messages. It must be done under conditions of great uncertainty.

It is the intent of this chapter to expose these contradictions and to demonstrate how ruling forms of biomedical and public health research frequently produce and cultivate uncertainty, either aggrandising or minimising the effects of epistemic uncertainty in order to achieve specific biopolitical goals. I shall closely explore how limitations in biomedical and public health HIV prevention research generate broader social and political uncertainties when translated into governing practices. This process generates a context where various experts continuously challenge the very fundamentals of HIV risk management practices. At stake in these conditions of uncertainty is the gay male social actor—the at-risk subject—whose serostatus uncertainty is consistently being modified and politicised in the wake of shifting knowledge on HIV prevention.

In other words, in this chapter I shall argue that the HIV prevention field in Canada has failed to achieve a stabilising point in its third decade. Experts have failed to reach a consensus on key longstanding and emerging prevention issues. Each sphere of uncertainty management activities—knowledge production, governing practices and everyday risk management—continually produces and/or fosters new sets of uncertainties that call into question the social practices that make up the other two domains. Uncertainty breeds more uncertainty. Conflicts about uncertainty produce more uncertain conditions. In this chapter and the next, I will closely explore this dynamic by focusing on knowledge production practices and governing practices.

With knowledge production practices, various experts debate the risks associated with the epistemic uncertainties generated by emerging biomedical research. With governing practices, various experts debate how policies, education and health services should be adjusted in the face of this epistemic uncertainty and what the broader social and political effects of these governing adjustments will be. Moreover, in the analysis below I will demonstrate how many knowledge production practices and governing practices rely heavily on the guiding assumption that a significant majority of gay men will ignore or minimise the epistemic uncertainties associated with emerging biomedical evidence in order to justify additional sexual risk-taking. Indeed, the very epistemic uncertainties produced by biomedical and public health expertise often become utilised by scientists to make sense of gay male sexual behaviour, and in particular, to develop hypotheses about condomless anal sex.

In sum, in the absence of expert consensus on key prevention issues, the social practices that make up the HIV prevention field remain fuelled by uncertainty—seeking it, producing it, exaggerating it, minimising it, controlling it and politicising it. In order to investigate the production and cultivation of this uncertainty, this chapter will review literature in two broad research domains: (1) risk surveillance and assessment literature and (2) risk factor research. Following institutional ethnography (IE), these two branches represent ruling forms of knowledge in the field of HIV prevention science and are comprised of mainstream evidence-based research that fit in neatly with the mandates of public health that I first described in the introduction to this dissertation. To best understand these research domains I will apply the uncertainty triad framework developed in chapter one. I will also periodically draw on specific concepts and analytical tools from the different schools of thought on risk and uncertainty to add analytic nuance.

In this chapter, I will focus specifically on answering the questions from the first two aspects of the uncertainty triad framework. The first set of questions refers to knowledge production practices: (1) What types of knowledge are being produced about a particular threat and/or preventive action against that threat? (2) How is epistemic uncertainty about this threat or preventive action being addressed? The second set of questions refers to governing practices: (1) How are governing practices responding to a particular threat and to emerging information about prevention practices?; (2) How are the social and political uncertainties associated with these governing practices being handled?; and (3) How are social institutions responding to and politicising shifting social practices? Thus beyond a review of the scientific and scholarly literature, the following will also examine documents from community organisations, media and public health offices, as a way to demonstrate how knowledge produced about gay men becomes used to direct services, policy and community mobilisation around HIV/AIDS. Following the language of IE first presented in the introduction to this dissertation, these various documents can be considered to be examples of ruling relations, the product of institutional activities that aim to coordinate the social world. Thus my goal below is not only to review existing literature, but also to examine different types of ruling relations that use ruling forms of knowledge to coordinate the social world in specific ways.

It is, of course, not possible to explore all HIV prevention matters of relevance during the transition to the biomedical era of HIV prevention within a single chapter. Thus while I explore a range of topics below in order to capture the full complexity of HIV prevention issues (and, most importantly, the interconnectivity between issues), this chapter focuses on a few key themes in detail to demonstrate the ways in which uncertainty plays a role in constructing at-risk subjects. Specifically, this chapter will pay close attention to the use of epidemiological statistics to problematize gay male sexuality, to epidemiological critiques over basic HIV prevention practices, and to debates around the risk reduction potential associated with undetectable viral load, including a discussion on the role of viral load in political exchanges over the criminalisation of HIV non-disclosure. Particular attention will be paid to how HIV-negative men who cannot confirm their HIV statuses are often positioned in the literature and community documents as not only *being* at-risk but also as *posing* the highest risk to others. I will also consider how epidemiological figures are used to “beat-up” the epidemic in order to create a heightened sense of urgency that makes HIV transmission among sexually active gay men seem almost inevitable, marking serostatus uncertainty as both a pervasive and highly threatening condition.

One of the main original contributions of this dissertation is a detailed review of undetectable viral load research. In this chapter, I will closely examine how debates about the risk reduction associated with undetectable viral load appear in research, policy, advocacy and education documents. Emerging information on viral load, by affecting the risks associated with serovariant sexual relations and undiagnosed men, have fundamentally altered, albeit very unevenly, perceptions about HIV risk management during the transition to the biomedical era of HIV prevention. Indeed, I argue that the transition to the biomedical era of HIV prevention can actually be best understood as a period marked by the simultaneous increase in optimism and uncertainty on the risk reduction of undetectable viral load.

A significant portion of the investigation on undetectability research will focus on the idea of treatment optimism, the epidemiological hypothesis that awareness about the risk reduction associated with undetectable viral load may lead to more sexual risk-taking among gay men. This will then lead to a discussion on AIDS optimism, the epidemiological theory that gay men who have become more apathetic to the idea of living with HIV in the context of better medications are also more likely to take sexual risks. I will return to the ideas of treatment optimism and AIDS optimism once again in the next chapter on critical social science and HIV. These theories are crucial to highlighting the link between epistemic and social and political uncertainty in the HIV prevention field. They demonstrate how assumptions about gay male sexual behaviour become integrated into knowledge production practices and governing practices. Thus in this chapter I will demonstrate how the epistemic uncertainties associated with emerging biomedical evidence often become the grounds to moralise and politicise gay male sexual practices. Through a critical analysis of several epidemiological theories I will show how epistemic uncertainty is amplified, often positioned as a threatening force that will increase sexual risk-taking and HIV incidence.

In short, below I will critically review ruling forms of knowledge within HIV prevention science, examining key works of biomedical and public health research on gay men and HIV during the transition to the biomedical era of HIV prevention. I will argue that much of this research produces and cultivates uncertainty and problematizes the subjective experience of serostatus uncertainty while simultaneously making this experience unavoidable for gay men. Through this discussion I will demonstrate how the HIV prevention field has failed to achieve a stabilising point, with each sphere of uncertainty management activities continually trying to adapt and catch up to the uncertainties posed by the other two domains. This process is not always a harmonious one. It is one fraught with epistemic, social and political tensions—with conflicts of uncertainty. My goal is to examine these tensions and highlight how epistemic uncertainties associated with HIV prevention practices become used to moralise and politicise gay male sexual behaviour.

Part One: Risk Surveillance and Assessment Research

The first set of knowledge production practices I shall explore here are risk surveillance and risk assessment research. Risk surveillance research monitors the number of new HIV cases each year and estimates the growth of the epidemic. Risk assessment research qualifies and quantifies the risks associated with variable sexual and drug taking behaviours, as well as the risk reduction potential associated with different forms of prevention. It thus determines what officially counts as effective HIV risk management. At its basis, this type of risk analysis asks: what is a risk and how much risk-taking exists within a given population? These two forms of research are directly linked since it is necessary to first qualify what constitutes an act of risk or risk management strategy in order to measure the prevalence of these behaviours in the population.

This type of research, what Lupton (1999) refers to as technico-scientific perspectives on risk, derives from the public health and biomedical sciences, and epidemiology in particular, as well as sexology based research. However, as ruling forms of knowledge within HIV prevention science, the social and political implications of this work spread far and wide throughout the field and are dissected by experts across the social sciences and in community-based organisations. The tenets of evidence-based medicine—a disposition to objective, positivistic accounts of human behaviour—guide the production of risk surveillance and assessment research. Methodologically, this research may include some qualitative and descriptive components. However, quantitative inquiry and epidemiological statistical analysis dominate.

As discussed in the introduction to this dissertation, given the epistemological supremacy of these disciplines, risk surveillance and assessment research have tremendous influence in directing our efforts within the HIV prevention field. Surveillance helps us to target our prevention efforts by showing us who is most in need of services and helping us to evaluate whether or not we are improving. In terms of risk assessment, unless epidemiology and clinical trials can prove with statistical merit that a prevention method (e.g. seropositioning or PrEP) is highly effective as a form of risk management, said method will not officially be deemed to be effective prevention in the HIV prevention field and will not be communicated as such in community based literature (that is, in prevention education that is funded by the state). Given this epistemological clout, the knowledge produced within this research domain is used to govern our response to the epidemic and ultimately to govern social actors affected by the epidemic through the creation of policies, campaigns and services. Thus returning back to our critical framework, we see here that there is a very intimate link between knowledge production practices and governing practices. Risk surveillance and risk assessment are produced because of their ability to support governing decisions. Following IE, this type of knowledge is thus a ruling form of knowledge, as it is directly intended to help organise the social world in order to respond to a threat produced by uncertainty.

The raw data behind this research domain is gathered from public health offices and HIV testing centres across the country who collect this information when working with clients seeking HIV and STI tests. The overall number of HIV and STI tests are reported, as well as the number of positive diagnoses for HIV or other STIs. Data is also gathered through large-scale clinical trials, specifically within the context of risk assessment research where the objective is to deduce the effectiveness of a risk management strategy like PrEP (for example, http://www.ipergaymtl.com). Data is also collected through paper-based surveys such as the research behind the M-Track Report, a national epidemiological overview of MSM HIV surveillance, one of the leading documents in the field (a prime example of a ruling relation) during the transition to the biomedical era of HIV prevention (Public Health Agency of Canada, 2011). The M-Track surveillance project also took dried blood samples from participants to test for HIV, Hepatitis C and other STIs. The 4,793 participants who completed the M-Track survey were recruited from gay events like Pride, community based organisations (CBOs), gay-based venues (such as bars and clubs) and bathhouses (Public Health Agency of Canada, 2011, p.2). The report studies "MSM," though a significant majority (82%) identified as gay men.

Surveillance surveys are now being administered on the Internet. For instance, the Sex Now Survey, a sexology based review of various gay men's health issues, began administering the survey online in 2007. In 2010 the survey expanded outside of British Columbia to include all of Canada (Ferlatte, Hottes, Trussler, & Marchand, 2014). Online recruitment is generally done through gay based websites (e.g. hook up websites like Manhunt or through Craigslist personal ads) as well as peer-to-peer snowballing. The Sex Now survey asks a range of questions related to sexual risk-taking within the last 12 months, including number of sexual partners, type of sexual relationships (e.g. casual, monogamous), types of sex acts performed (e.g. condomless intercourse, oral sex, etc.), HIV testing habits, prevention tactics employed and drug taking behaviour. Other key information collected includes: HIV status, demographic status, regional location, relationship status and STI history, as well questions around mental health, social support networks and access to health services. Data collected from surveys like the M-Track report and Sex Now go beyond epidemiological surveillance—quantifying sexual risk-taking and measuring rates of incidence and prevalence. By asking questions about demographic and behavioural patterns, these studies aim to understand the underlying reasons for sexual risk-taking. I will explore this type of research, which I label as risk factor research, in part two of this chapter. For now, I will look at some of the data risk surveillance and risk assessment research have produced during the transition to the biomedical era of HIV prevention.

Surveillance Data and "Beating Up" The Epidemic

Based on some current risk surveillance data, it has been estimated that in 2011 MSM made up 46.7% of all HIV/AIDS cases in Canada, with approximately 3,300 new prevalent cases emerging between 2008-2011, an 11.1% increase from 2008 estimations (Public Health Agency of Canada, 2014, p.5). HIV incidence among MSM is reported to be 71 times higher than for other groups of men (Public Health Agency of Canada, 2014). Upward to 86% of HIV-positive diagnoses among MSM occur between men aged 20-49, making younger men a high risk demographic (Public Health Agency of Canada, 2012). It is estimated that approximately 19% of

MSM, or about 1 in 5, who are infected with HIV, are currently undiagnosed (Public Health Agency of Canada, 2011). This 19% represents those whose serostatus uncertainty poses a potentially high risk of infection to others due to unmanaged viral loads and acute infection.

Following IE, it is important to reflect on the methods behind data collection to see how the social is being constructed in a particular way. This 19% figure was generated from the M-Track surveillance study. Through the collection of blood samples, researchers found that about 19% of respondents who tested HIV-positive during the study originally thought that they were HIV-negative. However, not all of those who participated in the study took the blood sample, which means that it is possible that more individuals could have tested positive. Nonetheless, if we look at where the "MSM" were recruited, namely gay venues and especially hyper-sexualised spaces like bathhouses where sexual risk-taking is known to occur at high levels (Adam 2005, 2006), from an epidemiological standpoint it makes sense that the prevalence of HIV would be particularly high. This is a fact that is explicitly acknowledged in the M-Track report. Consequently, we may wish to critically reflect on whether or not the prevalence of HIV within bathhouses, gay bars and circuit parties—including both diagnosed and undiagnosed men—matches the prevalence of HIV among all "MSM" across the country.

Indeed, what are the implications of developing statistics on "MSM" through spaces of known high-risk behaviour and applying those statistics to all categories of "MSM"? Are one in five MSM living with HIV really unknowingly infected with the virus, or is this statistic a little skewed in the interest of hyperbole? In this particular instance, it appears that the epistemic uncertainty associated with the data—that is, the lack of generalizability that stems from a narrow sampling method—is minimised in the interest of generating an exaggerated picture of risk at the population level. The serostatus uncertainty of a specific group of known higher risk takers is being used to create a public health narrative about the dangers of undiagnosed HIV infection at the population level.

To be sure, tracking HIV incidence within the context of bathhouses or other higher-risk groups is very important in order for us to understand this epidemic. However, making sense of the risks faced by all "MSM" and understanding gay men's health more broadly vis-à-vis the risks associated with particular gay male hypersexual milieus, should at the very least cause us to reflect on the generalizability of available epidemiological knowledge, especially since this knowledge has such governing power. Following Pisani's (2008) review of HIV/AIDS epidemiology at the international level, we should be aware of how such figures may be "beaten up"—not untruthful *per se*, but still hyperbolic representations of reality that are meant to provoke a heightened reaction to the HIV crisis. By minimising the epistemic uncertainties associated with epidemiological data collection and "beating up" the threat, we can create more captivating narratives about HIV risk and the dangers of serostatus uncertainty. Even incidence reporting on HIV cases among MSM is often communicated in such a way as to highlight the gravity of the situation and the continued proliferation of risk. For instance, some reports concentrate on how the HIV incidence rate among MSM is 71 times higher than among other groups of men (Public Health Agency of Canada, 2014). Other epidemiological reports focus on the 8.1% increase between 2002-2011, with there being a ten-year high incidence rate in 2011, demonstrating an alarming upward trend in HIV incidence (Public Health Agency of Canada, 2013). This is the case even though absolute case numbers do not differ that radically in different years (e.g. 593 in 2008 versus 531 in 2011). Presented with these figures, the epidemic among MSM in Canada appears to be far more stable than a matter of *escalating* concern. However, rarely will we hear that the epidemic has mostly stabilised among MSM or about epidemiological figures that suggest that the majority of gay men continue to practice safer sex (which is, indeed, another way to interpret these same figures). In epidemiological reporting, emphasis is placed on increases in incidence and the MSM who engage in sexual risk-taking.

Regardless of their accuracy, these epidemiological figures *always* serve particular agendas that we should, as critical scholars, be mindful of. It is through the development of these figures that research and programming for gay men becomes justified. These statistics operate as ruling forms of knowledge that coordinate the social world, serving as the justifications for implementing various governing practices. Indeed, these public health documents are explicit examples of ruling relations, which are meant to inform policy making decisions and service delivery. Thus they serve an integral role in securing health resources for those at-risk, as well as funding dollars for researchers studying those at-risk. These figures also get embedded in the prevention education messaging of ASOs (I will closely review some community examples in the next chapter). In particular, the figure that one in five HIV-negative *identified* gay men might be living with HIV but are currently undiagnosed and, because untreated and in acute infection, extremely infectious, has been very popular in the field during the transition to the biomedical era of HIV prevention. This statistic sends an alarming message to all sexually active gay men about how likely they are to encounter a presumed HIV-negative partner who poses a high risk of infection and it reminds gay men about the dangers of serostatus uncertainty. Indeed it sends a clear message to HIV-negative gay men that they themselves may be posing an extreme risk of infection to others. In this context, serostatus uncertainty, not being able to confirm your HIV status as negative or positive, is framed as the significant problematic driving the epidemic.

In fact, the Treatment Cascade model, a popular form of epidemiological surveillance research which tracks information about HIV-positive individuals as they move through the continuum of care from being undiagnosed, to receiving an HIV diagnosis to achieving an undetectable viral load, is based on the belief that the undiagnosed are the biggest risk to population health (Gardner, Mclees, Steiner, Rio, & Burman, 2011). Treatment Cascade research in Ontario has until only very recently argued that the main source of new HIV infections—that is, those who are "spreading" the virus in Ontario—are those who are infected with HIV but who are unaware of their status, the 19% (Burchell, 2015; McGee, 2015).[13] This continues epidemiology's long-standing concern that those who are unaware that they are HIV-positive pose the most risk to others since they are ostensibly more likely to take sexual risks than those who have a confirmed HIV-positive diagnosis (Marks, Crepaz, Senterfitt, & Janssen, 2005). Once again, serostatus uncertainty becomes the chief problematic, the issue that is fuelling the epidemic.

Following Douglas, if risk is about affording blame and responsibility to certain social actors, epidemiologists have frequently used mathematical regression models to point the finger at sexually active gay men experiencing some degree of serostatus uncertainty for being the ones fuelling this epidemic. These type of epidemiological risk statistics come to structure how we in the HIV prevention field perceive gay men as being at-risk and, in turn, how individual HIV-negative gay men are then to perceive themselves and their partners as simultaneously *being* at-risk and *posing* a risk. Regardless of the veritability of epidemiological statistics—we know they are not perfect representations of reality, that they are marred by epistemic uncertainty—what is clear is that they often paint a world of heightened risk, where all sexually active gay men pose risks to each other. This creates an unsettlingly effect where HIV risk—not the existence of the virus per se, but the uncertainty that the possibility of the virus being present produces—exists

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[13] It is now being suggested that risk may be isolated around those who have been diagnosed with HIV, but who have not yet moved into care.

within all HIV-negative identified gay men at all times. The epistemic uncertainty of epidemiological data is minimised, so that the dangers of serostatus uncertainty (or experiential uncertainty) are maximised. By minimising epistemic uncertainties, experts can generate simplified and captivating epidemiological narratives, generating moral frames that determine who is responsible for fuelling the epidemic. This dynamic will become even clearer in the next chapter when I investigate HIV Stigma a community-based education campaign that focuses especially on the dangers of serostatus uncertainty.

To summarise, epidemiological statistics can be used to "beat up" the epidemic. By minimising the levels of epistemic uncertainty behind the development of epidemiological statistics, epidemiology frequently aggrandises the threats of serostatus uncertainty at the population level. In other words, the epistemic uncertainty is minimised in an attempt to maximise the threats of the social uncertainties produced by at-risk gay men. Serostatus uncertainty is presented as a huge threat to population health, and according to selected research with men who frequent bathhouses, is a condition that is highly prevalent among *all* gay men. Uncertainty, however, becomes even more pronounced when we look at research that attempts to qualify risk reduction practices, which I shall now review.

Quantifying Risk and Risk Reduction

Of all the risk related topics researched, examining unprotected anal intercourse (UAI), or more colloquially, barebacking, is by far the issue most explored. Through various surveys and data collected from HIV testing centres, epidemiologists aggregate data on UAI. For example, the M-Track report informs us that 36.1% of respondents had UAI with their last anal sex partner and 45.9% had UAI in the six months prior to taking the survey (Public Health Agency of Canada, 2011, p.21). Data like these can be used to demonstrate the need for more education, or a worrisome trend toward riskier sex in gay male communities. Again, emphasis in epidemiological surveillance reports is often on statistical figures demonstrating the ubiquity of sexual risk-taking, despite the fact that these figures do not provide more details about the context of where these sexual acts occurred and what additional safety measures were implemented.

Historically, UAI has been considered to be a high-risk sexual behaviour in the field, with those who bareback having been unequivocally considered to be at high risk. Critical scholars, however, have argued that this reductive view ignores the important role of context and meaning in sexual exchange (a theme I shall explore in detail in the next chapter). Research has also indicated several seroadaptive behaviours involving UAI—such as seropositioning, inverse serosorting, negotiated safety and condom sorting—that can reduce risk (Grace et al., 2014; refer to chapter two for review). However, the efficacy of these practices is always open to debate. For example, while men may use seropositioning (i.e. HIV-negative partner tops and HIV-positive or status unknown partner bottoms) as a risk reduction strategy, this does not eliminate the potential for transmission through anal sex. Whether the risk that remains renders seropositioning an effective form of risk management is uncertain.

Risk assessment research has attempted to quantify the risk associated with these sexual acts. A systematic review and meta-analysis of risk literature concludes that the risk per act of unprotected receptive anal intercourse for HIV, regardless of the sex of the receptive partner, is 1.4% (Baggaley, White, & Boily, 2010). This figure is 18 times higher than the risks associated with male to female penetrative vaginal intercourse (Grulich & Zablotska, 2010). These same researchers tried to perform a meta-analysis on the literature about HIV risk and oral sex, but concluded that there was not sufficient quality evidence to provide a figure (Baggaley, White, & Boily, 2008). When it comes to oral sex we are just uncertain what the risks truly are. The epistemic uncertainties of the research process (that is, the difficulties with isolating the risks of oral sex from other sexual activities) often render our knowledge on oral sex risk too inadequate to make valid or generalizable claims.

In a longitudinal Australian study tracking seroconversions among a cohort of 1427 gay men, a similar figure of 1.43% risk of transmission was calculated for receptive intercourse when ejaculation occurred inside the anus (Jin et al., 2010). A smaller risk of 0.65% for receptive anal sex was estimated if there was no ejaculation inside the anus. For insertive anal sex, the risks were estimated at 0.11% for circumcised men and 0.62% for uncircumcised men. Receptive anal intercourse with ejaculation was considered to be double the risk than if withdrawal before ejaculation occurred and the risks associated with insertive anal intercourse was estimated to be 10 times higher for uncircumcised men than for circumcised men.

Another study tracking 2,189 "high-risk" (i.e. having UAI with multiple partners) homosexual and bisexual men living in major US cities, estimated that per-contact risk from unprotected receptive anal intercourse with an HIV-positive partner was about 0.82% and 0.27% with partners of unknown status (Vittinghoff, Douglas, Judson, McKirnan, MacQueen, & Buchbinder, 1999). The risk estimated when having sex with HIV-positive men and men with unknown serostatuses for unprotected insertive anal intercourse was estimated to be 0.06% and for oral sex 0.04%. In their study, unprotected receptive anal intercourse accounted for only 15% of all reported sexual activity by those who contracted HIV, demonstrating that lower risk practices (like oral sex or protected anal intercourse) may play a larger role in fuelling the epidemic than we initially thought.

Indeed, this is the argument put forth by a recent and controversial epidemiological modelling study in Ontario. This study set out to determine which sex acts lead to the most seroconversions among gay men and other men who have sex with men in Ontario (Remis, Alary, Liu, Kaul, & Palmer, 2014). This risk analysis was based on *estimated* figures for the number of MSM living in Ontario, the number of sex acts occurring between MSM, estimations of risk associated with different sex acts, as well as the figures for the effectiveness of condoms and the role of ART on risk reduction. Thinking in terms of epistemic uncertainty, it is necessary to remember that all of the conclusions from this study are built on approximations, thus grossly minimising the validity and generalizability of its claims.

Nonetheless, from their amalgamation of hypothetical figures, Remis et al. have concluded that 51% of new HIV infections occur during acts of protected anal sex, 33% during acts of unprotected anal sex and 16% during acts of oral sex. These findings fundamentally challenge conventional understandings of HIV risk management by placing *protected anal sex* (that is, safer sex) as the leading cause of HIV transmission in Ontario. “Though our results may seem surprising, they are actually quite intuitive. If condoms are used in a majority of sexual acts and condom effectiveness is less than 100%, it follows logically that a significant proportion of HIV infections would be due to condom failure” (p.4). The authors argue that in their calculations they actually used a rather high estimate for condom effectiveness (87.3%), but if they had used some figures which place condom risk reduction effectiveness at much lower levels (67%, a figure supported by the Centers for Disease Control and Prevention in the US), the HIV transmission figures associated with condom use would be much higher. In general, condoms are considered to be highly effective at preventing HIV, with risk reduction figures usually estimated around the 90% range. However, research has also indicated that condoms are often used incorrectly, which dramatically reduces their effectiveness (Sanders, Yarber, Kaufman, Crosby, Grahman, & Milausen, 2012).

Through their analysis Remis et al. clearly wish to signify that protected anal intercourse in the context of serovariant sexual relations or casual sexual relations where the HIV-negative statuses of both partners cannot be absolutely confirmed—that is, where there is serostatus uncertainty—is an act of risk. For performing oral sex, Remis et al. note the higher than expected estimation of associated HIV transmissions. They argue that this may be because many men rely on oral sex as a prevention practice (because of its low risk potential versus anal intercourse). Thus due to increases in oral sex acts over time at the population level, the number of HIV transmissions related to oral sex is rather elevated. To argue that up to 16% of new infections are related to oral sex is also a direct challenge to conventional wisdom in the HIV prevention field, which usually frames oral sex as a low risk act (refer to chapter two). Indeed, compare this finding to these comments made by Pisani, a former UNAIDS epidemiologists: "HIV prevention programmes don't like to tell you this, but really, if you go to the dentist regularly the likelihood of infection through oral sex is vanishingly small" (Pisani, 2008, p. 131). We thus have two different experts counting the numbers and coming to two *vastly* different conclusions. Following Pisani, the truth about oral sex is in how epidemiologists choose to "beat it."

Remis et al. are aware that their arguments are controversial and contradict established HIV prevention messaging. However, following Beck, Giddens and Douglas, this recalculation of risk and the production of uncertainty about what constitutes effective risk management—along with its moral implications—is typical of scientific risk analysis. It is also a way in which researchers solidify their expertise within the context of a risk society.

Research projects like this clearly indicate how the field of HIV prevention in Canada has failed to achieve a stabilising point in its third decade. While community education documents have long positioned protected anal intercourse as a highly effective form of prevention and unprotected oral sex as a low risk sex act (Canadian AIDS Society, 2004), this project purposely troubles this view. It deliberately aims to make the very foundations of prevention education and communication uncertain. As such, it demonstrates a lack of expert consensus on the very fundamentals of HIV prevention, a lack of symmetry between epidemiological opinion and educational material, between knowledge production and governing practices.

Indeed, this lack of symmetry is one that Remis et al. seek to remedy. Remis et al. conclude that their work proves that prevention messaging needs to do more to promote the proper use of condoms in order to avoid breaks and slippage and to remind men to use condoms at the very beginning of intercourse. These are helpful conclusions, no doubt. However, they also end their article on this note: "In addition, modifying other aspects of patterns of sexual behaviour may also be necessary. This could include reducing the number of sexual partners and selecting partners who are less likely to be HIV-infected which may in turn be related to where they are recruited (e.g. bathhouses) and type of partner (i.e. regular versus casual)" (p. 6). In other words, they advise against promiscuity, sex in hyper-sexualised spaces and serovariant sexual relations. These are positions that run completely counter to most HIV prevention education targeting gay male communities, which take a sex positive approach (I will examine some specific examples below). Whether or not we agree with the accuracy of their epidemiological figures, we should be aware that these risk assessment statistics are being used to challenge safer sex practices and sexual expression within gay male communities. Safer sex is no longer safe. The goal of this epidemiological research has been to cast doubt over the risk management strategies that gay communities have been communicating as the most effective for decades. The objective has been to produce social and political uncertainty, to challenge our current governing practices (particularly our education strategies) on HIV prevention.

In a parallel fashion, this project seeks to aggrandise the threat of serostatus uncertainty, by reminding us that those who practise safer sex are not safe. In fact, from this point of view, they are perhaps more likely to have contracted HIV. Thus as a form of knowledge production, the goal of this project has been to problematize the social practices that make up the other spheres of uncertainty management. In so doing, sexually active gay men, even those implementing long established forms of HIV prevention, are further constituted as being at-risk and consequently need to be governed as subjects whose serostatus uncertainty threatens population health. From a governmentality perspective, the broader goal of this epidemiological study is to create a context where social actors will self-regulate in order to manage serostatus uncertainty. According to the authors, they can best do this by reducing sexual partners, avoiding serovariant sex, avoiding oral sex and not relying exclusively on condoms. Or, framed differently, HIV-negative gay men should strive for seroconcordant monogamous relations.

Everything else is a risk.

All of the epidemiological and biomedical risk analysis I have examined so far can be critiqued on several interrelated fronts. First, these numbers are speculative. They are derived from epidemiological calculations that often use data collected from multiple studies, each with their own imperfect designs and limitations, which hinder the generalizability of their claims. Numerous assumptions are made about the risks associated with particular sex acts, risk management strategies and the number of at-risk individuals within a population. While there is no doubt a commitment to rigour behind this work, the final numbers are still just hypotheses that are limited by the quality of the data, the samples surveyed and the comparability of different data sets. Different adjustments to the mathematical models used, or slight derivations in the risks figures imputed can produce vastly different results and drastically shift how we think the epidemic looks like and where risk is located.

As an example, Remis at el.'s study rests entirely on estimating the number of gay or sexually active MSM in Ontario based off of census data and the number of sex acts between them. While educated guesses can be made, these are entirely speculative figures since we have no way of resolutely confirming how many different acts of homosexual sex occur in a single year. For this study the final projections for the number of sex acts were derived from multiple sources including the data behind the M-Track report (Remis et al., p.2). I already argued that this project had a tendency to focus on highly sexually active men. Projections were also based from other studies that also relied on similar simulation techniques (that is, estimates based on other estimates) (Phillips et al., 2013). Other figures came from projects that can be considered incredibly dated from an epidemiological perspective and derived from geographic locals like New York City, where population size and cultural differences could arguably dramatically skew information on the number of sex acts between men (Morris & Dean, 1994). All of the final projections were selected to fit within the ranges of the established scientific literature and to turn out a number that corresponded to the estimated incidence rates for 2009, which was positioned at 693 cases of seroconversion. As discussed above, incidence numbers actually remained below 600 from 2008-2011. There is no denying, then, a clear tendency in Remis et al.'s study toward exaggerating the number of sex acts and sexual risks taken among MSM.

Second, we can question whether or not these studies can numerically capture the complexity of sexual practice (Adam, 2011). For instance, the most accurate way to statistically measure the risk associated with a single act of insertive unprotected anal intercourse would be to calculate the rates of seroconversion in a sample of gay men who have only had one act of insertive unprotected anal intercourse. In reality, finding such a sample would be nearly impossible. Further, many gay men's sexual practices include both insertive and receptive anal sex as well as oral sex, further complicating the matter.

Third, though risk assessment figures help us to understand variance of risk between sex acts, how one might actually interpret and use this information during sex remains somewhat ambiguous, since HIV infection is either something that happens or doesn't (Adam, 2011; Wilton, 2012). This is also true of the descriptive categories—negligible, very low, low, moderate, high, very high, etc.—which, as I demonstrated in chapter two, is often how risk is communicated in prevention education. For example, performing unprotected oral sex is often presented as a low risk act that is quite unlikely to result in HIV transmission. At the population level, this holds true—a very low number of people will contract HIV through oral sex every year in relation to other risk behaviours like UAI. However, for the social actor who does contract HIV by performing oral sex, this categorisation is meaningless—oral sex was an absolute risk that led to HIV transmission.

Furthermore, as I first discussed in chapter one, and as will become exceedingly clear when I move on to examining the interview data, at the everyday level, risk management always includes a subjective component where at-risk social actors perceive the severity of a risk based on their current social position, available knowledge and tolerance to serostatus uncertainty (CATIE 2015a; Wilton, 2012). For some social actors, simply labelling a sex act as a risk act may be sufficient to dissuade them from partaking in a given activity; risk means that a particular activity is dangerous and should be avoided. This can create an overly vigilant form of risk management, which might have detrimental consequences (for example, it might inhibit a social actor's sexual choices and relationships). For others, numbers such as 1.4% for unprotected anal sex, which looks like a relatively low figure, might be interpreted as there being very little or no risks associated with this particular sex act, even though unprotected anal intercourse is normally qualified as high risk (CATIE 2015a; Wilton, 2012). Despite the small figure, the risks associated with anal sex have been large enough to fuel this epidemic for three decades, demonstrating how numbers can be highly misleading.

As a CATIE post on this issue highlights, risk statistics pose a fundamental challenge to service providers who somehow need to communicate the nuances of these figures to at-risk clients who are seeking clear, easy to process information (Wilton, 2012). At-risk individuals may want to know, simply, if a particular activity is safe—that is, if there is no risk involved. However, it is usually impossible to eliminate at least a modicum of risk for HIV and STIs within the context of sex between men. When it comes to sex acts between gay men there is always a degree of uncertainty. Even when the figures remain quite low, social actors need to be cognisant that it is certainly not impossible to contract HIV. And as we have just seen, epidemiologists purposefully seek to find risk and thus to add uncertainty to all sexual and prevention practices between gay men, guaranteeing that from an official biomedical perspective, nothing is completely "safe." There is always some doubt and sexually active gay men are always, to some degree, at-risk.

Fourth, these epidemiological statistics and categorisations are not objective or politically neutral figures, as they are used directly to influence policy and programs, consequently shaping reality (Namaste et al., 2012). Following the language of IE, we must consider these forms of knowledge as ruling forms of knowledge, as information that is meant to organise the social world. For instance, in arguing that most HIV transmission happens within the context of protected anal sex, Remis et al. were not enthusiastically supporting barebacking as a form of risk management and sexual expression. Throughout the field, Remis was known for being an avid supporter of the criminalisation of HIV non-disclosure (Blackwell, 2009). In light of this knowledge, his research can be seen as arguing that sex between men is a risky act: period. While I could only speculate here, one can assume that this type of research could be used to argue why condom use in the context of serovariant sexual relations—which Remis et al. argue poses a high risk to the population—is not sufficient grounds to legally justify the non-disclosure of one's HIV-positive status. Importantly, this is not an argument from a fringe scholar, but from one who, before his recent passing, had a substantial ability to influence the development of policy, programs and the direction of research in Canada, especially in Ontario. Even if we disagree with the claims being made in Remis' work, these are still claims that have extraordinary epistemological clout in the HIV prevention field given his role as a scientific leader. Thus the social and political uncertainty his claims bring to our conventional understandings of HIV prevention (namely, condom use is the best mode of risk management) can be critiqued, but not necessarily ignored.

The epistemic uncertainties associated with research on oral sex also generate social and political uncertainties that need to be understood. Translating research findings on oral sex poses significant challenges for us, as we have to determine how best to organise education and services given ambiguous and insufficient data. As an example, the placement of oral sex as a "low risk" act within the Canadian AIDS Society's *HIV Transmission: Guidelines for Assessing Risk* that I discussed in the last chapter, was not a politically neutral choice (CAS, 2004). No doubt, qualifying the risks associated with oral sex has been one of the most debated topics in the field since the beginning of the epidemic (Roberts, Kippax, Spongberg, & Crawford, 1996). Studies like Remis' certainly argue that HIV incidence numbers from performing fellatio at the population level are not insignificant. Nonetheless, most empirical studies on gay male sexuality, including this dissertation, will demonstrate that the use of condoms for oral sex among gay men (and among heterosexuals as well) is exceedingly low and that many gay men may select to have oral sex over anal intercourse as a sensible form of risk reduction.

Thus defining oral sex as a "low risk" act operates as a way to protect a community standard of safer sex practice. Following Douglas, what serves as appropriate or inappropriate risk-taking will always be determined in relation to a community standard. Consequently, community members who were involved in the making of the *Transmission Guidelines* considered the placement of oral sex as "low risk" to be a political victory of sorts. If we know that people are, in general, not going to use condoms for oral sex, framing unprotected oral sex as a risk act without any other qualification creates an undesirable dissonance between prevention education and the everyday sexual practices of social actors. This is not advantageous for either health care professionals or those at-risk. Framing oral sex as a "low risk" act thus serves as an imperfect (political) compromise. Importantly, the CAS' *Transmission Guidelines* is a prime example of a ruling relation. It is a widely distributed document in the field used to help service providers communicate HIV knowledge to their clients. Thus all across Canada performing oral sex is being framed and communicated as being "low risk" despite that fact that experts aren't in agreement about what this actually means and what the broader social implications (i.e. incidence rates) of unprotected oral sex may be.

Indeed depending on the institution in question, oral sex may be qualified differently (i.e. “low risk,” “moderate risk,” “risk”). For instance, the Public Health Agency of Canada’s (PHAC) website “Are You At-risk?” (2012) says that an individual may be at-risk if they have ever had unprotected sexual intercourse, including vaginal, anal or oral sex. There is no distinction made about the variable risks among these sex acts. This is not because PHAC is unaware of these distinctions. However, at the biopolitical level, their goal is to make individuals cognisant of risk and to prompt at-risk subjects to act as good biological citizens who seek HIV testing and take preventive measures. They wish to encourage a degree of risk aversion among members of the population and for members of the population to be aware of the dangers of serostatus uncertainty. As a representative of the state, PHAC’s interest is not the preservation of sexual expression, or to factor in the practicalities of prevention in everyday life. They want to encourage testing to protect population health.

This approach differs substantially in the context of community-based education which need to reach gay men more pragmatically, such as CATIE’s and the AIDS Committee of Toronto’s (ACT) education pamphlet “Use Your Head While Giving It” (AIDS Committee of Toronto, 2013). Following CAS’ recommendations, this education document simply says that one’s risk of contracting HIV by giving head (being the performing partner) is low. However, the pamphlet does remind readers that oral sex can pose high risks for other STIs, especially syphilis, which can in turn increase the risk for HIV transmission. It also provides some practical tips on how to reduce risk (i.e. not brushing or flossing one’s teeth before sex, avoiding ejaculation in the mouth, ensuring that there are no cuts or sores in the mouth, using condoms, etc.), and discusses the increased risk of deep throating (i.e. when the performing partner takes most or all of the penis into his mouth). In addition to risk management strategies, the pamphlet offers information on how to improve one’s oral sex skills.

This is a vastly different form of education than PHAC’s. Clearly the objectives of the institution shapes the way in which risk management is framed, including the degree of serostatus uncertainty associated with each type of sex act. Institutions interpret epistemic uncertainties in different ways to achieve their biopolitical goals. As uncertainty management tools, both PHAC’s website and ACT’s pamphlet are examples of governing practices. They are communication materials that are meant to educate social actors about the threat of HIV and, following the language of governmentality studies, to help facilitate processes of self-regulation vis-à-vis risk. Both documents, however, must contend with the ambiguity of scientific data on oral sex and HIV transmission. That is, both must manage the relationship between epistemic uncertainty and social and political uncertainties, on how a lack of a clear expert consensus on oral sex may affect HIV incidence. They both manage this relationship by thinking through the social and their biopolitical commitments. Each institution has a different approach to how it envisions the social and how it prioritises particular forms of social practice. To PHAC, the social is conceived of as the general population whose health must be protected. Emphasis is on health maintenance and getting those at-risk tested for HIV, however minimal the actual threat. To ACT, the social refers to local gay male communities and thinking about how gay men can actually adjust their sexual practices in pragmatic ways to reduce risk. Emphasis here is on sexual relations. We could argue that PHAC is inflating risk while ACT is deflating risk. Yet, what is clear, is that both are managing the epistemic uncertainties associated with oral sex and HIV transmission research vis-à-vis their commitments to preserving particular social practices. What the actual, concrete risks associated with oral sex are remains a somewhat ambiguous matter. What is clear, however, is that experts across different institutions in Canada remain in disagreement about what the risks are in the third decade of this epidemic.

Let us take a moment to summarise some of the key points about risk assessment research and uncertainty that I have made thus far, before I move on to factor in undetectable viral load information. First, indisputably, risk changes across different sex acts. We know that HIV is more easily passed on in the context of unprotected anal intercourse. We know that risks are higher for those that bottom than for those who top. We know that pre-existing STIs increase the risk of transmission for HIV. We know that performing unprotected oral sex poses substantially lower risks than anal intercourse, though it may pose a high risk for other STIs. We know that being circumcised can help to reduce the risk for men who top. And we know that when condoms are used correctly they can be highly effective at preventing HIV. However, how much risk is associated with each sex act and how effective different risk management strategies are at reducing risk, remains uncertain. What constitutes effective prevention is always open to debate and interpretation, with some researchers and institutions—particular those with the most epistemological clout and biopolitical authority in the HIV prevention field—presenting more conservative and risk averse opinions and others more liberal and risk tolerant opinions.

In other words, during the transition to the biomedical era of HIV prevention, the HIV prevention field in Canada has not achieved complete synergy across knowledge production and governing practices, but only continued to produce conditions of uncertainty. The fundamentals of HIV prevention practice remain consistently open to debate, with the epistemic uncertainties associated with existing research being interpreted through the biopolitical objectives of a particular institution. Everyone may agree that condoms can effectively reduce risk or that oral sex is a lower risk practice. But to what degree remains uncertain.

This means that any sexually active social actor, especially those who are part of communities or populations where HIV prevalence is higher than others, are, regardless of the prevention measures that they take, considered to be at-risk. Returning back to this concept first introduced in chapter one, being at-risk does not mean that a potential harm—in this case, HIV infection—is inevitable or even highly probable. Rather, it means that there is socially significant possibility that the harm will occur. A social actor is now uncertain about his HIV status to some degree, and consequently, he is expected to perceive himself as being at-risk and to take action to manage his serostatus uncertainty, namely by adopting prevention practices and seeking HIV testing. To put it differently, by producing uncertainty through their research and demonstrating that there is always a modicum of doubt, epidemiologists and public health authorities ensure that sexually active gay men govern themselves as being at-risk, as living in a constant state where an HIV infection may be possible even when the most effective prevention practices have been enforced. This uncertainty has only been exaggerated when we consider research and commentary on viral load.

Viral Load and Risk Management

It is now an incontestable truth that lower levels of HIV in the bodily fluids of those already living with the virus reduces the potential for HIV to be transmitted. Throughout the transition to the biomedical era of HIV prevention, no HIV expert could convincingly argue against this claim. However, the *degree* to which lower levels of viral load can reduce risk, and most particularly, the risk reduction associated with very low or undetectable viral load levels (sometimes referred to as suppressed or managed viral load, refer to chapter two for review), has been a matter of great debate within the HIV prevention field (Loutfy et al., 2013). Whether or not serovariant sexual partners can forgo condoms during intercourse when the HIV-positive partner has an undetectable viral load has been another contentious issue (Hosein, 2008). In brief, on the matter of undetectable viral load and risk reduction, the HIV prevention field had not achieved anything near resembling a stabilising point in its third decade. Epistemic and social and political uncertainties continued to proliferate on this issue, complicating the very core of prevention practices and our conceptions of who is at-risk.

In terms of knowledge production, during the transition to the biomedical era of HIV prevention two large-scale clinical studies, HPTN 052 (Cohen et al., 2011) and the PARTNER study (Rodger et al., 2014), have both measured the risk reduction potential associated with HIV treatment. The HPTN 052 study, which monitored seroconversions among 1763 serovariant *heterosexual* couples, has argued that risk can be reduced by 96% "in the number of linked HIV-1 transmissions resulting from the early initiation of antiretroviral therapy, as compared with delayed therapy" (Cohen et al., 2011, p. 503). In addition to having lower viral loads, the HIV-positive partners in HPTN 052 had to have CD4 counts of 350 to 550 cells per cubic millimeters. Importantly, while these results are sometimes communicated as undetectable viral load leading to a 96% reduction in transmission risk, this is not precisely how the study reported its findings. Rather, it focused on the risk reduction potential related to the early adoption of treatment.

The HPTN 052 study also documented that while risks are particularly high in the acute and early infection stage, HIV can still be transmitted when HIV-positive persons are asymptomatic or minimally symptomatic and have high CD4 counts (which indicates a strong immune system). In other words, the researchers argue that the risks from those in the acute infection stage are not the sole force fuelling the epidemic. Transmission of the virus is also linked to those who have been living with HIV for some time. While the researchers feel that their results support the link between HIV treatment and prevention, they acknowledge several epistemic limitations of their study, namely that they worked with couples who were receiving ongoing sexual counselling and condoms, which may have contributed to a higher uptake of prevention practices (i.e. condoms), thus leading to less risk-taking. Only 5-6% of participants reported having unprotected sex during the study's time frame and 100% condom use at the beginning of the study was linked with lower risks overall. Unfortunately, the study did not focus on homosexual relations and it was unable to determine what the actual risks associated with acts of unprotected intercourse are when one partner is undetectable.

The PARTNER study (Rodger et al., 2014), which is still ongoing in Europe, includes 308 male homosexual couples in its sample. The study monitors seroconversions among serovariant couples with the HIV-positive partner having achieved an undetectable viral load, which is measured at less that 200 c/ML. The median time the HIV-positive man was on ART was 4.9 years. Despite numerous reported cases of unprotected anal intercourse (receptive and insertive) between men in the study, "no phylogenetically linked transmissions occurred, giving a rate of within-couple HIV transmission during eligible couple-years of zero." The researchers conclude that "The overall risk of HIV transmission (in the context of previous sex without transmission) through condomless anal or vaginal sex from HIV-positive people on ART with plasma VL < 200 copies/mL is extremely low, but uncertainty over the risk remains, particularly over receptive anal sex. Additional follow-up in MSM is essential to provide more precise estimates for transmission risk given the current assumptions of safety in some communities." Risks associated with unprotected sex when factoring in accumulated sex acts over a ten-year period range from 0%-17.9% for receptive anal intercourse and 0%-12.8% for insertive anal intercourse. A single exposure to HIV when HIV is at undetectable levels is near zero, yet repeated exposures over longer periods of time may increase risk. Regardless of these ranges, this research is unequivocally confirming that having an undetectable viral load can greatly reduce an HIV-positive man's ability to pass HIV on to his HIV-negative partners even when condoms are not used for intercourse and ejaculation occurs inside the anus. Despite these very favourable results, biomedical experts prefer to remain cautious and remind us that, at the statistical level, "uncertainty over the risk remains." During the transition to the biomedical era of HIV prevention, emerging evidence quite clearly suggests a strong correlation between undetectable viral load, ART use and reduced risk of transmission for HIV. However, the presentation of this evidence suggests that the epistemic uncertainties associated with the research process has created clear limitations in the validity and generalizability of the project's conclusion, thus making it impossible to cast away all doubt over the perceived risks associated with serovariant sexual relations, particularly among homosexually active men.

In Canada, researchers at the British Columbia Centre for Excellence in HIV/AIDS have also supported the correlation between undetectable viral load and reduced risk of transmission under the Treatment as Prevention (TasP) model (Montaner et al., 2010). As discussed in chapter two, TasP is guided by a "seek, test and treat" strategy. At-risk individuals are encouraged to get tested routinely so that we can quickly find those social actors who have recently seroconverted and who have unmanaged and/or high viral loads. From a TasP perspective, the key issue fuelling the epidemic are those social actors experiencing serostatus uncertainty. By finding new seroconverts—individuals who may still identify as HIV-negative, but who are actually living with the virus and highly infectious—and placing them on HIV treatment early (regardless of whether or not they wish to be on treatment so early), we can manage their viral loads so that they are brought down to undetectable levels. Reducing the capacity for each HIV-positive person to pass on HIV to others eventually reduces population level viral load, helping to reduce new infections at the community and individual levels. Reducing the serostatus uncertainty of individual social actors impacts the serostatus uncertainty of the population, which then helps to prevent individual actors form seroconverting.

The TasP risk management paradigm has so far determined that the correlation between the number of HIV-positive individuals on treatment and the number of new HIV diagnoses per year in the province of British Columbia is about -0.89. Nonetheless, the authors remind us that "Since our report is based on an ecological study, our results cannot be taken as definitive proof of causality" (p. 537). They are certain that there is a link between treatment and prevention, but they are uncertain about its generalizability. Even those in the field who are avidly optimistic about the role of treatment on prevention make sure to express a bit of doubt to dissuade any over-eagerness over these new findings. Once again, enthusiasm on the risk reduction associated with managed viral load has been lessened by the epistemic uncertainties associated with the research process.

Adam (2011), focusing on the epistemic uncertainty associated with the available research, has cautioned against this growing enthusiasm over the treatment as prevention paradigm and the idea of relying on undetectable viral load in prevention practice. First, he reminds us that achieving an undetectable viral load is not possible by all HIV-positive people on medication. Currently only one third of HIV-positive people *on treatment* in Ontario can achieve an undetectable viral load. While achieving an undetectable viral load has become the gold standard of HIV care and the sign of responsible biological citizenship, it is a goal that can only be achieved by those whose bodies effectively respond to treatment, have great access to medical care and the socio-economic resources that allow them to manage their health more generally. Thus the idea that all HIV-positive diagnoses will lead to viral suppression is not always the reality. Moreover, what actually constitutes “undetectable” or a “suppressed” viral load has been somewhat of a moving target during the transition to the biomedical era of HIV prevention. For example, in Canada, less than 40 copies/ml is the current official figure provided to achieve undetectability (Ontario Ministry of Health and Long-Term Care, 2008). However, the PARTNER Study bases its arguments on less than 200 copies/ml. Thus during this time period it wasn’t just the risk reduction associated with achieving undetectable viral load that was questionable. Even when we could clinically classify an HIV-positive person as being undetectable was also open to revision and critique, including determining how often they need to get viral load testing to ensure that they are sustaining undetectability (Adam, 2011).

Second, Adam reminds us that many of the studies examining viral load measure viral quantities in the blood of HIV-positive persons and not in the genital fluids where viral load may be higher. Of course, when it comes to the sexual transmission of HIV, the viral load quantities in genital fluids are usually far more pertinent than those in blood. Third, much of the data on undetectable viral load during the transition to biomedical era of HIV prevention, such as the HPTN 052 study, has only been collected from heterosexual sexual relations and has been extrapolated to make sense of gay male sex where risks through anal sex make transmission more likely. Fourth, Adam reminds us about viral blips, moments where viral load may temporarily spike in an HIV-positive person and the potential inconsistency in viral load levels between testing periods. Viral blips may occur randomly or be a product of an overly taxed immune system that has been working on other infections such as the flu or STIs. And finally, as a broader epistemological and biopolitical critique, Adam demonstrates how treatment as prevention research, and biomedical intervention research more generally, is institutionally supported within the HIV prevention field far more than social research on gay male sexuality—an opportune position, no doubt, for pharmaceutical companies who have much to gain by increasing the applications of their current drug portfolios. In short, Adam has raised questions about the epistemic uncertainties associated with the emerging scientific evidence on the risk reduction of undetectable viral load, thus questioning the validity and generalizability of this work. During the transition to the biomedical era of HIV prevention, he convincingly argues that the available data on gay men was simply not certain enough for us to substantially alter our HIV prevention messaging on condom use.

Regardless of the epistemic uncertainty associated with the emerging evidence, some experts in the HIV prevention field began to enthusiastically support the link between a reduced risk of HIV transmission and undetectable viral load. As early as 2008, the Swiss National AIDS Commission released a statement arguing that an HIV-positive person with a suppressed viral load and on ART is not sexually infectious (Vernazza, Bernasconi, Hirschel, & Flepp, 2008). The statement argued that this is true if an HIV-positive person adheres to his HIV medication, visits his doctor routinely, has no other STIs and has had a suppressed viral load of less than 40 copies/ml. As another example of a key ruling relation, the document has had a profound impact in the HIV prevention field, being one of the first expert texts with epistemological clout to officially make such a supportive statement on viral load. For nearly three decades, serovariant sex in general and unprotected serovariant intercourse in particular, has been framed as the highest risk of HIV transmission. The fact that HIV-positive individuals can now have unprotected intercourse with HIV-negative individuals and potentially pose no risk of transmission represents a fundamental shift in the HIV prevention landscape.

Yet, despite the fact that HIV prevention experts agree that undetectable viral load *may* reduce the risk of transmission, this does not mean that there has been automatic consensus in the field on how we should best communicate this information and how it should influence everyday prevention practices and policies. In other words, the ambiguity of the research results has raised significant challenges for governing practices. This has especially been the case in Canada. During the transition to the biomedical era of HIV prevention, members of the HIV prevention field have been very perplexed with how to communicate this emerging information and all of its epistemic uncertainties in ways that will not inadvertently lead to negative social outcomes, particularly through the encouragement of increased sexual risk-taking and thus increased HIV and STI incidence. In response to the Swiss Statement, CATIE released a news bulletin arguing that the report was based on evidence that could not be generalizable and that we still have very little information about the differences between viral load in the blood stream versus the genital tract (Hosein, 2008). CATIE refers to additional scientific evidence suggesting that only 2% of our immune system's cells are actually found in our blood stream and like Adam, they raised the issue of viral blips. CATIE concludes that:

> Relying on the presence of a low viral load in the blood is not sufficient information to prevent infection, as HIV replication continues to take place in the body despite a low viral load in the blood. New copies of HIV can be produced in many parts of the

> body, such as the male and female genital tracts as well as the rectum…. Currently the scientific data do not support the claim that HIV-positive people whose viral loads are undetectable cannot transmit HIV. More research is needed to find out the relationship between viral load, HAART and HIV transmission (Hosein, 2008).

Following this report CATIE has published more online articles about the risk reduction potential of undetectable viral load (Wilton, 2013), documents which are intended to help service providers make sense of new prevention information and think about communication strategies for at-risk clients. Again, these serve as examples of ruling relations since they aim to construct the social by organising how healthcare service providers respond to the needs of at-risk clients. They are the attempted translation of ruling forms of knowledge into the policies and service provisions of HIV health care settings. Overall, CATIE has a very optimistic orientation to the capacity of undetectable viral load to reduce HIV risk. However, they make sure to take a measured and cautionary approach. For example, they highlight that some research has suggested that 5% to 48% of HIV-positive people who have achieved an undetectable viral load in their blood, where viral load is usually measured, still have detectable amounts of the virus in genital fluids, especially their semen (Loufty et al., 2013; Marcelin et al., 2008; Sheth et al., 2009; Sheth et al., 2012; Wilton, 2013). Despite the success of the HPTN 052 study, they remind us how the study was comprised of very motivated individuals (i.e. individuals who adhered to their HIV treatment schedules) who were monitored under controlled settings and who received prevention services and supports that would have played a key role in reducing risk (Wilton, 2013). These artificially controlled settings do not translate easily into the real world, making it difficult to create generalizable arguments on viral load's risk reduction. Despite being optimistic about the role of undetectability, CATIE avers that: "There is a general consensus that the risk is not completely eliminated when the viral load is undetectable and no condom is used. In fact, there has been one published case report of HIV transmission between a same sex male serodiscordant couple where the HIV-positive partner was believed to have an undetectable viral load" (Wilton, 2013). Once again, there is a high degree of optimism over biomedical treatments that is then tapered off with a bit of doubt.

The acceptance of the risk reduction of undetectable viral load has unquestionably been ushered in with a great degree of hesitation across innumerable health service organisations over the last decade. For example, organisations like ACT and the Gay Men's Sexual Health Alliance

(GMSH) in Ontario have warned gay men about relying solely on viral load as a risk reduction strategy over consistent condom use (GMSH, 2012). In an education pamphlet specifically on the topic titled "Undetectable Viral Loads And HIV Transmission: What We Know," they argue that the science and technicalities are not yet clear, and that condoms still remain the most effective way to prevent HIV during anal sex. Meanwhile, the *Ontario Guidelines for HIV Counselling and Testing* reminds service providers that: "A low viral load reduces but does not eliminate the risk of HIV transmission. Antiviral medications do not always reach high enough levels to suppress HIV in the genital tract" (Ontario Ministry of Health and Long Term Care, 2008, p. 2). Again, as a ruling relation, this document's communicated sense of apprehension is meant to coordinate how health care service providers in Ontario respond to their at-risk clients.

In Vancouver, the Health Initiative for Men (HiM)—one of the most influential gay men's sexual health organisations and advocacy centres in Canada—offers a "Know Your Risk" online calculator that allows gay men to put in information about their sexual activity as well as their HIV status and the presumed statuses of their partners to qualify their sexual risk-taking. For example, a social actor can put in the fact that he is HIV-negative, that he is having sex with an HIV-positive man, that they are having oral sex only and that they are not using a condom. The application will then inform him that this situation poses a "moderate risk" and he can then make his sexual health decisions accordingly. During the transition to the biomedical era of HIV prevention, the online application did not account for undetectable viral load information and thus all unprotected anal intercourse between serovariant men is considered to be very high risk. Relatedly, serovariant oral sex is framed as being a moderate risk versus a low or negligible risk. In fact, the website states:

> Some guys believe it is safe to have condomless anal sex with someone whose HIV status is different to theirs if the HIV-positive guy has a low or undetectable HIV viral load. An undetectable viral load test result indicates that they cannot find any HIV in a given blood sample. However, this does not mean that the blood is free of HIV, only that there is less than the test can measure. Detectable levels of HIV have also been discovered in the lining of the anus of HIV-positive men, even when they have undetectable HIV levels in their blood. This is rare, however these men would be able to pass on HIV while on the bottom during anal sex, even with an undetectable viral load (Health Initiative for Men, 2010).

What is interesting about the phrasing used here is that the belief in the risk reduction potentials of undetectable viral load is being attributed here to "some guys" and not to the researchers (and activists, but more on this in the next chapter) who have been working avidly to cement this as popular truth. While "some guys" may be operating under this assumption, there was simply not enough evidence to support undetectable viral load as a risk management strategy without condoms when this online risk application was launched in 2010, during the transition to the biomedical era of HIV prevention. This is not to critique HiM or to suggest that the organisation prefers to place blame onto at-risk gay men. Rather, by including community examples that are sceptical of the role of undetectable viral load on HIV prevention practices, I am simply demonstrating how complex the adoption of viral load information has been during the transition to the biomedical era of prevention when emerging research was very encouraging but still marred by epistemic uncertainty. This uncertainty made for somewhat contradictory and ambiguous prevention messaging. It is very clear in all of the community examples described so far that service providers and educators have been reluctant to support men foregoing condoms in the context of serovariant sexual relations where one partner has an undetectable viral load.

A more recent report from Québec has been substantially more optimistic than these previous documents. L'Institut National de Santé Publique du Québec (INSPQ) (2014) has developed a report for health service providers summarising the latest evidence on undetectable viral load. They argue that homosexual sexual relations (including oral sex and unprotected anal intercourse) poses a "risque négligeable ou très faible," which "ne signifie pas une absence de risque. Toutes les activités de cette catégorie comportent un potentiel de transmission du VIH" (p.4). Unprotected serovariant intercourse only remains at negligible levels if the following six parameters are met: (1) the HIV-positive partner has to have been undetectable for at least 6 months as a result of being on ART, and has to have had two consecutive viral load tests that confirm this fact; (2) the HIV-positive partner must be adhering to his medication schedule at least 95% of the time; (3) the sexual-romantic relationship must be stable and exclusive; (4) each partner must have no other STIs; (5) the HIV-positive partner must have a viral load test every three to four months and the HIV-negative partner must have an HIV test every three to four months; and (6) the partners must receive appropriate counselling to talk about risk reduction strategies including condom use. These parameters mirror the conditions set up in the clinical trials on undetectability such as the HPTN 052 study. Similar to CATIE's discussion on undetectable viral load, the INSPQ is hesitant to make claims about the risk reduction potential of undetectable viral load without acknowledging the extremely specific conditions from which this risk knowledge was produced. The report concludes that “Enfin, l’avis des experts convient que même si la charge virale est indétectable et que toutes les conditions sont mises en place, le risque zéro ne peut être garanti. Un certain risque de transmission peut subsister, mais il est réduit” (p. 21).

A few things are important to consider in this report. The first is that this is a public health document which clearly positions the risks associated with unprotected anal intercourse when one partner has an undetectable viral load as being negligible or very low. The biopolitical significance of this ruling relation should not be underestimated. The messaging from the INSPQ contrasts greatly to the *Ontario Guidelines for HIV Counselling and Testing* discussed above. As a state-sanctified document, an example of a ruling relation, this report validates the belief in the risk reduction potential associated with undetectability, providing a context for service providers to engage with their clients about prevention issues beyond condom use or serosorting.

However, the definition provided for “risque négligeable ou très faible” and the final caveat offered makes it very clear that risk is *not* reduced to zero. This means, fundamentally, that those HIV-negative men who engage in serovariant sexual relations with those with undetectable viral loads are still considered to be at-risk—that is, they must still get tested to confirm that they remain HIV-negative. Furthermore, we might also wish to question the practicality of the six parameters offered. Fundamentally, these parameters aim to ensure that the HIV-positive partner is fairly certain that his viral load levels remain undetectable through frequent viral load testing and by adhering to his medication schedule. Sexual relations outside of an exclusive sexual relationship can lead to STIs which can increase risk for HIV, which is why the relationship needs to be, from a risk averse public health standpoint, monogamous. What qualifies as being in a “stable” relationship is not made clear in the document. However, considering the amount of health monitoring that is required to ensure that risk is reduced, partners may need to have clear and frequent communication that can only occur—or at the very least, is more likely to occur—when a relationship is strong and steady. However, these parameters create a context where only those who are acting as perfect biological citizens, routinely monitoring their health and risk and who engage in very specific forms of intimate relationships (i.e. monogamous relationships) can officially benefit from our understandings of the risk reduction associated with undetectability. For social actors who are dating casually, or who are just beginning a serovariant relationship, it remains uncertain, at least from a public health perspective, how information on undetectable viral load can be to their benefit. In this way, the report remains progressive, but it still leaves us with a lot of uncertainty with how information on undetectable viral load may be used in everyday life.

In summary, during the transition to the biomedical era of HIV prevention, emerging scientific research began to indicate very favourable relationships between undetectable or managed viral loads and reduced risk of HIV transmission. However, given the epistemic limitations of this data during this time period, especially as it applied to anal intercourse among gay men, experts within the HIV prevention field remained very cautious with how to communicate this information to at-risk clients and actively cultivated uncertainty in order to dissuade gay men from adopting undetectable viral load information too eagerly into their prevention practice.

Reviewing these research examples and institutional texts on undetectability we can see the intricate relationship between knowledge production practices and governing practices, between epistemic and social and political uncertainties. As a ruling form of knowledge, biomedical and epidemiological based research on undetectable viral load is meant to help service providers (from physicians to community educators) communicate the risk of HIV infection to their clients and to help adjust services and education to meet our new comprehension of effective prevention. Yet the many epistemic uncertainties associated with this data have made it difficult to determine exactly how to communicate this information on undetectable viral load in ways that won’t produce additional social uncertainties (that is, foster additional sexual risk-taking—I will explore this concern, known in the field as treatment optimism, further below). The challenge, then, is turning ambiguous research findings into solid social policies and education. As we have seen, some researchers and organisations have simply emphasised the epistemic limitations of the research thus discouraging a reliance on undetectable viral load. Other organisations have presented all of the findings and their nuances, thus creating a context where extremely motivated at-risk clients can decide on their own how they wish to interpret the data and the risks given this tremendous complexity. And others have been supportive of the risk reduction associated with undetectable viral load but have also listed a sea of caveats as a protective measure. Thus in the absence of a stabilising point on the issue of undetectable viral load, organisations have tried their best to respond to emerging knowledge in ways that recognise epistemic limitations and manage social risks. However, what this is actually to mean for gay men in their everyday lives remains ambiguous.

In sum, the transition to the biomedical era of HIV prevention has been characterised by significant uncertainty over how to incorporate the issue of undetectability into HIV prevention practice. I will examine numerous examples of how this uncertainty has been negotiated below, starting first with a brief look at criminal law and HIV non-disclosure. The criminalisation of HIV non-disclosure serves as another prime example of the link between epistemic and social and political uncertainties.

Viral Load and the Criminal Law

In terms of the transference to social and political uncertainty, the epistemic uncertainty associated with the risk reduction potential of undetectable viral load can be noted in legal policy. As first mentioned in chapter two, in 2012 two Supreme Court rulings, *R v. Mabior* and *R. v. D.C,* generated a precedent whereby HIV-positive persons would only have to disclose their HIV statuses in instances where there was a "realistic probability" of transmission (Canadian HIV/AIDS Legal Network, 2012). Under this court ruling sex not considered to pose a realistic probability of transmission refers to vaginal intercourse where both: (1) a condom is used and (2) the HIV-positive person has achieved an undetectable or low viral load. Failure to disclose when both of these conditions are not met can lead to criminal charges, including first-degree murder and aggravated sexual assault charges. It is still unclear how the law applies in the context of sex between men and how much risk is, from a legal perspective, associated with other sexual activities like oral sex.

On the one hand, this policy shift acknowledges that lower viral load levels can reduce the risk of HIV transmission in the context of serovariant sexual relations. Following risk society theory, we can clearly see how a social institution (in this case the law) is adapting to emerging knowledge. On the other hand, this interpretation of biomedical evidence arguably shifts long-standing interpretations of what constitutes safer sex (Schulman, 2014). For decades, condom use for intercourse was considered to be the standard practice for safer sex and, at least in some legal cases, the use of condoms has been interpreted as there being no significant risk of transmission, regardless of viral load information (Canadian HIV/AIDS Legal Network, 2011). Under the newer framing of the law, however, condoms are no longer sufficient enough as a form of risk management. Serovariant protected intercourse is considered to pose a realistic probability of risk to an HIV-negative person if an HIV-positive person has a detectable viral load. It is here that we can best see the biopolitical implications of Remis et al.'s risk assessment figures discussed above. They argued that condoms are not necessarily adequate protection to reduce risk to insignificant levels at the population level. Under their interpretation of risk, this shift in criminal policy makes sense.

On the reverse side, activists working to overhaul the criminalisation of HIV non-disclosure argue that this policy shift is resolutely unfair. Many activists and community leaders were hoping that newly developed research on biomedical risk and viral load would help create more just legal policy, mostly by minimising the applicability of these laws to only those very few clearly defined cases of purposeful transmission (Mykhalovskiy, Betteridge, & McLay, 2010). However, this recent policy shift actually increases the burden on HIV-positive individuals as it requires at least two forms of risk management to avoid potential charges. As Tim McCaskell, a Toronto based HIV/AIDS activist states, "It seems to have slid back from the position in 1998 [the original *R v. Currier* decision], even though the science has been moving the other way…. The standards are being set at a level that far surpasses the standards of risk that normal people deal with every day of their lives" (Press, 2012). Under the new interpretation of the law, individuals who are practising HIV prevention by using condoms may be charged and convicted if their viral load temporarily spikes or if they are never able to reach undetectable levels. This is especially of concern among HIV-positive women, who may have a harder time sustaining an undetectable viral load than HIV-positive men (Cescon et al., 2013). Moreover, HIV-positive individuals who have extremely low viral loads and, by most available scientific evidence, cannot transmit HIV, may also be criminalised if they fail to use condoms. Under McCaskell's logic, the efficacy of condoms and the risk reduction of undetectable viral load are each sufficient enough *on their own* to qualify as adequate prevention. Thus the epistemic uncertainties and limitations of these prevention strategies that I have discussed throughout this chapter are being minimised here in order to generate an activist argument about social justice and the safety of serovariant sexual relations. Following Douglas, the social location of a social actor plays a significant role in how they interpret available knowledge. In this instance, the social and political uncertainties generated by rampant criminal charges against HIV-positive persons serves as the primary lens by which available data on HIV risk and prevention is being read and mobilised. McCaskell's interpretation of risk is an activist interpretation of available knowledge, a reading of available research in the interest of questioning state policy.

In terms of HIV-negative gay men, there are several arguments about the potential for criminalisation to lead to more sexual risk-taking that are routinely mobilised to critique the criminalisation of HIV nondisclosure. The first argument is that due to the criminalisation of non-disclosure, HIV-negative gay men will rely on and expect disclosure from potential HIV-positive partners (O'Byrne, 2011). The idea here is that if an HIV-positive partner does not disclose his HIV status an HIV-negative man will just assume that he is also negative and perhaps higher risk sexual practices will occur. In short, criminalisation may lead to more infections in the long run. The second argument is that the criminalisation of HIV nondisclosure might dissuade at-risk HIV-negative men from getting tested for HIV. This is because of HIV-related stigma (a stigma that criminalising HIV-positive people only reinforces) and the concern that once one finds out that he is HIV-positive he will be obligated to disclose his status and will live a sexual life under the ongoing threat of facing criminal charges (O'Byrne, 2011; O'Byrne, Bryan, & Roy, 2013). This can lead to poorer health outcomes and more infections in the long run because of unmanaged viral loads. Thus from a public health perspective, activists and scholars have argued that criminalisation is an inferior policy decision, a poor governing practice that produces more social and political uncertainty (Mykhalovskiy, 2011). The final popular argument is that many HIV-negative men tend to be supportive of the criminalisation of HIV non-disclosure and will use it when they feel threatened despite its detriment to gay communities. This is, in part, the assumption of the *Think Twice* campaign (http://www.thinktwicehiv.com/). This is a community-based project composed of a series of online videos produced by activists and members of the HIV community in Ontario. It is primarily directed toward HIV-negative men, encouraging them to reconsider going to the police after they have found out that a sexual partner has not disclosed his HIV status.

In summary, from a critical activist perspective the criminalisation of HIV non-disclosure, as a governing strategy meant to manage risk, actually produces additional social and political uncertainties. It creates conditions that foster social discrimination against HIV-positive men (a discussion I will look at more closely in the next chapter) and potentially aggrandises risk at the population level by discouraging HIV testing. Unearthing all of the social and political nuances of the HIV criminalisation debate in Canada is beyond the scope of this dissertation, as it is an extremely complex issue deserving sustained critical reflection. However, in the analysis of the interview data offered later on in this dissertation, I will investigate how some HIV-negative gay men (and particularly those outside of HIV activist milieus) are interpreting the relationship between risk, disclosure and the law that will add some nuance to these debates.

What is most important for the argument being developed in this chapter is that reactions to this legal policy demonstrate very different interpretations of what fundamentally constitutes risk during the transition to the biomedical era of HIV prevention. To some experts, condoms are sufficient forms for risk management and for others they are not. To some experts, undetectable viral load is sufficient as a form of risk management and for others it is not.[14] How then do we reconcile these contradictory opinions? How exactly do we incorporate our current knowledge on undetectability into governing practices that do not produce additional social and political uncertainties? How exactly do we contend with the epistemic uncertainties associated with undetectability research in ways that are simultaneously biomedically sound and socio-politically just? How do we achieve a stabilising point when confronted with such ambiguous data and conflicting expert opinion?

So far, experts have not been able to come to a consensus on these issues, with their being marked differences of opinion on the current state of criminal laws on non-disclosure among various researchers and community members. The lack of clear satisfactory solutions to this problem confirms how the HIV prevention field in Canada has failed to achieve a stabilising point in its third decade. It is not in agreement, at a very fundamental level, with what constitutes effective prevention. Social institutions (in this case the law) are reflexively adapting to emerging knowledge, but in ways that are not harmonious with different experts and across different social sites. Some choose to aggrandise the epistemic uncertainties associated with existing evidence on undetectability, while others choose to minimise the epistemic uncertainties to serve the political goal of minimising criminal charges against HIV-positive persons. Thus

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[14] In fact, in a more recent case in Nova Scotia an HIV-positive *heterosexual* man has been acquitted of aggravated sexual assault charges despite no condom use and not disclosing his HIV-positive status, because he had an undetectable viral load (Bernard, 2013) This decision was post-Mabior. While this is considered to be a victory by HIV activists, it only further cements the point that the risks associated with serovariant sex in the context of undetectability are continually being debated, with different legal authorities having very different interpretations of the data.

governing practices play a role in how knowledge is read and utilised. The interest of managing social and political uncertainties (e.g. HIV stigma and HIV incidence), becomes the frame by which epistemic uncertainties in research are read and mobilised.

While we have accumulated more understanding on the nuances of HIV prevention over the last three decades, what constitutes effective risk management is still a contested issue. It is also an example, following Douglas, of the ways in which risk is moralised within society and becomes a question of what is acceptable risk and what is reasonable doubt. If we look back at some of the epidemiological and biomedical statistics on undetectable viral load discussed above, regardless of the epistemic uncertainties, they all tend to indicate *very* low levels of risk associated with most serovariant sex acts. The issue is not an abundance of risk, but the social acceptability of the risk that remains, and whether or not we can tolerate any degree of uncertainty when we are speaking about a heath condition as stigmatised as HIV. This heated debate over the uncertainty associated with the risk reduction of undetectable viral load has also been present with early discussions on PrEP, the final topic in this section on risk assessment research.

Uncertainty and PrEP: The Early Years

During the transition to the biomedical era of HIV prevention the use of Truvada (an anti-HIV medication) as PrEP was still emerging as a key prevention technology (see chapter two for review). Truvada had not yet been approved for use as PrEP in Canada during the time period under exploration in this dissertation. Nonetheless, the biomedical research was generally quite encouraging, demonstrating that PrEP could reduce risk of transmission by over 92%, making it a highly effective prevention strategy (Grant et al., 2011)—basically as effective as consistent condom use.

Despite this, during this time period debates around the effectiveness of PrEP have been fairly heated and robust, including discussions on side-effects and its limited applicability for women (Patton & Jin Kim, 2012). Concerns have also been raised as to the practicality of this prevention method in everyday life—that is, questioning whether or not gay men will actually take the pill everyday as prescribed (Wilton, 2015b). Indeed, in the iPrEx clinical trial monitoring PrEP use among gay men, the risk reduction potential of the cohort was actually measured at 42% (Grant et al., 2011). The 92% risk reduction figure comes only from those research participants who strictly adhered to the treatment schedule. Failure to adhere to a PrEP schedule properly raises the serious possibilities for generating drug resistant strains of HIV. Others have raised concerns that PrEP will promote unprotected sex, which can lead to increases in other STIs and help transmit antibiotic resistant forms of infections like gonorrhea that could be gravely dangerous, especially for those already living with HIV (Wilton, 2015b). Recent epidemiological research has actually proven that this speculation might actually be the case (Kojima, Davey, & Klausner, 2016).

In parallel, the term “Truvada Whore” has been used pejoratively against PrEP users, signifying that gay men who need to go on PrEP to reduce risk are unable to control their sexual appetites and are responsible for increasing health risks to gay male communities (Burress, 2014). There has been tremendous stigma generated and hostility directed toward those who use PrEP, including from key HIV experts and medical professionals (Burress, 2014). However, the term “Truvada Whore” has been mostly reclaimed by PrEP users who are proud to be instilling a risk management strategy that allows them to express their sexuality in a context less encumbered by the fear of seroconversion (Charette-Dionne, 2014; Glazek, 2014; McCullagh, 2013). Indeed, the very point of PrEP is to annihilate the experience of serostatus uncertainty. PrEP can thus be empowering for those riddled by HIV-related anxieties (see chapter six for more on this). From the point of view of risk society theory, we see how emerging knowledge allows for new processes of self-identification vis-à-vis risk management choices—the PrEP user or the “Truvada Whore” in this instance. Yet, following Douglas, there are moral parameters to these choices. The PrEP user may either be framed as the responsible biological citizen or as the slut with uncontrollable appetites, depending on one’s views on promiscuity and the perceived effectiveness of PrEP (that is, what one makes of the epistemic uncertainties of the existing research). In other words, the actual biomedical effectiveness of PrEP is often read through a pro-sex or anti-sex lens, and the sexual liberation that PrEP can offer has been read as acceptable or dangerous through the epistemic uncertainties associated with the existing data. I will return to this theme, the link between sexual politics and interpretation of biomedical evidence, routinely in the coming chapters.

As a prevention tool which is meant to help HIV-negative gay men deal with serostatus uncertainty, PrEP has been ushered in with an extreme sense of caution as experts remain uncertain about the ultimate risks this tool might produce. Nonetheless, despite the limited infrastructure currently available for accessing PrEP, a small but highly motivated cohort of HIV-negative men are currently on PrEP in Canada, either through clinical trials or after having advocated for prescriptions from their doctors to get Truvada "off label." This demonstrates just how much some gay men have come to envision themselves as being at-risk for HIV and have, as biological citizens, prioritized the management of HIV risk in their lives, even when the task is neither logistically simple or biomedically certain.

The limited accessibility of PrEP during the transition to the biomedical era of HIV prevention in Canada means that this prevention tool was not part of the risk management strategy of any of the gay men interviewed for this project. Indeed, the broader acceptance of PrEP as ushering in a potential paradigm shift in HIV prevention is something that arose during the process of writing this dissertation rather than during the time period that this dissertation explores. For this reason, PrEP will not take up a sufficient amount of the analysis that follows. Nonetheless, it is necessary to bring up the emergence of PrEP as a debated risk management tool during this time period as it once again demonstrates how the HIV prevention field has failed to reach a consensus on yet another key risk management strategy in its third decade. It also demonstrates how the epistemic uncertainties associated with HIV research—namely, will social actors be able to mimic the parameters set up by the clinical trials in everyday life—create additional social and political uncertainties—that is, will increasing access to PrEP lead to more sexual risk-taking and HIV incidence in the long-run. While PrEP access has now become one of the leading discussions in the HIV prevention field in Canada, during the transition to the biomedical era of HIV prevention it was still emerging as a viable risk management strategy that, like other prevention solutions, has been plagued by great uncertainty. As a consequence of this uncertainty, PrEP has been used to moralise and politicise the sexual behaviour of gay men in conflicting ways. I will continue to explore this theme in the next section on risk factor research. But first I will summarise some of the key thoughts on risk surveillance and risk assessment research.

Risk Surveillance and Risk Assessment Research: Conclusion

In part one of this chapter I have investigated risk surveillance and risk assessment research on gay men and HIV prevention. Drawing on the uncertainty triad developed in chapter one, I examined what types of knowledge have been produced during the transition to the biomedical era of HIV prevention. I focused on how epistemic uncertainty related to this research has been handled by various HIV experts. And I looked at examples of how various institutions and HIV experts have responded to emerging data on HIV, incorporating such knowledge into our governing practices.

To summarise, I argued that risk surveillance and risk assessment research plays a role in producing and cultivating uncertainty in multiple ways. First, epidemiological statistics are often used to "beat-up" the epidemic, to create a context of heightened risk for sexually active gay men. Data extracted from milieus known to have higher levels of HIV prevalence and incidence are used to make statistics about, and education material for, all gay men. Second, the subjective experience of serostatus uncertainty is often framed as one of the principal conditions fuelling the epidemic, with those at-risk posing the most risk to others in the community. Third, HIV experts continue to debate the effectiveness of existing prevention measures and the benefits of emerging biomedical technologies on risk reduction. These debates have only amplified in the context of biomedical prevention, as undetectable viral load and PrEP add new layers of uncertainty and introduce new risks. From a governmentality and biopolitical perspective, surveillance and assessment research can be used to govern the population and instil forms of self-regulation. By questioning the effectiveness of all forms of risk management and by aggrandising the threats of HIV at the population level, biomedical and public health narratives on the epidemic ensure that all sexually active social actors (especially those from high risk groups) are made aware of their perpetual at-risk status and that they conduct their behaviour in order to reduce the threats posed by serostatus uncertainty (i.e. through testing).

Several things remain clear from existing risk assessment and surveillance research: risk varies across sex acts; effectiveness varies across different risk management strategies; and HIV treatment can play a significant role in risk management. However, how effective available risk management tactics are remains uncertain and highly contestable. The lack of expert consensus on the risks associated with oral sex, protected anal intercourse, undetectable viral load and PrEP represent how the field has failed to achieve a stabilising point in its third decade. Research is continually produced on these topics which consistently challenges our concepts of HIV prevention and what we consider to be safer sex. Various experts and institutions aim to adapt to this new research, but the product is a melange of contradictory and ambiguous messaging. No doubt this has been the case with information on undetectable viral load.

Indeed, debates and inconsistent messaging on the risk reduction associated with undetectability are a defining characteristic of the HIV prevention field during the transition of the biomedical era of HIV prevention. Experts have simply failed to reach a consensus on the prevention benefits associated with undetectable viral load during this time period. The epistemic uncertainties associated with existing research have produced several challenges with regards to the formation of effective governing practices, including education material for service providers and at-risk clients, as well as policy adjustments such as the criminalisation of HIV non-disclosure. It is clear that the social and political interests of experts play a role in how they interpret epistemic uncertainty, whether they wish to aggrandise or minimise its potential impact. Following Douglas, there are always ways to interpret available data on risk management to serve our interests, to moralise particular social actors in particular ways in order to establish or question social hierarchies. This is a dynamic that I will continue to explore in much more depth in the following pages. I have only just begun to touch upon the convoluted and contested nature of prevention issues like undetectable viral load and HIV status disclosure. The moral and political dimensions of these debates are considerable and complicated. The epistemic uncertainty of the data has produced opportune conditions for significant clashes of opinion on sexual practice, risk and safety.

In sum, after examining key examples of ruling forms of knowledge and ruling relations, it is clear that things remain unquestionably uncertain. Risk surveillance and risk assessment knowledge have brought us remarkable insight into the biomedical and epidemiological nuances of prevention, but have also produced a lot of doubt that must be negotiated. The field has failed to achieve a stabilising point, having instead produced conditions of uncertainty. The scientific measurement of risk associated with ejaculate in anuses may not have been exactly what Beck and Giddens had in mind in their theoretical work. However, undoubtedly a world where experts continuously produce new conflicting knowledge that institutions have to race to keep up with and that provides new opportunities for social actors to implement their self-identity, is a risk society fully realised.

Part Two: Risk Factor Research

As another example of ruling forms of knowledge, this research domain continues the risk analysis work of the risk surveillance and assessment research just described by examining the mitigating risk factors behind HIV transmission. If the domain of research explored above focuses on locating risk and establishing what constitutes both a risk and effective risk management, this parallel branch of research is curious to understand why it is that social actors take risks by concentrating on the underlying factors that facilitate sexual risk-taking. In epidemiological science, a risk factor is any characteristic that increases a chance of contracting a disease or infection like HIV (Bhopal, 2002). In HIV prevention science a risk factor can be a combination of inter and/or intra personal elements that interact at a given moment to make sexual risk-taking (usually defined as an act of unprotected anal intercourse, sometimes acts of unprotected oral sex) more likely for an individual social actor or group. Risk factors may be social or demographic variables (e.g. age, race, income), psychological and mental health conditions (e.g. depression, anxiety, low self-esteem), or psychosocial conditions (e.g. history of abuse, harassment, substance use) (Public Health Agency of Canada, 2013). Risk factors may also be based on previous behavioural patterns (e.g. history of unprotected sex, promiscuity, monogamy), beliefs and attitudes to risk and risk management strategies (e.g. opinions on condom use, undetectable viral load and living with HIV) or HIV prevention literacy levels (Public Health Agency of Canada, 2011b, 2013).

Risk factor research is largely produced by the technico-scientific disciplines. Psychology, health promotion studies, sexology and social work drive this type of knowledge production, which expands upon the epidemiological interests of the research just described. Indeed, many of the research questions, data sets and objectives of risk factor research overlap significantly with risk surveillance and assessment research. For example, the M-Track report and the Sex Now survey both have risk surveillance components, but they also gather a wealth of additional knowledge that allow researchers to draw correlations between risk related behaviours and different social contexts.

Most research in this domain fits solidly within the parameters of evidence-based medicine. Data is typically collected in larger research teams using surveys that include psychometric questioning and socio-demographic information, often with scales that have been pre-approved for scientific validity. Researchers may draw from the same data sources as risk surveillance projects or from separate studies. Qualitative research (such as focus groups, in-depth interviewing, motivational interviewing, or open ended questions in surveys) may be added to provide nuance. As ruling forms of knowledge, this work is intended to directly influence governing practices. The findings from this type of research may be used to develop new education campaigns, counselling programs, or advocate for policy changes.

At its basis, risk factor research generates risk profiles (Lupton, 1999), descriptive accounts of the different categories of gay men most likely to contract HIV or STIs. Risk profiles can then be used to target our prevention education and outreach. For example, research that indicates that more gay men in suburban regions of the country are practising unprotected intercourse, or have lower levels of sexual health literacy, or report inadequate LGBTQ2 friendly health services in their region, can be used to ramp up prevention programs and services outside of traditional urban enclaves. As another example, both risk surveillance research and risk factor research are interested in determining how unsafe sex may be facilitated through the Internet and mobile sex apps like Grindr, Scruff and Jack'd. If more men report taking sexual risks when arranging sex with someone through a mobile app than through other settings, like a bar, then funding more prevention outreach targeting sex app users can be justified. Risk factor research collects the evidence to support these types of interventions, as well as evaluating which online interventions are the most effective at reaching those at-risk and getting them tested.

To date, risk factor research has indicated that there may be some correlation between the use of mobile sex apps and sexual risk-taking, particularly because a minority of very sexually active men on these apps have not yet been tested for HIV but still consider themselves to be HIV-negative and engage in unprotected anal sex (Landovitz et al., 2013). Some research has argued that apps increase risk simply by making sex more accessible and thus they increase the number of potential risk events for any social actor (Rosser et al., 2011). Increasing rates of STIs such as syphilis in gay male communities indicate that there may be some merit to this argument. However, other research has drawn opposite conclusions, making it impossible to know whether or not more risk can be associated with the use of mobile apps (Lachowsky, Brennan, Souleymanov, MacLachlan, & The Cruising Counts Study Team, 2015). It is not particularly clear if the category of HIV status unknown men significantly differs between groups of gay men who use sex apps versus those that do not. It is clear, however, that gay men are interacting at higher levels through online applications, that gay men may not all use online apps in the same way, that apps facilitate sexual encounters between different types of gay men that may not have otherwise been likely and that different gay men may come to use sex apps with different assumptions about sex and risk (Rosser et al., 2011).

While interest in how gay men are using the Internet and other technological sources to find sex makes sense in the context of HIV prevention research, as critical social scientists we should be wary of some of its implications and how this research may be used to moralise the conduct of social actors. For instance, some researchers have performed quantitative studies to determine whether there is an association between viewing unprotected anal intercourse in pornography (which today is mostly viewed online) and the likelihood of having unprotected anal sex in real life (Stein, Silvera, Hagerty, & Marmor, 2013). Whether intended or not, this research frames bareback porn as a problem, as a form of media which can encourage sexual risk-taking and thus threatens population health. Though it does make sense that those who ultimately do bareback may be interested in watching bareback porn, the utility of this research certainly seems questionable. It is unlikely that bareback porn will diminish in popularity anytime soon and, in fact, bareback porn can be used by those who do not take risks in their sexual lives to fantasize about risk-taking.

Along with understanding social setting and Internet usage, risk factor research may also assess the sexual health literacy levels among different groups of gay men. Health literacy is the “ability to access, understand, evaluate and communicate information as a way to promote, maintain and improve health in a variety of settings across the life-course” (Gilbert, Dulai, Wexel, & Ferlatte, 2014, p. 3). Basically, this means evaluating what gay men know about HIV prevention (e.g. window period, undetectable viral load, efficacy of condoms, PEP, etc.) and how likely they are to incorporate this knowledge into their sexual practices in ways that foster effective prevention of HIV and STIs. Obviously not knowing or not fully understanding key aspects of HIV prevention—for example, how to get tested, what a test result means, etc.—can play a role in fostering ineffective risk management practices. Understanding sexual health literacy rates among at-risk groups helps us to understand where we need to improve our education efforts. The Sex Now Survey, as an example, asks a range of questions to gauge literacy levels (Ferlatte, Hottes, Trussler, & Marchand, 2014). The Resonance Project, as another example, is a community-based research project coordinated through CATIE that is currently assessing what gay men across the country know about new biomedical technologies (like PrEP and undetectable viral load) and how these tools may be used to modify prevention practices (Adam, Jackson, Patten, LeBlanc, & Girard, 2015). Indeed, a range of emerging research as well as commentary within the HIV prevention field has been interested in exploring how gay men understand and consequently process new biomedical information about risk and prevention.

However, full knowledge of risks does not always equate to effective risk management. The idea that people may take risks with their health even with complete awareness of both the potential negative outcomes and available preventive tactics is a well understood phenomenon within the HIV prevention field and within health studies more generally. The health belief model does not function well outside of theory (Bloor, 1995a). No one could convincingly argue that knowledge about risk and prevention is enough for a person to always practise safer sex or quit smoking, or eat more healthily. It is a generally accepted truth that numerable social, economic and political factors may render some individuals more vulnerable to illness.

Many in the HIV prevention field, particularly those working within a public health, health promotion and social work context, draw on the social determinants of health framework to describe this phenomenon (Ellis, Boodra, Maham, & Hai-Tadesse, 2011). This framework argues that there are a range of contributing social and economic factors that shape the health of individuals and communities (Rootman & O’Neill, 2012). This framework has critical capacities since it recognises the role of social forces on influencing the decision-making of social actors. These include: education status, social exclusion (e.g. homophobia), employment status, access to health care, gender, race, housing and aboriginal status (Rootman & O’Neill, 2012). These determinants play a role in facilitating access to quality health care and education about health maintenance that can foster positive outcomes and prevent illness. Dealing with social complexities and economic precarity can lead to negative health outcomes since individuals may lack the financial resources, social support and access to services necessary to maintain good health.

Congruently, intersectionality is another framework that has been adapted from Feminist studies to make sense of the ways in which multiple modes of oppression (sexism, racism, homophobia, classism, ageism, etc.) can intersect in the life of a single social actor to exponentially increase social vulnerabilities, potentially leading to increased sexual risk-taking and ultimately to negative health outcomes (Chown & Starr, 2013; Rapid Response Service, 2013). Within Canada (as in many Western countries), the HIV prevention field and the corresponding gay men's health movement has been heavily guided by the interests of white, Anglo-Saxon, middle class men. However, many gay men living in Canada do not fit into all or even most of these categories. Understanding the social contexts of risk has thus required HIV prevention researchers to be mindful of the ways in which intersecting modes of oppression experienced by different social actors *within* gay male communities can come to play a role in fostering negative health outcomes for the community as a whole.

It has been unequivocally demonstrated that psychological stress associated with these intersecting experiences of oppression, sometimes referred to as "minority stress," can lead to negative health outcomes for gay men (Herrick et al., 2011; Stall et al., 2003). And gay men who suffer from anxiety, depression, drug or alcohol addiction, sexual addiction, low self-esteem and psychological trauma are considered to be more likely to take risks with their health (Safren, Reisner, Herrick, Mimiaga, & Stall, 2010). Any psychological state categorised by ambivalence to remaining healthy or living, even if temporarily, can increase the chances of sexual risk-taking in the current moment (Adam, 2005). Further, any mental health state, like depression, that decreases a social actor's sense of self-efficacy may also lead to heightened risk-taking since social actors may feel less capable of preventing disease or adversity in their lives (Herrick et al., 2011).

Research in Ontario has postulated that for HIV-negative gay men, dealing with a stressful life event (e.g. being fired, financial crisis, death of a friend, end of a romance, diagnosis with an illness) can increase the chances of unprotected anal intercourse with a casual partner by up to 1.15 per times per stressful event (Calzavara et al., 2011). Some research has attempted to quantifiably confirm the correlation between low self-esteem (Moskowitz & Seal, 2010) and depression (Klein, 2014) with risky sexual behaviour. Both of these projects were unable to confirm their original hypotheses, with researchers unable to find statistically significant relationships between men reporting low self-esteem or depression with the abandonment of condoms. This does not mean that other research linking low self-esteem or depression with sexual risk-taking has been erroneous. However, it reminds us that outside of the context of research, the social aspects of sexual risk-taking are quite complex and can rarely be reduced to a single psychosocial element (Klein, 2014). Poor mental health does not always lead to sexual risk-taking and sexual risk-taking does not always lead to poor mental health outcomes.

Additionally, a growing body of research indicates that aiming to conform to gay male cultural standards of attractiveness and masculinity, what psychologists term "masculine socialization stress," can lead to low self-esteem that may facilitate sexual risk-taking (Safren, Reisner, Herrick, Mimiaga, & Stall, 2010). Research has gone as far as to seek correlations between sexual risk-taking with being overweight or obese—the original hypothesis being that those with less socially desirable bodies are more willing to take risks—but has not produced convincing results to support this association (Guadamuz et al., 2012). Nonetheless, standards of attraction in gay male communities are often premised on a young, white, athletic body type, thus non-white men are more likely, though not exclusively likely, to experience low self-esteem due to masculine socialization stress (Brennan et al., 2013). It is not uncommon to see profiles on gay dating and sex apps of men searching exclusively for white men. Along with race, gay men also surveil themselves based on age, penis size, circumcision status (cut or uncut), sexual roles (topping, bottoming, versatile) and gender performance. Many men on dating and sex apps assert a preference for "masc" men only. These men are looking for gay men who follow hegemonic standards of masculinity modelled after heterosexual men. When looking for sexual encounters or romance, failure to meet any one of these cultural norms can lead to rejection. Any form of psychological and/or social distress that lowers a person's sense of self-worth may reduce his ability to negotiate safer sex and momentarily reduce his ability to care about his health in the long-term. Taking a sexual risk may seem momentarily necessary when one is receiving romantic or sexual attention from a partner who can help to offset feelings of shame or undesirability (Adam, Husbands, Murray, & Maxwell, 2005; Downs, 2005).

One of the ways in which some gay men deal with the above issues is through drug consumption, which can temporarily increase confidence and self-esteem. Substance use is also a norm within many gay cultural milieus like circuit parties and bathhouses (O'Bryne & Holmes, 2011). In terms of sexual risk-taking, alcohol and drug consumption can lower one's inhibitions thus rendering one more likely to take sexual risks. Certain drugs, such as crystal meth, cocaine and MDMA may increase one's sexual drive. However, while drugs can increase sexual desire, they may make sustaining an erection more difficult. Medication for erectile dysfunction may be used to address this issue, as well as forgoing condoms (as some men find that wearing condoms makes maintaining an erection more difficult) (Adam, 2005, 2006). This obviously increases the risk of HIV transmission. If the drugs consumed are being injected, risks of both HIV and Hepatitis C transmission can also increase if needles are being shared. Research has also indicated that some men actively work on becoming intoxicated as a way to purposely lower their inhibitions so that they can calm their anxieties about HIV and STIs and take the sexual risks that they desire (Odets, 1995). Following edge theory (purposeful confrontations with risk to establish agency), this process has been termed boundary play in the HIV prevention literature (O'Bryne & Holmes, 2011).

In gay male party milieus, commonly found substances include alcohol, marijuana (weed, pot, cannabis), ecstasy/MDMA (E/M), ketamine (K), gamma-hydroxybutyrate/GHB (G), methamphetamine (speed), crystal methamphetamine (crystal meth/crystal/Tina), cocaine (coke, blow, snow), alkyl nitrite and amyl nitrate (poppers), steroids and prescription drugs (Viagra, anti-depressants and anti-anxiety drugs) (Public Health Agency of Canada, 2011). A smaller minority of gay men, about 10%, also inject drugs such as crack-cocaine, steroids and heroin (Public Health Agency of Canada, 2011). Many of the large-scale epidemiological surveys administered to gay men ask questions about drug use. For example, the M-Track survey asked the men to report drug consumption occurring less than two hours before sex or during sex (Public Health Agency of Canada, 2011, p. 28). The survey demonstrated that about 83% of men reported drug consumption just before or during sex within the last six months (Public Health Agency of Canada, 2011, p.29). This is not surprising considering recruitment occurred in bars and other places where alcohol is served.

Interestingly, the M-Track report contends that drug use is associated with higher levels of sexual risk-taking. However, they admit to not having actually measured the relationship between drug consumption and condom use, so this argument is mostly based on speculation (Public Health Agency of Canada, 2011, p. 27). Another component of the M-Track study looking specifically at MSM living in Montréal demonstrated a correlation between alcohol consumption, cocaine use and UAI (Lambert et al., 2009). This study was not able to find a correlation between crystal meth use and risk. The researchers found this surprising considering that crystal meth use has been believed to be a key risk factor among gay men and has arguably been part of a moral panic surrounding gay men's ostensible return to risky sexual behaviour in the transition to the biomedical era of HIV prevention (Dowsett, 2009). The researchers describe this discrepancy as a result of statistical power. Crystal use is just not as prevalent in Montréal as drinking or cocaine use and thus there was not enough data to support the link that they were hoping to make.

The interaction of these various risk factors I am describing (e.g. depression, homophobia, classism, racism, drug addiction, low self-esteem, childhood abuse, etc.) can create a multiplier effect where each issue compounds the other and greatly increases chances of HIV infection for an individual. Researchers in the HIV prevention field draw on the concept of syndemics to describe this synergistic relationship between different social and health epidemics. "Syndemics are a set of mutually reinforcing epidemics that together lower the overall health profile of a population more than each epidemic by itself might be expected to do" (Stall, Friedman, & Catania, 2007, p. 251). Within syndemic theory, the HIV epidemic is just one of a series of health epidemics that gay men, and in particular, highly marginalised gay men face, which play a role in reducing their overall quality of life. Data drawn from the Sex Now survey looking specifically at the impacts of syndemics on young gay men in Canada has found a strong correlation between cumulative anti-gay experiences (like harassment and forced sex) with psychosocial difficulties (like suicide ideation) and, in turn, higher chances of having unprotected sex with a casual partner with an unknown HIV status (Ferlatte, Hottes, Trussler, & Marchand, 2014). The critical capacity of syndemic theory within the realm of risk factor research is its ability to recognize that a multitude of social factors influence the health outcomes of an at-risk social actor and that no one health issue, such as HIV, can be exhaustively dealt with without addressing some larger systemic issues, including matters as seemingly disparate as homophobic discrimination in the workplace.

To summarise, HIV risk factor research aims to understand the mitigating elements behind sexual risk-taking with the intention of improving prevention education and programming. This work has critical capacities since it recognises the role of complex psychic and structural forces in people's lives and the relationship between socio-economic precarity and illness. Unquestionably, systemic oppression, mental illness and addiction have real effects on gay men's health and these issues need to be addressed if we are to effectively curb the epidemic. However, we should be wary of how an interest in psychological risk factors may pathologize any sex that falls outside of biomedical definitions of safety. For example, the belief that unprotected anal sex with a casual partner occurs because someone is suffering from a mental illness is a reductive understanding of sexual life. Such research can be considered to simply be extending psychology's and psychiatry's long history of pathologizing homosexual sex and non-normative sexual expression.

Similar arguments can be made for any explanation of sexual risk-taking based on an anti-oppression framework (e.g. intersectionality, social determinants of health, syndemic theory). While there is enough evidence to suggest that social marginalisation can lead to sexual risk-taking in some circumstances, it is important to remember that gay men who are not highly marginalised may also take sexual risks. One need not necessarily be depressed, anxious, unemployed, unattractive (by cultural standards) or addicted to drugs to have unprotected sex. It is quite possible for a relatively healthy, well-adjusted and socially privileged gay man to be at-risk for HIV and to seroconvert. However, anti-oppression risk factor research has a tendency to focus on all of the things that could possibly go wrong in the life of a gay man and to associate these issues with elevated sexual risk-taking. While this dynamic might be true in some (or even most) circumstances, it also creates a context where HIV infection continually becomes associated with oppression, marginalisation, poor mental health, addiction, etc. Despite the good intentions of researchers who make these claims, this ironically (and unintentionally) stigmatises HIV infections even further, because it positions each HIV infection as something that is entirely preventable and a product of some sort of social failure or just incredibly bad luck.

While, importantly, anti-oppression risk factors do not root this failure in the individual, it is ultimately individual social actors who have to assess themselves as being at-risk. And they must do so within a social context where HIV is considered to be a condition that occurs only when a series of misfortunate events have occurred. In this way, being at-risk for HIV is not just a confrontation with a potential health issue, but also a public acknowledgement of one's social precarity, which may add a significant weight or stigma to a possible HIV infection (Crawford, 1994). Despite the social actors' best efforts and intentions to manage their health, it is not always possible to control every possible ailment. For some social actors, it may not even be entirely clear what constitutes effective prevention and how to manage the uncertainties associated with new biomedical technologies. I will now explore risk factor research which examines these issues, beginning with an interest in relative risk reduction strategies before moving on to investigate treatment optimism research and AIDS optimism research.

Attitudes and Risk Management

A major area of risk factor research includes investigating how beliefs and attitudes about HIV prevention affect sexual decision-making. These studies, which are plenty in the field, measure and compare beliefs toward different forms of risk management (e.g. the effectiveness of condoms) in relation to sexual risk-taking practices. Sexual risk-taking is usually defined as unprotected anal intercourse and sometimes as unprotected anal intercourse with a casual partner or with a partner with an unknown or different HIV status from the individual taking the survey. This research also aims to understand how particular sexual scenarios shift beliefs and attitudes about risk. For example, one Australian study has demonstrated that HIV-negative men are more likely to have unprotected anal sex with partners with whom they have previously had sex with (protected or otherwise) or with whom they are more familiar (Zablotska, Grulich, Wit, & Prestage, 2011). In Canada, the Montréal portion of the M-Track study found the following contextual factors associated with heightened sexual risk-taking: length of a sexual relationship, interest in developing a relationship with a partner, sexual attraction to a sexual partner and history of diagnosed STIs (Lambert et al., 2009). The study attempted to find a correlation between the number of sexual partners a gay man has with his likelihood to take risks. Making reference to previous studies (i.e. Dudley, Rostosky, Korfhage, & Zimmerman, 2004), the M-Track researchers argue in their introduction that the link between promiscuity and sexual risk-taking has already been demonstrated. However, based on the Montréal data they were unable to confirm the correlation between having more sex and forgoing condoms. As I noted earlier in the discussion of Remis' research, who was also behind this Montréal study, this has not stopped epidemiologists from repeatedly associating promiscuity with increases in condomless anal sex. The Montréal study was also unable to find a link between beliefs in the risk reduction potential of undetectable viral load and sexual risk-taking, one of the major hypotheses of the HIV prevention field in the transition to the biomedical era of HIV prevention. I shall examine this hypothesis, known as treatment optimism, more closely in the next section.

Researchers in Australia have produced a tremendous amount of informative risk factor research looking at beliefs and attitudes. For one project researchers conducted an online survey with 2306 gay men to capture opinions about relative risk reduction strategies, such as serosorting, strategic positioning and factoring in viral load information (Prestage, Brown, Down, Jin, & Hurley, 2013). They discovered that most men considered safe sex to be interchangeable with the idea of condom use for anal sex and retained a fair degree of scepticism over other risk reduction strategies such as serosorting without condoms. Many men believed that undetectable viral load could have an effect on risk reduction, but most did not use this as their primary risk reduction strategy. This research also uncovered that HIV-positive men more so than HIV-negative men, as well as men (negative or positive) who have more recently had unprotected anal intercourse, are more likely to believe that undetectable viral load, serosorting and strategic positioning can reduce risk. Put differently, those who have recently taken a sexual risk are more likely to believe in the effectiveness of risk management strategies other than condom use.

Based on qualitative data gathered from this survey, four non-exclusive risk categories were constructed to make sense of the participants' belief systems: seeking certainty, regretful actions, nothing is safe and acting on beliefs. The first category, seeking certainty, refers to men who are challenged by a lack of concrete information over issues such as strategic positioning or undetectable viral load. These men are seeking more clarity over these issues to be able to make better risk management decisions. The second category, regretful actions, refers to men who engage in unprotected anal sex (perhaps incorporating other risk reduction strategies like serosorting) and who will then worry about the consequences after the risk has been taken. The third category, nothing is safe, refers to men who, at least in terms of anal intercourse, do not consider any form of sex to be safe enough. The fourth category, acting on beliefs, is the opposite of the last. This category refers to men who believe that they can reduce risk during anal sex without always strictly relying on condoms. These men are convinced that their risk management strategies are effective based on their experiences and not necessarily on verified scientific evidence. These four categories serve as a reminder that different gay men will process similar prevention information very differently.

The key argument made from this research is that uncertainty over the efficacy of various risk management practices was not necessarily based on a lack of quality HIV prevention information available in Australia, or on an inability of social actors to critically reflect on available information. Rather it was often based on difficult existential questions and whether the research participant felt prepared to deal with the possible consequences of living with HIV.

"Many men are actually torn between knowing the risk in risk reduction and taking that risk by doing it. This cannot necessarily be resolved by more knowledge but can possibly be aided by greater understanding of what reducing risk means" (p. 1358). This research is important because it demonstrates how each social actor comes to the discussion on HIV prevention with particular set of beliefs and attitudes about safety, knowledge and desire. HIV prevention is not just about information, but is fundamentally about how at-risk subjects process this information. It is not just a question of what a risk is, but a matter of what a particular risk signifies to a particular person at a particular moment in time.

The empirical work presented later in this dissertation asks very similar questions to this Australian study and will offer some similar findings. However, it will go further and demonstrate why it is that men develop tolerance or aversion to being at-risk and why they find serostatus uncertainty easier or more difficult to manage at particular moments in their lives. Nonetheless, it is important to examine risk factor research such as this Australian project to make it clear that such work can be nuanced and insightful. However, because such scholarship usually acquires knowledge through long surveys, significant elements of social context may be left out, which is where projects such as this dissertation can add value. This is especially the case with something as epistemologically, socially and politically complex as beliefs in the risk reduction potential associated with undetectable viral load, the topic of the next section.

Treatment Optimism Hypothesis

The association between an increased likelihood to have unsafe sex and a social actor's belief that a managed or undetectable viral load can eliminate the possibility for HIV transmission in the context of serovariant sexual relations is known in the HIV prevention field as *treatment optimism* (Chen, 2012). Treatment optimism is an epidemiological hypothesis, a speculation or theory about sexual activities that guides data collection and analysis. It derives directly from the health belief model that understands a social actor's uptake of risk management practices in relation to his perceptions about a potential risk and the effectiveness of available prevention strategies (Kalichman, Nachimson, Cherry, & Williams, 1998).

Treatment optimism is typically measured in surveys by asking a set of questions about sexual risk-taking (usually referring to unprotected anal intercourse, sometimes unprotected oral sex in earlier research) and then a set of questions regarding beliefs in the risk reduction associated with undetectable viral load or the infectivity levels of HIV-positive men who are on treatment. For example, the M-Track study in Montréal asked participants if they agreed or disagreed that an "HIV-positive man taking medications is less likely to transmit HIV" (Lambert et al., 2009, p.589). These variables are then correlated to see if there is a relationship between a willingness to forgo condoms and a belief that HIV medications can reduce the risk of transmission during instances of serovariant sex. As a research hypothesis, treatment optimism remains deeply intertwined with AIDS optimism, which is the theory that gay men are more likely to have unprotected anal sex if they believe that HIV is now a chronic manageable condition versus a death sentence (Adam, Husbands, Murray, & Maxwell, 2005). In fact, many of the first published works examined both of these forms of HIV optimism or biomedical optimism at once (Van de Ven, Crawford, Kippax, Knox, & Prestage 2000).[15] I will examine AIDS optimism more closely in the next section.

Treatment optimism began to emerge as a key research hypothesis in the HIV prevention field around the end of the 1990s when epidemiologists were trying to make sense of increasing HIV incidence rates in MSM communities internationally (Chen et al., 2002; Crepaz, Hart, & Marks, 2004; Katz et al., 2002; Wolitski, Valdiserri, Denning, & Levine, 1999). Combination HIV therapies (HAART/ART) were only recently made available. The long-term effectiveness of these medications and the reduced risks associated with undetectable viral load as a direct result of ART, were just beginning to be debated. At this particular time, most HIV experts would *not* argue that undetectable viral load could sufficiently reduce HIV risk to negligible levels (Tachet et al., 1999; Vernazza et al., 2000; Zhang et al., 1998). In other words, the development of the treatment optimism and AIDS optimism hypotheses were a *direct* product of uncertainty, to the unknown potentials of undetectable viral load. Take this passage from one of the earliest studies on treatment optimism as an example:

> Whether combination HIV therapies actually lower the infectivity of seropositive persons is presently unknown. The degree to which HIV-positive persons with undetectable viral loads are less infectious is also unknown. Thus, without evidence

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[15] Indeed, the terms treatment optimism, AIDS optimism and HIV optimism are sometimes used interchangeably. However, in this dissertation the term "treatment optimism" refers specifically to beliefs related to the risk reduction associated with undetectable viral load, "AIDS optimism" to the beliefs about HIV being a chronic manageable condition and "HIV optimism" or "biomedical optimism" to the combination of both of these hypotheses.

> to support reduced infectivity, beliefs that treatments reduce the threat of HIV infection create a potentially dangerous context for HIV risk behaviors. Uncertainties about reduced infectivity may therefore dilute the perceived risks of anal intercourse. Thus, increased rates of HIV transmission, possibly with treatment resistant strains of HIV, could ensue should HIV treatment statuses blur what have been the clearly understood risks of UAR intercourse [unprotected anal intercourse as the receptive partner] (Kalichman, Nachimson, Cherry, & Williams, 1998, p.559).

Thus as researchers came to confront the epistemic uncertainties associated with emerging biomedical technologies in the field, they began to immediately speculate how such uncertainties would lead to higher risk-taking behaviour among gay men. They transferred the epistemic uncertainty—the lack of clear knowledge about HIV treatment—to our investigations of gay male sexual relations and began to aggrandise social uncertainties, namely through increased HIV incidence and the emergence of drug resistant strains of HIV.

The exact origins of the treatment optimism hypothesis are tricky to locate with precision, as it appears that various researchers in Australia, Europe and North America simultaneously became interested in this topic almost instantly after the roll out of ART in 1996. One of the first original pieces of research on HIV optimism was published as a letter to the editor in the *New England Journal of Medicine* in 1997. Based on 54 interviews in San Francisco the authors argue that advances in treatment are affecting the decision-making of some “high-risk” HIV-negative gay men (Dilley, Woods, & McFarland, 1997). However, a year later these same authors would contradict themselves slightly by arguing that ART does not affect the sexual decision-making of the majority of gay men (Dilley, Woods, & McFarland, 1998).

Kalichman, Nachimson, Cherry and Williams (1998) claim to be the first to publish on the relationship between the perceptions of the risk reduction associated with undetectable viral load and sexual risk-taking. Based on interviews with 298 HIV-negative men they were able to “partially” confirm their hypothesis that men who have higher risk sex are more likely to believe that newer HIV medications can reduce the risk of HIV transmission. In the same year, Remien, Wagner, Carballo-Dieguez and Dolezal (1998) also supported the treatment optimism hypothesis among HIV-negative gay men based on data from just fourteen serodisconcordant couples who have had unprotected anal sex. Soon after, Vanable, Ostrow, McKirnan, Taywaditep and Hope (2000) argued that gay men may perceive HIV-positive partners with undetectable viral loads as being less infectious, yet they were not able to confirm whether such beliefs are strong enough to lead to unsafe sexual practices.

Reflecting on research produced in the late 1990s, Van de Ven, Crawford, Kippax, Knox and Prestage (2000) argue that no straightforward link between treatment optimism and sexual risk-taking could be firmly established. Many of these research projects have found few or no association between optimistic beliefs in HIV treatment and sexual risk-taking and statistically insignificant findings among small minorities of gay men who report being treatment optimistic. Importantly, all of these projects were unable to report on causality—that is, unsafe sexual behaviour may be *associated* with, but may not necessarily be *caused* by optimistic beliefs in HIV treatments (Crepaz, Hart, & Marks, 2004; Van de Ven, Kippax, Knox, Prestage, & Crawford, 1999). Treatment optimism research was trying to determine the social effects of the epistemic uncertainties associated with viral load knowledge, but only did so by ironically producing research with limited validly and generalizability—that is, by producing further epistemic uncertainty.

In general, early attempts to prove treatment optimism were mixed as more research began to disprove or greatly complicate the treatment optimism hypothesis (Elford, Bolding, & Sheer, 2002). In Scotland, Williamson and Hart (2004) argued that treatment optimism is not associated with increases in sexual risk-taking. In the US, Koblin, Perdue, Ren, Thiede, Guilin and MacKellar (2003) did not find that optimistic beliefs in treatment lead to sexual risk-taking among 813 younger gay men, with many of the men in their study being completely unaware of recent advancements in HIV treatments. A group of researchers calling themselves the International Collaboration on HIV Treatment (2003) examined treatment optimism in Australia, Canada and England. They found some links between optimistic beliefs in treatment and increased likelihood to take sexual risks. However, they argued that such optimistic beliefs are generally confined to a minority of gay men.

Another study in the US looking at a sample of 538 gay and bisexual HIV-negative men did find an association between optimistic beliefs and sexual risk-taking. However, their study argues that optimistic beliefs in treatment tend to *proceed* from a history of sexual risk-taking, rather than optimistic beliefs being a casual factor in sexual risk-taking (Huebner, Rebchook, & Kegeles, 2004). In other words, having optimistic beliefs in treatment tends to serve as a "post-hoc rationalization" of sorts after a social actor has had unprotected anal sex (Huebner & Gerend, 2001). Vanable, Ostrow and McKirnan (2003) found that HIV-positive men with undetectable viral loads were actually *less* likely to have unprotected anal sex, even though most believed that having an undetectable viral load can reduce risk. And finally, performing a meta-analysis on studies about HIV-positive gay men and treatment optimism, Crepaz, Hart and Marks (2004) argue that available research at the time suggested that ART does not greatly affect sexual decision-making. HIV-positive men on ART are just as statistically likely to take sexual risks as those not on HIV medication.

To recap, immediately after the advent of ART in 1996, public health researchers, faced with the uncertainty associated with existing biomedical evidence, became interested in examining how optimistic attitudes in the benefits of treatment on prevention would lead to increases in sexual risk-taking. The idea of treatment optimism was thus produced and circulated by HIV scientists prior to there being any concrete evidence to support this claim. In other words, the genesis of treatment optimism hypothesis appears to have been grounded less in the lived realities of gay men in the late 1990s and more on the speculation of scientists trying to explain epidemiological statistics. Indeed, taken as a whole, early research on treatment optimism generally offered mixed conclusions. While certain projects were able to demonstrate some relationship between sexual risk-taking and optimistic beliefs in treatment, initial scientific evidence proving the treatment optimism hypothesis was often unconvincing, not easily generalizable and was usually unable to demonstrate whether treatment optimism was in fact a key motivation behind sexual behaviour.

Nonetheless, the treatment optimism hypothesis has endured, remaining a staple theory during the transition to the biomedical era of HIV prevention, especially as more biomedical research began to emerge on the risk reduction associated with undetectable viral load. If the treatment optimism hypothesis assumes that gay men will have more unprotected anal sex the more they believe that undetectable viral load can reduce risk, then from this perspective, the more biomedical evidence there is supporting the risk reduction potential of undetectability, the more we can speculate that gay men will use this information to justify sexual risk-taking. Indeed, this is exactly what has occurred during the transition to the biomedical era of HIV prevention. After the launch of the Swiss Report which enthusiastically supported the relationship between undetectability and risk reduction, many in the HIV prevention field began to speculate even further that more gay men would start to become overly reliant on viral load information and would begin to engage in unprotected anal sex once one or more partners had achieved an undetectable viral load (Hosein, 2008; Rapid Response Service, 2014).

However, as I argued above, during the transition to the biomedical era of HIV prevention, HIV experts and community members have not rushed to a consensus on the risk reduction associated with undetectability. While the benefits of undetectable viral load on risk reduction practices would become more apparent throughout the first decade of the 2000s (namely due to the biomedical studies already discussed above), the epistemic uncertainty associated with existing knowledge created a context whereby some HIV experts began to worry that the increasingly popular message that undetectability could reduce HIV risk would actually lead to more sexual risk-taking among gay men and thus more HIV infections, as well as the spread of other STIs (Adam, 2011; Hosein, 2008). Following Douglas, experts tend to be extremely suspicious of how lay people will interpret and utilise new risk knowledge (especially complex knowledge), believing that they will often under-evaluate more proximate dangers. At its basis, then, the treatment optimism hypothesis represents researchers' doubts over gay men's capacities for risk reflexivity. It reflects their concern that gay men will be unable to accurately gauge the merit of emerging data on viral load and HIV prevention.

In 2014 the Ontario HIV Treatment Network (OHTN) produced a summary sheet of key research projects on treatment optimism to help those in the field make sense of this ostensibly growing problem (Rapid Response Service, 2014). Once again, following the language of IE, I consider this to be another example of a ruling relation. It is an example of an institutional document which is meant to coordinate the social by influencing how researchers, policy makers and prevention educators respond to at-risk clients' interest in undetectable viral load. The purpose of this summary sheet is to distil vast amounts of convoluted scientific information to a broader non-scientific audience who is responsible for implementing policy and education in the HIV prevention field. It is an explicit example of the bridge between knowledge production practices and governing practices.

As an example of a ruling relation, this summary sheet demonstrates the significant role of treatment optimism hypothesis research and how this research serves as a ruling form of knowledge. Following Namaste et al. (2012), epidemiological research not only reflects the social, but actively constructs the social when it is mobilised in the interest of policy and programs. I emphasise this point to make it clear the profound social and political significance epidemiological research has in the HIV prevention field and to emphasise how essential the treatment optimism theory has been to understanding gay male sexual behaviour. The deep-seated concern that knowledge on undetectable viral load may lead to increased sexual risk-taking and thus increased HIV incidence has been pervasive among HIV experts during the transition to the biomedical era of HIV prevention. It is a concern that drives research projects and governing practices.

A significant portion of treatment optimism research highlighted by the OHTN examines the issue from the perspective of HIV-positive gay men (Chen, 2012). These studies often do find some association between increased sexual risk behaviours (i.e. UAI) and treatment optimism among HIV-positive gay men (Brennan, Welles, Miner, Ross, & Rosser, 2010). A study with 217 HIV-negative gay men in Amsterdam has confirmed a cause and effect relationship, arguing that among HIV-negative gay men treatment optimism leads to sexual risk-taking, versus past risk-taking leading to the development of optimistic beliefs in treatment (Stolte, Dukers, Geskus, Coutinho, & Wit, 2004). However, most of the participants in this study did not believe that ART made condoms less necessary. Those who were treatment optimistic made up only a minority of the sample. A study in Australia confirmed that HIV-negative gay men in serovariant relationships do use undetectable viral load information when choosing to have unprotected sex with their HIV-positive partners (Prestage et al., 2009). However, both groups of HIV-positive men examined in the study, those with detectable and those with undetectable viral loads, were just as likely to engage in unprotected sex with their HIV-negative partners regardless of their viral load status. A study in the US looking at HIV-positive gay men argues that treatment optimism also leads to more unprotected anal intercourse in the context of serovariant casual relations (Joseph, Flores, Parsons, & Purcell, 2010). After examining this research, the OHTN contends that there is an association between treatment optimism and sexual risk-taking, though this is more likely to be the case among HIV-positive gay men and there are still contradictions and uncertainties in the data.

In summary, some research projects have been able to find correlations between optimistic beliefs in HIV treatment and an increased likelihood of having unprotected anal sex, particularly among HIV-positive men. However, comparing the data from multiple studies exposes a series of contradictions and a general lack of consensus. These studies are not able to confirm cause and effect relations and are not particularly generalizable for all HIV-negative men. Treatment optimism remains an established *hypothesis* in the HIV prevention field that continues to be referenced to make sense of increases in HIV incidence and proclivities towards sexual risk-taking among gay men (Remis et al., 2014). However, researchers have not been entirely successful at proving this relationship.

It should not come as a surprise that the research described above consistently indicates that HIV-positive men are more treatment optimistic than HIV-negative men since positive men, as a result of their diagnosis and undergoing frequent HIV related medical care, will be far more educated about viral load and its impact on prevention. Knowledge of undetectability is tantamount to it having an effect on people's lives. Moreover, HIV-positive men also have more at stake in believing in the risk reduction potential of undetectable viral load since this association recast their positions from one of posing a high risk to one of posing little to no risk. It should also not come as a surprise that those HIV-negative men in longer-term serovariant relationships are also more treatment optimistic since they would be introduced to the idea of viral load in the context of a committed relationship. Yet, these perspectives may not speak to all gay men who are at-risk for HIV. As the interview data introduced later will demonstrate (I will look specifically at treatment optimism again in chapter seven), there are many HIV-negative gay men who do not know or who only vaguely know about the risk reduction potential associated with undetectable viral load, or who remain sceptical of its use value in prevention practice.

Additionally, treatment optimism research, like a significant bulk of research interested in HIV prevention and gay men that I have been examining in this chapter, zooms in on the narratives of those who have taken sexual risk, and in particular, those who have recently had instances of unprotected anal sex. Quite literally, scientists select out those who haven't had unprotected anal sex with partners with mixed or unknown statuses in their attempts to understand the effects of undetectable viral load. While this interest in understanding the underlying motivations for "high risk" behaviour may be logical—at least from an epidemiological point of view— it misses an opportunity to understand how information on undetectable viral load may be influencing sexual practice more broadly and what role it might be playing in risk avoidance practices. Referring back to the discussion on critical social science first had in the introduction, by focusing on risk factors and UAI, epidemiological narratives on treatment optimism flatten out the social. The treatment optimism hypothesis is a theory premised on the health belief model that focuses on an *individual's* motivation for risk-taking—thus the complexity of social interaction is reduced. The treatment optimism hypothesis does not provide us with a robust understanding of how undetectable viral load is affecting social relations between gay men, even though an awareness of these social relations is vital to understanding how risk is managed and negotiated in everyday life.

Moreover, when we focus only on the risk-related narratives of those engaging in “higher risk” practices (i.e. UAI), we may be ignoring the diverse ways in which gay men are managing risk in their lives and may be focussing on those men who have a higher tolerance to risk and increased preferences for sexual risk-taking. Yet, if only a small minority of gay men are actually demonstrating treatment optimistic risk behaviours, what might there be to learn from the stories of the majority of gay men who are not? What are the diverse ways that those at-risk are interpreting and incorporating undetectability into their sexual practice? How exactly is information about undetectable viral load changing risk negotiations and sexual ethics?

As a research hypothesis, treatment optimism only makes sense in the historical context of the transition to the biomedical era of HIV prevention. One of the defining characteristics of this period is the development of evidence and speculation, but not unambiguous scientific proof for gay men, that undetectability could reduce the risk of HIV transmission. If we know with absolute certainty that undetectability can reduce risk of transmission to negligible levels then the treatment optimism hypothesis no longer becomes a worthy line of scientific inquiry; because even if men are having unprotected anal sex after factoring in undetectable viral load information, their prevention strategy will be more or less effective. However, biomedical research during this period was marred by epistemic uncertainties that made it impossible to make generalised claims about the prevention benefits of undetectable viral load.

From the point of view of public health researchers, these substantial epistemic uncertainties generated a potential problem whereby everyday social actors may take heightened sexual risks based on overly optimistic attitudes toward biomedicine. The impact of epistemic uncertainty on sexual behaviour was one that needed to be understood. Treatment optimism research thus represents the transference of uncertainty from the realm of biomedical research onto sexually active gay men, turning gay men into at-risk subjects whose behaviour is monitored in relationship to the epistemic uncertainty associated with emerging information on viral load. Put differently, the epistemic uncertainties associated with biomedical knowledge production practices is the lens by which scientists have tried to make sense of gay male sexual behaviour. However, in collecting information on gay male sexual behaviour, these scientists have been unable to clearly demonstrate the link between treatment optimism and sexual risk-taking. The data has actually produced a range of contradictory information and has created additional epistemic uncertainties since the treatment optimism theory is rarely generalizable and cannot demonstrate cause and effect relationships. Uncertainty fosters more uncertainty.

The treatment optimism theory is thus a solid example of how the HIV prevention field has failed to achieve a stabilising point in its third decade. Biomedical scientists have failed to come to a consensus on the risk reduction of undetectable viral load among gay men. This epistemic uncertainty has lead to the development of social and political uncertainties, as various experts in the HIV prevention field have become concerned with how to adjust policy and programs in ways that will support effective risk management practices and not increase incidence rates (as already discussed above). To address these uncertainties scientists have aimed to capture the relationship between treatment optimism and sexual risk-taking. They have, however, only produced uncertain results.

As I demonstrated in my review of risk assessment research, the science confirming the link between undetectability and risk reduction is relatively new and exciting in terms of its capacity to shift the relationship between risk and serovariant sex. However, barely a beat was missed from the production of these research findings to the widespread production of distrust of gay men—that gay men would be overly treatment optimistic and ultimately would use this scientific knowledge to justify their sexual risk-taking. Indeed, as argued above, the concern over treatment optimism behaviour actually *precedes* the development of randomised control trials investigating the risk reduction associated with undetectable viral load. Arguably, more attention, especially in Central Canada, has gone into critiquing the benefits of undetectable load findings and associating this dynamic with the potential for more sexual risk-taking, than actually educating gay men on the advantages of treatment as prevention in a clear and forceful manner.

To conclude, let us return to one of the key critical questions guiding this literature review. How is epistemic uncertainty related to emerging research being handled? With treatment optimism research we can see the ways in which some HIV experts, faced with uncertainty over emerging biomedical evidence, have come to problematize (even if unintentionally) the behaviour of gay men through this uncertainty. While treatment optimism research has not necessarily been successful at proving its central claim, the concern that gay men may lack the necessary risk reflexivity skills to make sense of emerging biomedical technologies endures and continues to play a direct role in shaping the epidemiological narrative of this epidemic among MSM in Canada (Remis et al., 2014). A similar argument can be made for the AIDS optimism hypothesis, a parallel branch of risk factor research.

AIDS Optimism Hypothesis

The treatment optimism hypothesis has clear resonance with the AIDS optimism hypothesis. AIDS optimism is the belief that due to the effectiveness of ART and HIV becoming a chronic manageable condition, some gay men have become more complacent when it comes to safer sex (Adam, Husbands, Murray, & Maxwell, 2005). Returning back to the risk theory introduced in chapter one, when social actors make risk management decisions they have to factor in the significance of the potential harm. If they perceive these harms to be more innocuous or easily manageable, then the stakes of a particular risk management decision might not seem as high and the benefit associated with taking a risk can override any harms to be experienced in the future.

Many research projects that examine treatment optimism also ask questions about AIDS optimism. For example, the M-Track project in Montréal specifically asked men whether they agreed or disagreed with the statements “I am less concerned about getting HIV now that better anti-HIV medications are available’’ and ‘‘HIV/AIDS has become a controllable disease (like diabetes)’’ (Lambert et al., 2009, p.589). In this instance, the researchers were unable to find a correlation between increased sexual risk-taking and agreeing with these statements. Therefore they were unable to confirm the AIDS optimism hypothesis. A study in Amsterdam with HIV-negative gay men found that the majority of participants did not agree that HIV was less of a threat because of ART or that ART was highly effective in curing HIV/AIDS (Stolte et al., 2004). However, they did find some correlation between agreeing that HIV was less of a threat because of ART and a shift to unprotected receptive anal intercourse. Nonetheless, despite the fact that the AIDS optimism thesis is often hard to prove within evidence-based medicine, it has remained one of the primary rationales offered by experts in the field to explain ostensible increases in sexual risk-taking among gay men during the transition to the biomedical era of HIV prevention (Adam, Husbands, Murray, & Maxwell, 2005). Once again, we see the ways in which uncertainties about the benefits of biomedical technologies become used to make sense of gay male sexual behaviour.

Let us reflect on this issue critically for a moment. On the one hand, the AIDS optimism hypothesis is a logical speculation. The idea that HIV will not likely lead to AIDS can surely play a role in how at-risk social actors interpret risk and how they envision themselves to be at-risk. There is certainly a qualitative difference between contracting HIV in 1993 versus 2003 versus 2013 as a result of available medications. However, on the other hand, Adam et al. have argued that the AIDS optimism hypothesis simply serves as another way to blame and responsibilize gay men for continued HIV incidence (Adam, Husbands, Murray, & Maxwell, 2005). Rather than focusing on the plethora of social factors (e.g. ageism) and contextual elements (e.g. serostatus assumptions in bathhouses, explained further in the next chapter) that might lead some men to take sexual risks, the AIDS optimism hypothesis presents gay men as naïve and somewhat reckless individuals who lack the critical reflexivity necessary to process new prevention knowledge. Following Douglas, lay people are envisioned as fools.

As an example of the AIDS optimism hypothesis in action, in December 2010 the New York City Department of Health released an online video called "It is Never Just HIV." The video was specifically targeting young gay men, especially Black and Hispanic gay men who have some of the highest rates of infection in the New York City (New York City Department of Health and Mental Hygiene, 2010). Over ominous music and graphic images of illness (a disturbing close up shot of anal cancer in particular), the video warns us about the range of health issues associated with HIV (they focus on osteoporosis, dementia and anal cancer). Clearly, the goal of the video is to shock gay men out of their AIDS optimism—be warned, you can control your HIV infection with available medications, but you cannot control all of its effects on your health. From the perspective of in/capacity theory, risk is being used as an emotion management strategy to govern gay men (though we might also consider other key emotions here like anxiety, shame, shock and disgust) through an emotional campaign. In particular, the campaign is trying to use the fear of risk in order to affect young gay men, to help them understand that their current evaluation processes around HIV infection (that is, what the actual gravity of the threat is) are significantly misguided. In other words, you are *more* at-risk than you think you are, there is *much more* at stake than you believe. You should thus be more fearful and, in the language of governmentality theory, conduct your conduct accordingly. The emotion management strategy is a moral one, because it is not an outside threat to a social actor that is being stressed here, but the social actor's own response to this threat that is causing potential to experience future pain. Social actors are being encouraged to adjust their behaviour accordingly to address this fear, to take up safer sex measures and testing to reduce the effects of HIV risk in their lives.

There is some truth behind the message as well as the sentiment of this video. For a very significant majority of gay men diagnosed in Canada during the transition to the biomedical era of HIV prevention, HIV will not be a death sentence. However, there are still a range of complicated health issues that those living with the virus may face. These can be due to the virus itself (which can cause inflammation throughout the body and periodically jeopardize regular immune system functioning) or due to the toxicity of the treatments which place a heavy burden on the body's organs (the long-term effects of a life on ART are still not clearly known), or from complications with other co-morbidities (HIV and other health issues like Hepatitis C) (CATIE, 2009; CATIE, 2013). Some health issues associated with living with HIV include increased risk of: depression, anxiety, chronic fatigue, physical pain (including immobility and episodic disability), kidney failure, dementia and short term memory loss, osteoporosis, heart disease, nausea, diarrhea, diabetes and various cancers (CATIE, 2009; CATIE, 2013). Earlier HIV treatments also led to lipoatrophy and lipodystrophy, redistributions of fat within the body, which can lead to very noticeable deformations on the face and neck, as well as fat accumulated on the stomach, sometimes known as "AIDS Belly" (Persson, 2004; CATIE, 2009). While many of these side effects have been reduced with newer treatments, some critical scholars have argued that the side effects of HIV treatments are routinely ignored or minimised within the context of HIV having become a chronic manageable condition (Gagnon & Stuart, 2009; Persson, 2004). Importantly, some HIV-positive persons may not respond well to treatment and can still develop and die from AIDS. Those with access to good medical care and other health related services (e.g. for fitness, mental and spiritual wellness, etc.) are more likely to stay well. And finally, unlike diabetes, another chronic condition that HIV is routinely compared to, HIV remains an infectious ailment. This is something that those living with HIV have to be continually mindful of their entire lives as they monitor their viral load levels and CD4 counts (and disclose their HIV statuses to prevent criminal charges). It is necessary to put these ideas forward not to paint a picture where living with HIV is deemed impossible and where we ignore the obvious advancements in available treatment. Nonetheless, we should remain mindful that the biomedical narrative of HIV shifting to a manageable condition does have the tendency to erase the challenges of living with the virus (Gagnon & Stuart, 2009).

While the “It is Never Just HIV” video is American, its popularity online caused CATIE to release a statement discussing the effectiveness of the communication strategy employed (Knowles & Challacombe, 2011). To determine whether or not the video was justified, CATIE turned to literature on fear-based campaigning to see if such an approach is effective (Knowles & Challacombe, 2011). Based on their review of the literature they argue that fear-based campaigning does not work. In the HIV prevention field, such campaigns generally do not lead to the uptake of condoms and there have actually been some associations between fear-based messaging and the decrease use of condoms. Fear-based campaigns have a high probability of leading to denial, othering, ridicule, minimizing and avoidance.

Following de Courville Nicol (2011), CATIE’s reaction to the campaign is not that surprising as emotional campaigns that employ a rhetoric of fear are often considered to be ideologically suspect versus those that use a rhetoric of desire. Within our advanced capitalist era, our emotional economy is often organised around ideas of healthy self-realisation that favour expressions of socially acceptable desires rather than the negation or disciplining of desire. All HIV prevention campaigns have emotion management components that intrinsically include the self-regulation (affecting automatic, habitual, non-reflexive based agential practices) and self-management (affecting emergent, deliberate, reflexive based agential practices) of social actors (de Courville Nicol, 2011). However, campaigns that use a rhetoric of desire invoke the association between a force and a pleasurable outcome, so that fear is overcome in the implementation of a desire that is moral. Rather than using fear to prevent people from having unsafe sex, HIV campaigns can use desire to foster having safer sex. Many of the education examples I have examined so far above such as HiM’s “Know your Risk” or ACT’s and GMSH’s pamphlet on oral sex, all seek to manage risk and uncertainty (fears) by implementing a desire (precaution, certainty, confidence) that is considered moral. These campaigns are all trying to get men to practise safer sex, but are doing so through emotion management practices that empower gay men to do so, that cultivate a desire to implement effective prevention. In this context, having safer sex is being framed as an emotionally satisfying experience.

However, campaigns like “It is Never Just HIV,” primarily utilise the rhetoric of fear. They invoke the association between a force and negative outcome, so that risk (a fear) is overcome by the disciplining of a desire that is considered to be immoral. And thus the issue at stake with fear-based campaigns is not that they use fear, but that they construct certain desires as being immoral. In this case, we are speaking of desires that are associated with sexual behaviour. This campaign is also encouraging gay men to adopt safer sex practises, but it does so by presenting the desire for unsafe sex as morally dubious. By amplifying risk through the emotion management mechanisms of anxiety, shame, shock and disgust, social actors are meant to question and adjust their prevention practices. In this context, not having safer sex is being framed as an emotionally painful experience.

I will return to address the issue of emotions and emotion management more thoroughly in our next chapter and again in chapter six. Yet I include this example here to remind readers that all of the scientific data that I have been discussing in this chapter, when turned into governing practices (particularly education material), have emotion management components that are evaluated for fostering or alleviating social and political uncertainties. In this case, the emotion management strategy employed is being critiqued for fostering HIV stigma and encouraging risk-taking rather than preventing it. Implied in this critique is that there is a better way to govern and that some emotion management strategies are preferable to others.

Indeed, in their statement CATIE describes how various activist and community groups have developed different opinions about the video (Knowles & Challacombe, 2011). Some argue that its approach is necessary to scare people a little in order to get the message across, especially among younger gay men who, having not experienced the ravages of the AIDS epidemic directly, have perhaps become somewhat complacent. Conversely, others have argued that such an approach stigmatises gay men by placing them as vectors of disease and that the campaign is ultimately anti-sex (though, the final message is for men to use condoms, not to give up sex) (Knowles & Challacombe, 2011). Thus on the one hand, young gay men are apathetic and need to be shocked into caring about HIV again since they are unfamiliar with the real risks of living with the virus. On the other hand, others argue that forcibly drawing attention to those risks stigmatises the disease and those living with it and will actually discourage gay men from getting tested or from making proper prevention choices. In both cases, it appears that gay men have no self-reflexive capacity to consume knowledge about risk.

In the next chapter, I will examine more closely how HIV prevention is moralised and politicised at the community level. The purpose of bringing in this prevention campaign here is to demonstrate the link between risk factor research and the development of education material and commentary within the HIV prevention field, between knowledge production and governing practices. Researchers hypothesize that HIV incidence is due, at least in part, to AIDS optimism. They then seek to confirm this hypothesis through evidence-based surveys. They are, as we have seen, not always able to confirm the correlation between holding optimistic beliefs about living with HIV/AIDS and sexual risk-taking. Nonetheless, the AIDS optimism thesis, along with the treatment optimism thesis, endures. Campaigns such as “It’s Never Just HIV” are developed as a way to respond to this concern and end up provoking contentious debate across national borders. These debates either hinge on framing younger gay men as being AIDS optimistic, apathetic to the epidemic or careless risk takers, or they minimise the risks associated with living with HIV as part of socio-political critique against HIV stigma (I will return to this latter issue again in the next chapter). To address this issue, organisations like CATIE critically reflect on the communication strategy employed. But ultimately the key arguments raised by the campaign go unanswered and we are left, once again, in an uncertain place. We are not only uncertain about the manageability of HIV infection and its relationship to increased sexual risk-taking, but we are also uncertain about what we should say about this issue and how we should communicate this uncertainty, lest we produce HIV stigma.

The lack of consensus in the field over how to frame the seriousness of HIV infection is undoubtedly one of the defining characteristics of the HIV prevention field during the transition to the biomedical era of HIV prevention. Similar to the treatment optimism hypothesis, the AIDS optimism hypothesis also clearly demonstrates how the HIV prevention field has failed to achieve a stabilising point in its third decade. Knowledge production practices and governing practices continually struggle to manage the risks associated with new biomedical technologies. While other researchers have critically addressed the manageability of HIV infection more comprehensively (Gagnon & Stuart, 2009), the above discussion has demonstrated how there has been tremendous ambivalence in the field toward the framing of HIV infection as a “chronic manageable condition.” One the one hand, it *is* a chronic manageable condition, especially compared to a diagnosis in prior decades. But on the other hand, this framing may severely reduce the severity of the illness and potentially encourages sexual risk-taking.

The AIDS optimism hypothesis also demonstrates the dynamic interplay between epistemic uncertainties and social and political uncertainties. Social scientific research has been unable to verifiably prove that gay men are more likely to take sexual risks due to HIV having become a manageable condition. However, they have not been able to completely disprove this theory either, or dispel interest in this topic. Once again, this creates challenges for community educators who must effectively reach at-risk clients. One solution has been to use emotional campaigns that use a rhetoric of fear as a way to encourage condom use. Yet these create a range of social and political uncertainties, including both the stigmatisation of HIV-positive persons and possibly the encouragement of risk-taking behaviours. Thus the very governing practices meant to address risk-taking and help gay men are also made accountable for fostering risk-taking and hurting gay men.

To summarise, just like with treatment optimism research we can notice that faced with uncertainty over emerging biomedical evidence—in this instance, what a lifetime of living with HIV will be like—researchers have come to problematize the behaviour of gay men through this uncertainty. Despite not being able to successfully prove the AIDS optimism hypothesis, the concern that gay men lack the necessary reflexivity to evaluate the benefits of improved HIV medications endures. I will return to the notion of AIDS optimism in the next chapter.

Risk Factor Research: Summary

Risk factor research is a very important domain of scientific work on gay men that aims to understand the underlying motivations and contextual factors for sexual risk-taking in the interest of generating prevention programming, education material and policy adjustments that could improve the epidemic. Risk factor research that assesses the beliefs held by gay men about risk management strategies can be useful for helping us to target our education messages. However, this research has a tendency to problematize the beliefs and attitudes of gay men by continually associating these beliefs with increased risk. For example, we ask gay men for their opinions on the risk reduction associated with undetectable viral load and immediately we become interested in determining whether this leads to more unprotected anal sex. There is a continual distrust of gay men cultivated through this work, a concern that gay men will use available knowledge incorrectly and will take more sexual risk. And while this research may be helpful, it does not fully capture how men are making meaning out of sexual experiences and the political tensions that exist because of HIV prevention. It offers limited reflections on the role of desire or pleasure. And it does not explore the way in which the HIV prevention field itself, as well as state driven policies to govern HIV risk, can play a role in fostering risk. These more critical dimensions of social science will be explored in the next chapter.

Unquestionably Uncertain: Conclusion

In this chapter, I closely investigated the dynamics of the HIV prevention field by looking at key examples of ruling forms of knowledge and ruling relations in the field, examples of research and institutional documentation with the recognised capacity to organise the social. This examination was guided by the uncertainty triad developed in chapter one with a specific emphasis on knowledge production and governing practices. What types of knowledge are being produced about gay male HIV prevention during the transition to the biomedical era of HIV prevention? How is epistemic uncertainty related to this research being handled? How are various institutions and HIV experts responding to emerging data on HIV and to the uncertainty associated with existing prevention technologies? And how is this uncertainty being moralised and politicised at different social sites?

To answer these questions I focused on three branches of ruling forms of knowledge: risk assessment, risk surveillance and risk factor research. Risk assessment research qualifies risk and effective risk management. Risk surveillance quantifies risks within the population. Risk factor research then comes in to understand why social actors take sexual risks and attempts to correlate a series of behaviours, attitudes and psychosocial dynamics with increased risk-taking. At their core, these research domains seek to problematize sexual risk-taking and determine which groups and social dynamics are the greatest threat to population health. Whether accurate depictions of reality or not, the knowledge produced in these domains is continually used by HIV experts to increase concern over the epidemic and garner additional funds for HIV research and programming. All of these domains of research work together to produce subjects of risk—that is, topics and debates about the sources of risk and what constitutes effective risk management at the individual, community and broader population levels. These discussions turn HIV-negative gay men into at-risk subjects, into social actors who are understood and governed by their relationship to serostatus uncertainty and who are then expected to govern their own conduct in relation to serostatus uncertainty.

Through my critical analysis of these ruling research domains I have demonstrated that things remain unquestionably uncertain. The HIV prevention field in Canada has failed to achieve a consensus on key and emerging risk management practices during the transition to the biomedical era of HIV prevention. It has failed to reach a stabilising point, a synergy between knowledge production practices and governing practices. Instead we have witnessed the continual proliferation of uncertainty in its third decade. Under the veneer of concepts like "safer sex," "low risk," "at-risk," "significant risk," "undetectable viral load" and "chronic manageable condition," exist vast differences of opinion on the efficacy of available prevention practices. Consequently, these concepts have become mobilised and politicised in disparate ways, creating contradictory and ambiguous governing practices that sexually active social actors must navigate. It is through the interview data presented in the latter half of this dissertation that I will explore the nuances of this navigation work, which marks the third domain of the uncertainty triad, experiential uncertainty.

As discussed in chapter one, the goal of any research field is to minimise epistemic uncertainty, to reduce the overall number of limitations associated with current research practices in order to produce more valid and generalizable findings on a given issue. While no doubt this has been the case in the HIV prevention field, we have also witnessed a diverse number of ways in which various HIV experts have aggrandised or minimised epistemic uncertainties related to research in order to achieve particular biopolitical ends, in order to encourage or critique different governing practices. We have also witnessed how research that has sought to understand and control social and political uncertainties, particularly those associated with emerging biomedical tools, has only produced more epistemic uncertainty, creating a convoluted and unclear picture about gay men and sexual risk-taking.

Looking at various branches of research, I argued that risk surveillance and risk assessment research play a role in producing and cultivating uncertainty in multiple ways. Epidemiological statistics are used to "beat-up" the epidemic. Serostatus uncertainty—not knowing with absolute certainty whether one remains HIV-negative—has become framed as an even greater threat to population health during the transition to the biomedical era of HIV prevention. Epidemiologists continually question the certainty of established HIV prevention methods and raise doubts about the benefits of emerging biomedical technologies. We have seen the ways in which community organisations have been extremely uncertain and hesitant to appear too optimistic about advancements in biomedical technologies and how policy developments, such as the criminalisation of HIV non-disclosure, have also erred on the side of caution. Indeed, one illustrative CATIE post on HIV prevention has referred to our position as one wherein we are “Certainly Uncertain” (Wilton, 2012a). And finally, the treatment optimism and AIDS optimism hypotheses tend to transfer this uncertainty directly onto gay men, as scientists begin to hypothesize that social actors will use emerging biomedical technologies to justify sexual risk-taking. Thus while HIV experts unavoidably generate epistemic uncertainty through their knowledge production practices (all research will have limitations and unknowns), its moral implications are shifted onto everyday social actors trying to manage risk.

Thus the transition to the biomedical era of HIV prevention can be characterised by the production, cultivation and politicisation of uncertainty. Despite significant advancements in the field and increased knowledge about HIV prevention, there is always a degree of doubt, speculation, ambiguity and contradiction in emerging science that HIV experts have to contend with and which comes to be used to make sense of gay male sexual relations. While this is not necessarily a new dynamic in the HIV prevention field—indeed, managing epistemic uncertainty has always been a part of HIV prevention science since the beginning of the epidemic (Epstein, 1996)—the proliferation of types of research such as treatment optimism and AIDS optimism demonstrate the field’s vested interest in trying to understand the effects of this uncertainty in everyday life.

In the next chapter on critical social science and humanities perspectives on HIV prevention, I will spend some more time explicitly drawing on the analytic concepts from the various schools of critical thought on risk and uncertainty, in order to tie all of these critical findings on the HIV prevention field together. It is, however, without a doubt that the above reading of the prevention field in this chapter has been greatly indebted to these ideas. From a risk society theory we can clearly see how knowledge production practices and institutions are aiming to adapt to new biomedical technologies, new social practices and new forms of self-identification (the latter of which will become even more obvious in the next chapter). While this process of risk reflexivity sometimes has a progressive and agreeable quality (for example, when CATIE diligently makes sense of convoluted research findings to make things easier for service providers and at-risk clients), we have also witnessed eminent researchers fundamentally challenge safer sex education strategies and the development of more restrictive criminal law policy adjustments. Risk reflexivity isn't always harmonious under conditions of uncertainty.

We have also seen the ways in which assumptions about how social actors may take risks opens up new lines of scientific inquiry that come to moralise (implicitly or explicitly) the behaviour of gay men. Here we can draw on cultural theory and Douglas' ideas. There are a vast number of ways in which gay male sexual behaviour has been moralised in relation to emerging risk research, including critiques that they will use biomedical technologies to justify further sexual risk-taking (i.e. biomedical optimism). Whether or not this is actually the case remains vague (and I will dispel this belief more adequately once I get to the interview data in chapter seven). It does, however, remain a pervasive belief in the field. Another key way in which gay men have been responsibilized is through the dangers posed by serostatus uncertainty, an ontological condition that is further aggrandised by epidemiological research that marks serostatus uncertainty as a pervasive state. From this perspective, at-risk men are the ones we can blame for fuelling the epidemic. Again, discussing the risks posed by those at-risk is not necessarily a new dynamic in the HIV prevention field (Flowers, 2001). However, the increasing epidemiological data, modelling studies and education programs working to problematize this condition and complicate it with further nuances on viral load, is a key feature of the HIV prevention field in its third decade. More data means more tools to pinpoint responsibility and blame.

Following more Foucauldian traditions on health and illness, we can see how gay men being turned into at-risk subjects becomes a way to foster self-regulation or, in the language of governmentality studies, to influence the conduct of conduct. Gay men are expected to manage their serostatus uncertainty through testing and a diligent take up of prevention practices. Though what prevention practices are considered to be incredibly effective remains open to debate, thus making serostatus uncertainty a constant state to be managed among the sexually active. Biopolitically, an at-risk status serves as the grounds to make citizenship claims, whether this means advocating for additional funding for HIV prevention education or garnering access for PrEP. From a more disquieting direction, this has also meant that emerging biomedical research has been used to regulate and control the actions of HIV-positive persons more tightly through criminal law. And while I only brief touched upon the issues of emotions in this chapter, I have started to demonstrate that part of how gay men are regulated as at-risk subjects is through emotion management strategies. All of the numbers and research findings presented above do not just have the capacity to alter how we cognitively approach HIV risk management, but also how we are affected by HIV risk. In chapters four and six, I will return to this issue of emotion management more closely, namely investigating how anxiety is utilised to govern at-risk men.

In summary, things are unquestionably uncertain. The HIV prevention field has continued to produce and cultivate uncertainties in its third decade in ways that have made evaluating the effectiveness of risk management strategies and avoiding serostatus uncertainty incredibly difficult, if not impossible, for most gay men. The ruling forms of knowledge I have investigated in this chapter continually foster and mobilise epistemic uncertainties associated with biomedical and public health research to affect governing practices and to turn gay men into at-risk subjects. However, the portrait of the HIV prevention field provided in this chapter is still incomplete. There is still one more branch of research to explore that will add significantly to our understanding of gay men as at-risk subjects. Indeed, in this chapter I have only just begun to touch upon the social and political uncertainties that have been generated by contemporary HIV prevention governing practices.

Thus in the next chapter I shall examine another branch of research, which I classify as critical social science and humanities perspectives on HIV prevention. In my reading of this work I will regularly connect this research back to the risk surveillance, risk assessment and risk factor findings that I examined in this chapter, as well as including activist perspectives on key risk management issues. This will allow me to address some of the latter critical questions guiding this literature review more comprehensively, namely how uncertainty is being used at different social sites to moralise and politicise the behaviour of gay men. From here I will move on to generate an original empirical project to better understand how HIV-negative men are affected by serostatus uncertainty during the transition to the biomedical era of HIV prevention.

Everything in the world is about sex except sex. Sex is about power.

-Oscar Wilde

Chapter Four

Uncertainty and Sexual Practice

Critical Social Science and Humanities Perspectives on Gay Men and HIV Risk Management

Following the uncertainty triad developed in chapter one, my review of the scientific literature and community documents on gay men and HIV prevention so far has been guided by several critical questions. What types of knowledge are being produced about HIV risk management? How is epistemic uncertainty associated with this knowledge being addressed? What governing practices are being implemented to respond to HIV risk and to emerging information about prevention? How are the social and political uncertainties associated with these governing practices being handled? And how are institutions moralising and politicising shifting sexual practices? My work in this chapter will continue to respond to these inquires, albeit from a different scholarly perspective.

In the previous chapter, I used these questions to understand ruling forms of knowledge in HIV prevention science or mainstream biomedical and public health research on gay men. I demonstrated how the HIV prevention field often produces and cultivates uncertainty and how it transfers this uncertainty directly onto our understandings of gay male sexual relations, such as through the treatment optimism hypothesis. However, in order for us to build a more multifaceted understanding of how gay male sexual behaviour is moralised and politicised at different social sites, it is necessary for us to look to another branch of research—critical social science and humanities perspectives on HIV prevention.

An examination of critical social science and humanities perspectives on HIV prevention and gay men is necessary for two main reasons. First, I primarily position this dissertation as a critical social science project on HIV. My analysis in the proceeding chapters is thus directly inspired by and extends upon the work of the scholars discussed in this chapter. In the last section of this chapter I will outline the parameters of the original empirical research project that will make up the remainder of this dissertation. The research questions and methodological choices behind this empirical project have been developed, at least in part, by thinking about some of the strengths and limitations of existing critical social science and humanities literature on HIV and gay men.

And second, an examination of critical social science and humanities perspectives on HIV prevention and gay men is required here because, beyond an emphasis on individual behaviour, this work pays attention to the complexity of social, cultural and political forces acting on gay men as they aim to manage HIV risk. Most importantly, this scholarship closely examines the ways in which HIV prevention raises unique ethico-political dilemmas for at-risk social actors, principally through the adoption or rejection of barebacking or serosorting practices. For gay men, HIV prevention is not only about preventing illness and managing health. It is also about thinking about the moral implications of their sexual decision-making. This chapter focuses extensively on understanding the significance of these ethico-political complexities. As such, I will begin to examine the link between the social and political uncertainties generated by contemporary governing practices and the experiential uncertainties, or ethico-political dilemmas, of negotiating serostatus uncertainty in everyday life.

So far in this dissertation I have been demonstrating how the HIV prevention field has failed to achieve a stabilising point in its third decade. Experts have failed to reach a consensus on both long-standing and emerging prevention issues and knowledge production practices and governing practices continue to produce additional uncertainties. In the context of these great epistemic and social and political uncertainties, social actors must determine how to best manage serostatus uncertainty to suit their particular interests and be responsible biological citizens. Critical scholarship on HIV prevention is fundamentally concerned with describing this context in order to question the knowledge production and governing practices that aim to address the HIV prevention needs of gay men. In this chapter, I will explore this critical work thoroughly so that I can generate a more robust picture of the relationship between epistemic, social and political and experiential uncertainties during the transition to the biomedical era of HIV prevention. Understanding the broader social, political and cultural contexts where risk related decisions are made will set us up to investigate how risk is managed in everyday life with nuance and originality in the forthcoming chapters.

I will begin this chapter by first providing an overview of critical social science and humanities research, explaining how its epistemological and political interests offer us a point of view on HIV prevention that contrasts significantly with the mainstream biomedical and public health narratives on gay men that I explored in the last chapter. I will then closely examine the work of leading critical social scientists in the field who have investigated the changing nature of gay male sexual relations over the course of the epidemic. A defining characteristic of this work is that critical scholars focus on sexual practice (sexual behaviour *and* social context) over sexual behaviour (unprotected anal sex as an epidemiological sex act). This is a key difference to the ruling forms of research discussed in chapter three and an approach to HIV research that guides the data collection and analysis processes ahead.

This discussion on sexual practice will then lead us into an examination of more humanities-based scholarship that seeks to understand the complex roles of political resistance and affect that underlay queer sexual decision-making. Following this analysis, I will bring in community examples that address the ethico-political dimensions of serosorting and HIV status disclosure in order to highlight the complexities of risk management during the transition to the biomedical era of HIV prevention. Using key tenets from risk and uncertainties studies, I will then tie together some of the main ideas explored in this dissertation so far to construct an overview of the principal epistemological and political interests of the HIV prevention field during the transition to the biomedical era of HIV prevention. From here, I will chart out an empirical research project on HIV-negative gay men that will offer original contributions to critical social science on HIV prevention.

In sum, in the absence of a stabilising point the HIV prevention field has been plagued by epistemic and social and political uncertainties. In this chapter, I shall continue to explore these conditions of uncertainty even further, focusing critically on how contemporary knowledge production and governing practices affect gay male sexual practice. Understanding the broader social, political and cultural context by which sexual decisions are made is necessary to comprehend how experiential uncertainties are negotiated and how agency is implemented and well-being is secured in the face of the unknown.

Critical Social Science and Humanities Perspectives on Gay Men: Overview

With critical social science and humanities research we are examining work that is more removed from the evidence-based, biomedical and public health inquiry investigated in the last chapter. As discussed in the introduction to this dissertation, critical research on HIV prevention has four main characteristics. First, it incorporates critical social theory and methodological frameworks from the social sciences and humanities into its analysis. Second, it is a reflexive project that critically dissects how the HIV prevention field comes to support certain knowledge production practices over others. Third, it tends to directly critique the hegemony of biomedical and public health knowledge production practices, or ruling forms of knowledge, in the field such as the work examined in the last chapter. And fourth, it offers contrasting narratives to biomedical and public health research, or ruling forms of knowledge, by focusing on the nuances of sexual practice. Once again, as an analytical tool, sexual practice refers to an examination of how *specific* sexual behaviours or actions occur in *specific* contexts, at *specific* moments in time, by *specific* social actors (Kippax & Race, 2003; Kippax & Stephenson, 2005; Race, 2014). It is distinguishable from an epidemiological interest in behaviour (such as tracking frequencies of UAI), as it places strong emphasis on how meaning is generated and shared during particular sexual exchanges. As I shall demonstrate below, critical social science and humanities perspectives on gay men and HIV prevention are quite diverse. However, what unites this domain of scholarly work is its deep investment in understanding the complexity of sexual activity and sexual desire in everyday life.

Critical social science and humanities perspectives on HIV prevention may often ask very similar questions to risk factor research. Both research domains tend to be attentive to the underlying causes and justifications for sexual risk-taking. However, critical work is less interested in trying to modify the risk-related behaviour of social actors. Instead it focuses on how risk is experienced and politicised at various sites—at the intrapersonal, interpersonal, community and institutional levels. It aims to understand how social actors construct meaning and negotiate risk during sexual encounters. It critically examines how ideas about risk come to shape and be shaped by desire, intimacy, community politics and gay male subjectivity. And it critically examines how the HIV prevention field, through its knowledge production and governing practices, meets or fails to meet the needs of those most at-risk.

Critical research is developed across the non-biomedical and non-public health oriented social sciences and humanities—sociology, anthropology, history, political science, communication studies, cultural studies and literary theory. The raw data is predominantly, though not necessarily exclusively, qualitative in nature: in-depth interviews, participant observation, auto-ethnography, institutional ethnography, archival work, cultural commentary and media analysis. Due to its interest in the socio-political and cultural dimensions of sexuality, this research avidly draws and contributes to the interdisciplinary field of sexuality studies. While some branches of this critical work (like queer theory) may be far removed from evidence-based inquiry, many critical social scientists may be involved in and directly draw on data collected from the larger scale quantitative studies discussed in the previous chapter (Kippax & Kinder, 2002). Thus the interests, methods and objectives of risk factor research and critical research are not mutually exclusive, even though critical research often takes risk factor research and epidemiological science to task. This is indeed the case for many of the key critical social scientists whose work I shall now explore.

Sexual Practice, Risk-Taking and Prevention

Key examples of critical social science research examining the sexual practices of gay men can be found in the work of Kippax and Adam. Along with articulating the importance of sexual practice in social science research on HIV prevention (refer to the introduction of this dissertation), Kippax's leading contribution to the HIV prevention field—built in collaboration with a larger group of colleagues—has been the concept of negotiated safety, which she developed through research with gay men in Australia (Kippax, Connell, Dowsett, & Crawford, 1993; Kippax & Race, 2003). As first discussed in chapter two, negotiated safety refers to an arrangement made between regular, non-monogamous sexual and/or romantic partners. Within the context of this primary relationship, these partners may choose to engage in condomless anal sex with each other if they share the same serostatus (two HIV-negative men cannot transmit HIV to each other). However, outside of this primary relationship, these partners may employ heightened forms of risk reduction, like using condoms with casual partners. The specific arrangements are negotiated based on the needs of the partners in the primary relationship. Kippax stresses the complexity of these arrangements and how they might not always be effective at preventing HIV. For example, it is possible for one partner to contract HIV through oral sex with a casual partner and then transmit HIV to his primary partner through condomless anal sex. How much risk and uncertainty each partner is willing to accept in the relationship and through sexual exchanges outsides of the relationship is something that must be negotiated as each partner has an ethical obligation to maintain the health status of the other.

While negotiated safety may not be a foolproof prevention strategy, it is an early example of gay men taking available knowledge about HIV risk to create sexual practices more in line with their desires. In other words, it is an example of lay individuals creating their own risk management practices without the direct guidance of biomedical and public health authority. Negotiated safety, which is now more or less a fully recognised prevention concept in the HIV field in Australia and Canada (though still highly controversial in some places like the US), arguably fits in well within a more mainstream behavioural science model of risk. What makes it critical, however, is its contrast to earlier public health messaging—which, as we saw in the last chapter, actually still dominates today—that all anal sex between men must be considered risky sex and that condoms should be used at all times. Negotiated safety was one of the first examples of HIV researchers thinking about effective prevention practices without recourse to the "condoms all the time" mantra or encouraging partner minimisation. By listening closely to the narratives of those at-risk, social scientists were able to isolate risk management practices happening on the ground independently of biomedical and epidemiological expertise, label these "negotiated safety" and officially bring this new found understanding of sexual practice into the realm of HIV prevention science where it has continued to influence research and education (Dowsett, 2009).

Throughout her work Kippax makes it exceedingly clear that HIV prevention is not reducible to the use of condoms. When we operate from this reductive assumption, we ignore what people are actually doing and how complex some of their risk management strategies may be. The complexity of safer sex is a theme Kippax has picked up in multiple works. For example, Körner, Hendry and Kippax (2005) have investigated why gay men have sought out prescriptions for PEP (*post*-exposure prophylaxis) and what circumstances led social actors to act in manners that they knew to be unsafe. They discovered "that unsafe sex leading to PEP happened in spite of participants' knowledge about safe sex and in spite of their usual safe sex practices, or their intentions to practice safe sex. Participants requested PEP when one of the social aspects of a sexual encounter was in some way different from usual practices; when something was temporarily out of their control" (p.48). Put differently, uncertain social conditions increase the *perception* of risk. Körner, Hendry and Kippax found that circumstances that might make a social actor feel temporarily out of control include conflicts in a relationship, vulnerabilities due to break-ups, uncertainties associated with new relationships, changes in sexual positions (topping or bottoming), desires to turn a casual relationship into a long term relationship and love. This research is important because it demonstrates that despite the best efforts of risk surveillance and risk factor research, perhaps we cannot so easily point to particular social actors as those who are most likely to take a risk simply due to the social characteristics that we deem more likely to lead to sexual risk-taking. Even social actors with the best intentions and a history of practising prevention sometimes end up in situations that pose a risk to their health that they ultimately must manage.

Returning back to the risk theory introduced in chapter one, risk management includes both the assessment of risk (that is, a more logical interpretation of available knowledge) and the subjective component of risk (that is, determining the personal value of the benefits associated with a particular decision and the moral implications of the potential harms). In addition to the biomedical risk factors, the nuanced context of a sexual relationship—what benefit does it bring to a social actor in the current moment—plays a significant role in how social actors interpret and respond to potential risk situations. The more comfortable and in control an individual is within a given situation, the less at-risk he may feel. However, any dynamic in a sexual relationship that changes this sense of comfort and control can alter how a social actor interprets a situation so that it switches from one of certainty to one of risk. I will address this issue far more thoroughly when I analyse the interview data later on in this dissertation.

Finally, Körner, Hendry and Kippax remind us about the challenges that come when an individual has to confront themselves as being at-risk: "PEP for sexual exposure involves much more than unprotected sex and a four-week course of anti-retroviral drugs. It entails admitting mistakes, failure, bad luck, losing control, disappointment about letting one's standards drop, acting in spite of one's better knowledge and dealing with emotions" (p.58). These are challenges that social actors have to face that easily get lost in the risk factor research I explored in the previous chapter. To rectify this gap, I will pay very close to attention to how social actors "deal with their emotions" in the chapters ahead when I review the interview data.

In the Canadian context, Adam engages with the sexual risk-taking and prevention narratives of gay men to understand how social actors are making sense of prevention messaging on the ground. In phrasing that is quite similar to institutional ethnography, he provocatively avers that "prevention messages are discourses not only 'about' reality, but intended to shape reality. Listening to the ways in which these messages are received, processed, and applied in everyday lives, however, shows how messages can give warrant for actions that may heighten risk" (Adam, 2006, p.174). Prevention knowledge and HIV education campaigns operate as ruling relations, as governing practices that construct the social world and thus how gay men come to perceive and implement prevention practices. Consequently, they must also be held responsible for failing to reduce HIV incidence rates. Indeed, Adam tends to point the critical target at the HIV prevention field for failing to understand the nuances of gay male sexual practice. Similar to Kippax, Adam believes that the HIV prevention field tends to frame prevention through a logical model premised on the notion of self-interested decision-making, which can position those who are at-risk or who have been infected as irrational men who are unable to adequately calculate harms (Adam, 2005, 2006). From this point of view, gay men who are at-risk are individuals who do not care about their health and well-being. The more we frame HIV prevention as something that can be easily achieved, the more we (intentionally or not) frame people who are at-risk or infected as being either incompetent, reckless or both. Moreover, by thinking about gay men's health principally through the health belief model premised on individual decision-making, we flat out remove the social from our inquiry into risk management.

In my review of risk surveillance and assessment literature in the previous chapter I already examined some of Adam's poignant critiques of the treatment as prevention model, a biomedical prevention paradigm that pays limited attention to the actual complexities of socio-sexual life and that has not been able, as it righteously claims, to reduce infections among gay men (Adam, 2011). With his critiques, Adam goes even further to problematize some of the findings of risk factor research. While risk surveillance, assessment and risk factor research help us to make sense of the variance of risk among different groups of men and different sexual activities, how this knowledge might actually be applied by those at-risk within their everyday lives is somewhat ambiguous. For instance, according to risk factor research, racialized gay men, men who have receptive anal sex and younger men who have sex with older gay men are considered to be at higher risk. This leaves Adam to question: "So the average gay man is to select only young, white, HIV-negative partners who are exclusive tops and all will be well? This kind of reasoning remains resolutely asocial, ahistorical and out of tune with basic human psychology" (2011, p. 4).

I can expand on Adam's arguments here. According to some of the risk factor research I reviewed in chapter three, an HIV-negative gay men would do well to avoid sexual activity with men who use any drugs, face mental health issues of any kind, have ever had a suicidal thought, a stressful moment, body image issues, have watched bareback porn, are going through a break-up or a period of unemployment, have had multiple sexual partners, have used online sources and mobile apps to hookup, or have optimistic opinions about HIV treatments. Further, gay men should be cautious when having sex with HIV-positive men with detectable viral loads, HIV-positive men with undetectable viral loads and HIV-negative men experiencing serostatus uncertainty. Researchers have associated certain degrees of risk-taking and a higher probability of infection with nearly every social and cultural aspect of gay male subjectivity, constructing only the most privileged among us as the less risky vectors. To be sure, risk factor research does offer us some helpful insight. However, it is insight that, following Adam, often seems more useful to HIV researchers seeking out risk (and needing more scholarly publications and justifications for more research funding), than for those at-risk who are actually seeking pragmatic solutions within their romantic and sexual lives.

Throughout his work Adam consistently critiques dominant assumptions that circulate as unchallenged truths within the HIV prevention field. For example, an explanation for the rise in HIV incidence among gay men has been attributed to the increased popularity of barebacking (or having raw sex) and bug chasers, individuals who purposely seek out HIV infection (Adam, 2005). Many in the HIV prevention field and in the media argued that barebackers were irresponsible men doing damage to their communities (Dean, 2009; Girard, 2013). Critiques have been especially harsh against HIV-positive men who bareback and do not disclose their serostatuses first.

Micro-cultures of HIV-positive gay men who regularly engage in condomless anal sex do indeed exist. However, after closely analysing the narratives of gay men who frequently bareback, Adam notes that having raw sex is not necessarily about rebellion or recklessness and that most HIV-positive men actually consider the avoidance of HIV transmission to be a key priority. Indeed, the justifications provided by HIV-positive barebackers often have an ironic resonance with the risk management imperatives associated with neoliberal governmentality. HIV prevention education frequently encourages gay men to think of themselves as being at-risk and needing to calculate potential harms within each sexual context. Consequently:

> For the subset of men who have left safe sex behind, ‘‘raw’’ or bareback sex is justifiable through a rhetoric of individualism, personal responsibility, consenting adults, and contractual interaction. Used to being part of networks of men who are already HIV-positive, those who employ the language of barebacking typically presume that prospective partners will be ‘‘in the know’’, that is, they will be fully knowledgeable about HIV risk, they will be adult men capable of making informed choices and of consenting after having weighed all relevant risks, and often enough they will be HIV-positive themselves (Adam, 2005, p. 339).

Thus in certain hypersexual micro-cultures, such as bathhouses, the operating assumption is that most men who engage in condomless anal sex are either HIV-positive or are willing to take the chance of becoming infected. Thus each social actor is responsible for choosing the level of risk reduction he prefers while being cognisant of the fact that there is an extremely high probability that his sexual partners might be HIV-positive. In fact, the idea that one should treat every sexual partner as if they were HIV-positive is one of the earliest education messages circulated by the HIV prevention field (Adam, 2005; Adam, Husbands, Murray, & Maxwell, 2008). From here, Adam argues that barebackers and “high risk” men are not reckless or irresponsible. Many are highly informed and reflexive men who are internalizing and appropriating the neoliberal messaging being communicated to them by the HIV prevention field. Neoliberal governmentality encourages social actors to “conduct their conduct” as risk calculators, which is exactly what these men in bathhouses are doing, despite their activity contrasting to public health messaging to always use condoms.

Similar dynamics have been observed internationally. In France, Latapie (2012) has argued that young HIV-positive men in Paris have forged barebacking subcultures as a way to bond and support each other within a viciously serophobic society. As an HIV-negative man who was politically active in the first decades of the epidemic, Latapie admits to being highly sceptical and critical of this practice initially. However, after interviewing young HIV-positive men he learned more about the nuances of their prevention tactics. Similarly to Adam, Latapie argues that these young HIV-positive men are not recklessly abandoning condoms or displaying severe apathy over HIV transmission. Rather, their sexual networks display a heightened understanding of risk reduction methods including serosorting practices, incorporating information on viral load and the development of supportive social bonds within an oppressive society. We can only learn about these sexual practices with nuance if we actively engage with these young HIV-positive men's stories, instead of judging them for being reckless.

Analogously, Race (2003) has argued that the introduction of ART has also played a role in the re-evaluation of risk among HIV-positive gay men in highly sexually active milieus. These men have used new biomedical knowledge to shift prevention ethics from a "condoms all the time" approach to a more negotiated use of condoms in context. Race classifies these men as *scientifically active*, referring to their reflexive engagement with emerging scientific knowledge. The key argument from Adam, Latapie and Race is that these "high risk" men are neither complacent, optimistic or reckless. Rather, they are reflexive neoliberal sexual actors putting new scientific knowledge to practical use.

Nonetheless, Adam reminds us that people do not just make sexual decisions based solely on health risk calculations. Social actors may have clashing expectations on disclosure, consent and different knowledge about HIV transmission that may lead to moments of risk:

> The neoliberal view constructs human actors as rational, adult, contract-making individuals in a free market of options. It does not account for the much more complex motivators and vulnerabilities that characterize real human interaction and it denies the vulnerabilities, emotions, and tough dilemmas faced by people in their everyday lives. In terms of this study, the rationale advanced for unprotected sex by barebackers denies such circumstances and dilemmas that go into unprotected sex as a partner's erectile difficulties, momentary lapses and trade offs, personal turmoil and depression, disclosure and intuiting safety, and indeed love (Adam, 2005, p.344).

In other words, though gay men, both HIV-negative and HIV-positive, may be operating under the assumption that their partners are managing risk in a logical manner, expectations on risk and safety may differ from social actor to social actor, from context to context. Some may expect HIV status disclosure regardless of social setting or context, while others may assume that the social setting and context serve as a form of disclosure in and of themselves. Importantly, Adam reminds us that sex is not just a contractual exchange as envisioned by a neoliberal market based model of human interaction, but it is fundamentally a search for human connection, however fleeting (Adam, 2006). Once again, we see here another reference to emotions, though there is little elaboration on how emotions directly affect the assessment of risk. This is a gap in the social science literature that I will soon address in chapter six.

There are, however, some notable exceptions in the critical social science literature. For example, in trying to understand the role of love in serovariant sexual relations, Davis and Flowers (2011) argue that "there is evidence of the hybridisation of biomedical knowledge with love and, relatedly, the melding of affect and rationality" (2011, p.745). They go on further to argue that love and "HIV-prevention rationality" are interdetermining and dependent. In other words, risk assessment (the logical processing of harms) is always intertwined with risk perception (the value judgments and affective experiences associated with recognising and managing harm). While the language offered by Davis and Flowers here is somewhat different from in/capacity theory, they offer a similar critique about our understanding of emotions and agency and the fallacy of the reason/emotion divide. Rationality is not just about the logical processing of knowledge, but it is fundamentally an emotional experience. In the management of HIV prevention there is no context whereby social actors use purely cognitive processes to evaluate potential harms. Social actors are always being guided by their felt embodied perceptions when processing such information, such as feelings of love. Following de Courville Nicol, emotions are the felt forms of problems. If a social actor *feels* love during a situation that *logically* poses a higher degree of biomedical risk, the "problems" produced by said biomedical risk will be shaped by feelings of love such that he may not *feel* that his choices pose a problem in the first place. He is not absolutely dismissing logic. However, the severity of the problem is not just something that is cognitively or objectively understood, but is something that is emotionally and subjectively experienced. Thus any project that aims to be mindful of how social actors manage HIV risk, must be mindful of the affective dimensions that guide risk management decision-making. In Davis' and Flowers' work, we can look to the role of love in directly shaping decisions to have unprotected sex in the context of serovariant relations and in the proceeding chapters I shall investigate the role of anxiety in determining how social actors respond to moments of serostatus uncertainty.

Nonetheless, while Adam doesn't elaborate much on emotions in his work, he does argue that safer sex practices cannot be reduced simply to the reduction of health risk. Beyond risk management, prevention in everyday life will be guided by the intimacy needs of social actors—a search for love, affection, lust, attachment, etc.—which are complex psychosocial and emotional needs that can circumvent standard forms of risk management like condom use. The argument here is parallel to those made by Kippax and her colleagues above—the specific socio-sexual relationship that may present a risk determines how risk is interpreted and what risk management practices may be enacted. What Adam is highlighting, however, is how different social actors may have different understandings of what the socio-sexual relationship is and thus what the risk management obligations are to the other. This can lead to misunderstandings and heightened risk.

In his critical reflections on barebacking, Adam draws directly on some of the key ideas from Beck, Giddens and Lupton that I earlier explored in chapter one, in order to discuss the central role of risk reflexivity within processes of individualization and the development of (gay) masculinity within the context of the risk society. The social expectation is that gay men will take available expert knowledge—following Race, that they will be scientifically active—and will take risks as part of establishing their self-identity. For gay men in particular who, following Giddens (1992), have a plastic sexuality—that is, who are social actors moulding their sexual and intimate relations within less rigid social institutions and social expectations (like raising a family)— sexual risk-taking is central to the project of sexual expression and establishing self-identity. Moreover, following Lupton, risk-taking remains central to establishing masculinity. However, this raises continued uncertainty since it is never clear how scientific knowledge on HIV prevention will change, how social expectations on sexuality might shift, how severe the consequences of certain risks will be and what risks might develop in the future. In a risk society, uncertainty is always present. For gay men, uncertainties about HIV prevention methods, the benefits of ART and the trajectory of the epidemic (e.g. a future cure), play a fundamental role in the establishment of self-identity, especially through the adoption and rejection of sexual risk-taking.

This contextualisation of barebacking practices (and perhaps gay male sexuality more generally) within a risk society framework allows us to consider sexual risk-taking beyond just a health issue, to notice how being at-risk has played a central role in the production of gay male subjectivity in modern Western society. On the one hand, from a biomedical and public health perspective, HIV risk has often problematized gay male sexuality as a form of deviance ushering in unnecessary uncertainty and a burden on health care systems. However, on the other hand, risk reflexivity has been an integral part of the individualization narratives of gay men who take a risk by coming out and living openly as gay men within a historically homophobic society. Following risk society theorists, risk is how social actors implement self-identity, which has certainly been the case for gay men (Giddens, 1992). Thus Adam's contention is that there is always going to be something ironic about moralising the sexual risk-taking behaviour of gay men as inevitably bad, when, following critical risk theorists, risk remains central to how subjectivity is formed in modern, Western society—especially for gay men.

Another idea circulating in the HIV prevention field that Adam challenges is the AIDS optimism hypothesis, which I reviewed in the last chapter. Once again, AIDS optimism is the notion that due to the effectiveness of ART and HIV becoming a chronic manageable condition, gay men have become more complacent when it comes to safer sex. In other words, the availability of HIV treatment leads to sexual risk-taking. A parallel explanation for the rise in HIV incidence is the notion of condom or safer sex fatigue hypothesis, the idea that gay men have become tired with having to continuously practise safer sex (Adam, Husbands, Murray, & Maxwell, 2005). Both AIDS optimism and the safer sex fatigue position gay men as either apathetic or ambivalent to the prospect of living with HIV, which is an opinion that can be pointedly targeted toward younger gay men who are ostensibly unable to register the severity of the epidemic. I can provide a more recent example of this type of stereotyping to illustrate. The popular gay blog *Queerty*, when reporting on research from the Centers for Disease Control and Prevention in the US that claimed that the number of gay men reporting unprotected anal sex rose 20% from 2005 to 2011, began with the headline "With HIV/AIDS Infection On The Rise, Young Gay Men Remain Ambivalent" (Smith, 2013). The article was also filed under the category "Lost Generation" to make it resoundingly clear what the author thinks about younger generations of gay men. Once again, epidemiological figures are being used to moralise the behaviour of all gay men, "beating up" the epidemic by making risk-taking appear rampant, while offering minimal reflection on social context. In this view, young gay men are responsible for fuelling the epidemic. This is an argument that we also encountered in the last chapter when I reviewed the "It's Never Just HIV' campaign, which was also targeting young, "ambivalent" gay men.

However, by studying the narratives of high-risk men (specifically defined as men who practice condomless anal sex with casual partners), Adam has discovered a litany of reasons why men may practise unsafe sex that are not a result of AIDS optimism or condom fatigue (Adam, Husbands, Murray, & Maxwell, 2005, 2008). Some reasons include: finding it hard to maintain an erection with condoms (which can be exacerbated by HIV medications and recreational drug use); personal turmoil and depression (especially for men who have lost friends or lovers to the epidemic, or may be dealing with the stigma of an HIV-positive diagnosis); low self-esteem related to age, body type, race and social status; anticipating a more serious relationship with a partner; and monogamy.

According to Adam (2006), gay men frequently cite monogamy and romance as some of the main reasons for why they abandon the use of condoms. Yet, this prevention strategy can only be effective if the two partners can both unequivocally confirm their HIV-negative statuses and if they remain faithful to their sexual arrangement. Since it may be difficult to confirm one's HIV status (refer to chapter two for review) and because monogamy has not historically been the social norm in gay male relationships, monogamous relationships routinely come up as the site for seroconversion (Adam, 2006). Nonetheless, within the mainstream HIV prevention field, having multiple sexual partners (that is, promiscuity) has been associated—or, at least, epidemiologists have attempted to forge the association—with heightened levels of risk and seroconversion (Lambert et al., 2009; Public Health Agency of Canada, 2011; Remis et al., 2014). Yet Adam warns us that this focus on promiscuity as a site of risk can serve as a semiotic snare, "a message where a well-understood but unspoken subtext undermines the overt thrust of the message" that can actually lead to heightened risk (Adam, 2006, p. 173). A man can have sex with hundreds of men and not contract HIV. A man can have sex with just one man, even in the context of a monogamous relationship and seroconvert. Prevention messaging may encourage men, usually implicitly, to have fewer partners as a form of risk reduction. However, this can create opportune moments for transmission when people equate monogamy with safety.

What is interesting about this argument is that we have now seen social science research equating both promiscuity and monogamy—polar opposite forms of sexual and/or romantic expression—associated with heightened risk for HIV. Promiscuity ostensibly increases risk because risk accumulates per sex act. Monogamy ostensibly increases risk because it increases the likelihood of unprotected sex between partners with mixed serostatuses. However, technically it is not monogamy that increases risk, but a failure to sustain a monogamous relationship and/or an engagement in unprotected sex before confirmation of negative serostatuses. While Adam is correct that failed monogamy can lead to HIV transmission, we should be cautious with how we present this argument. First, arguing that monogamy and romantic love routinely show up as a site of seroconversion unintentionally positions gay men as incapable of remaining faithful to their partnership agreements—even in monogamous relationships we caution men to not be trusting of their partners and to be wary of potential risk. Second, it remains somewhat of a contradiction that Adam routinely frames gay men as highly reflexive social actors when engaging in higher risk sexual practices like barebacking in bathhouses, but somehow as victims of semiotic snares when they fall in love.

And third, Adam's arguments are based on the belief that monogamy is not a norm within gay male cultures, which is an idea that needs to be questioned. Indeed, in his seminal essay, "How to Have Promiscuity in an Epidemic," Crimp (2002) describes how foundational promiscuity is to gay male culture and the important role it has played in the development of safer sex practices. While promiscuity is no doubt an aspect of gay male culture (both historically and contemporarily) and while the types of sexual-romantic relationships many gay men (and heterosexuals too) are forming today certainly resist tightly defined conceptions of monogamy, entering into research about gay men assuming that *all* gay men are, by their nature, promiscuous (or at a minimum, not inclined to monogamy) seems reductive. Indeed, as I observed in the last chapter in the examination of epidemiological literature such as the M-Track report, there is a tendency for scientists to focus on the most promiscuous and high risk cohorts of gay men and to create generalised narratives about all "MSM" based on data collected from hyper-sexualised milieus. This data is not necessarily incorrect or unconstructive, but it certainly paints a particular picture of sexual risk-taking that may not match the realities of all at-risk social actors. If part of the argument being developed by critical scholars is that we must understand the changing social context that shapes how gay men meet and negotiate risk, we must be wary of applying potentially outmoded cultural motifs on gay male sexuality such as those written by Crimp on promiscuity, to younger generations of gay men.

For instance, risk factor research investigating the role of romance ideation on sexual risk-taking reports that 80% of the 431 young gay men surveyed consider monogamy to be an important part of their ideal relationship and 75% considered sexual exclusivity essential (Bauermeister, 2012). Importantly, these men were recruited because they were using online sources to meet other men for sex and thus they were not (at least not yet) monogamous. However, the study argues that, at least for some young gay men, the idea of monogamy or sexually exclusive romantic relations is becoming more common as an ideal, even if how it manifests in reality is somewhat more complex. To be sure, I do not deny that gay men continue to have an interest in having lots of sex with lots of partners (nor would I deny this for heterosexuals either). However, I believe that we should be cautious about starting research with the assumption that all gay men are actively promiscuous and uninterested in monogamy. Similarly, I believe we should be careful of the implications of consistently associating risk with monogamous partnerships and love when gay men may seek these relationships for reasons other than health maintenance (see too, Davis & Flowers, 2011).

A final example of critical social scientific work on gay male sexual practice comes from the field of health psychology. In his perspicacious essay on gay men and risk management, Flowers (2001) examines how changes in biomedical technologies have altered safer sex strategies and how these alterations have played a role in hierarchizing social actors in gay male communities. He argues that HIV risk is not a constant entity; it is fluid and diversifies with the development of biomedical technologies, consistently raising new moral parameters, altering social perceptions of who is the most culpable for spreading risk. To develop this argument, Flowers breaks down the emergence of HIV biomedical technologies and their effects on risk management practices into three historical phases.

First there is the confused stage (1981-1986). Prior to the discovery of HIV as the cause of AIDS and then the introduction of the HIV antibody test, there was no way of knowing exactly why people were becoming sick and dying in the gay community (and among other minority groups). At this time the only risk technologies available were epidemiological and consequently AIDS became almost fully understood through group membership. Being a gay man meant being at-risk and posing a risk to the general population: “Culpability quickly shifted to the stigmatized minorities who were initially affected. The burden of such blame, together with anxiety, illness, grief and, perhaps most importantly, uncertainty, were all to be carried by gay men” (p. 55). Nonetheless, this uncertainty invoked a broad community response since all gay men were collectively othered, considered to be equally at-risk and all deemed to be possible carriers of a potential virus. In the confused phase, epistemic uncertainty (an absolute absence of information on the cause of the illness) made every gay man proportionately responsible for managing risk. Under such uncertain conditions it was necessary for all gay men to adopt safer sex practices (abstaining, partner reduction and condom use) and politically mobilise for access to services for those falling ill and dying.

The next stage Flowers refers to is the somatic phase (1986-1996). After the discovery of HIV as the cause of AIDS and introduction of the antibody test, gay men could find out their

HIV statuses. “Quite suddenly, the virus quite literally became embodied. The apparent homogeneity of gay men as a singular high-risk group was broken, as gay men could be distinguished via the HIV antibody test as HIV antibody positive or HIV antibody negative. The boundaries of risk were reiterated as now specific kinds of gay men (antibody positive and antibody negative) could be seen as distinctly ‘posing a risk’ and ‘being at risk’ respectively” (p.56). Thus the HIV response shifted from a collective community focus on prevention to an individualized focus on testing, HIV status disclosure and, for many, serosorting out those with dissimilar HIV statuses. Discourses of responsibility and blame around HIV began to shift as it became a moral imperative for gay men to know their HIV statuses. Over time, knowing one’s HIV status and an increase of information on how HIV is transmitted also opened up new risk reduction strategies such as negotiated safety and a focus on negligible or lower risk sexual practices (e.g. oral sex). The biomedical creation of untested, HIV-positive and the HIV-negative identities altered how risk was understood, shared and negotiated, namely with the burden of responsibility and blame falling on the shoulders of HIV-positive men. Additionally, there was a shift in focus from gay men in general as a risky group to particular types of gay men who engage in risky practices (e.g. barebackers).

The final risk management stage Flowers refers to is the technological phase (1996-1999). This phase is characterised, most significantly, by the introduction of new biomedical methods for managing HIV risk and AIDS. Here the advent of ART just began to alter our understandings of transmission and the impact of viral load (more at a theoretical level than from the existence of valid empirical evidence, as noted in the discussion of treatment optimism in the last chapter). And most significantly, ART’s rollout began to shift, at a pretty rapid pace, the discursive framing of HIV as a fatal illness to a more chronic manageable condition. PEP was also being implemented to control seroconversion rates after high risk exposures. The development of sensitive viral load tests allowed HIV-positive men to more acutely monitor their health and raised additional questions about the decline in infectivity associated with low or undetectable viral loads. This began to raise concerns over the increased risks associated with optimistic beliefs in undetectability (i.e. treatment optimism, see last chapter for review). And finally, the issue of poor adherence and compliance to HIV medication schedules among HIV-positive gay men introduced additional risks due to the possibility of an increased spread of drug resistant strains of the virus.

Thus while the development of more advanced biomedical technologies to address HIV risk were undoubtedly beneficial to gay men, Flowers argues that they also amplified questions about risk. “What appears to be happening is that with the advent of each new technological ‘advance’, the locations of ‘risk’ multiply, and perhaps most importantly, the location of the ‘greatest risk’ significantly shifts to smaller and smaller numbers of people” (p.68). New biomedical technologies lead to new HIV risk subjects—HIV-positive men with undetectable viral loads, HIV-positive men with detectable viral loads, treatment adherent gay men, untested men, etc.—who can be responsibilized for posing the most risk to others. And while the benefits associated with biomedical technologies are undoubtedly encouraging, as noted in the last chapter, there has been a significant degree of uncertainty generated over the risk reduction potential associated with HIV medications, their long-term side-effects, the development of drug resistant strains of the virus and ART’s potential role in fostering sexual risk-taking through HIV optimism. Indeed, sometimes more knowledge produces more uncertainty.

There are three main takeaways from Flowers’ essay that are useful to the current investigation. First, HIV risk is not a static entity but shifts as available biomedical technologies and scientific evidence shifts. Second, emerging technologies and information about risk allow for the development of newer risk management strategies. Yet the effectiveness of these strategies remains uncertain, as does their ability to introduce new risks to the population (such as through drug resistant strains of the virus). What constitutes safer sex shifts as our knowledge about HIV shifts. Yet, as argued in chapter three, given the significant ambiguity and epistemic uncertainty associated with emerging biomedical knowledge on HIV risk, social actors are left having to determine what qualifies as risky or safe behaviour. And third, new biomedical technologies and risk management strategies create new risk subjectivities that divide up members of the gay community so that risk it is no longer equally shared as a collective and certain social actors are held more accountable for posing a risk. The more we know about how HIV operates in the body, the more we are able to pinpoint who poses the most risk and who is the most at-risk.

We can extend Flowers’ technological phase to include the transition to the biomedical era of HIV prevention. In this transition, information on viral load and HIV treatment plays an even more prominent role in how we discuss prevention, how we frame HIV-negative gay men as simultaneously being at-risk *and* posing the highest risk to others (due to the potential for acute infection), how we make sense of the risks HIV-positive gay men pose to negative men, and how we politicise the sexual interactions between HIV-negative gay men and positive men. In addition to viral load and PEP, ART's role as PrEP has also introduced a new way to manage HIV risk. However, as I discussed in the last chapter, PrEP also increases potential risks to the population due to poor adherence and the increased spread of STIs when condoms are not used in casual sexual relations (Kojima, Davey, & Klausner, 2016). Thus as a risk management strategy, PrEP has also opened up new moral dimensions and subjectivities. Those on PrEP may be envisioned as responsible biological citizens advocating for drug access on behalf of queer communities. Or, those on PrEP may be envisioned as "Truvada Whores" whose sexual appetites are generating the additional risks of drug resistant strains of HIV and STIs. Following Flowers, new knowledge and technologies allow us to pinpoint the sources of risk more acutely—which, according to Douglas, is just a mechanism for placing blame. Different social actors will interpret, and thus politicise, these risks and the benefits of available prevention technologies extremely differently.

In short, the transition to the biomedical era of HIV prevention may be considered to be a continuation of the technological phase. It differs slightly as a period due to the vast amounts of additional research and policy shifts on many of the risk management issues Flowers first presented. In other words, throughout the 2000s experts accumulated enough evidence to begin to answer some of the concerns first posed during the technological phase. However, not enough to have achieved a stabilising point. We still face extreme conditions of uncertainty. Indeed, many of the uncertainties that Flowers mentions as being characteristic of the late 90s were not resolved throughout the early 2000s—risk and uncertainty have only diversified and proliferated. Below I will examine some community examples to show how this diversification of uncertainty has often led to complex ethico-political dilemmas among gay men during the transition to the biomedical era of HIV prevention.

To summarise, the critical social science scholarship of Kippax, Adam and Flowers examines the ways in which HIV prevention raises unique ethico-political dilemmas for social actors in the context of great and shifting uncertainty. Both Kippax and Adam have drawn on the narratives of everyday social actors managing HIV risk, causing us to reconsider what constitutes "high-risk" behaviour. From a biomedical and public health perspective, all forms of unprotected anal intercourse may be considered to be "high risk." However, by examining how sexual partners negotiate safety and how sexual environments "communicate" serostatus on behalf of social actors, Kippax and Adam show us the nuanced social dimensions of risk management on the ground.

Kippax has investigated the sheer complexity of safer sex strategies and how assessing oneself as being at-risk is often rooted in a perception of being out of control. Adam has critiqued the mainstream HIV prevention field and risk factor research, such as AIDS optimism research, for undermining the risk reflexivity of gay men and implicitly characterising them as reckless. He has also avidly critiqued prevention education that is based principally on a neoliberal health risk model for its tendency to flatten out the nuances of gay male sexual interaction—to eradicate the social from social science. Both scholars are able to offer us this important insight by moving beyond epidemiological behaviour and focusing instead on sexual practice, by examining sexual behaviour in particular social and historical contexts.

Meanwhile, Flowers' theoretical work has demonstrated how notions of being at-risk and what constitutes effective risk management shift, and sometimes drastically, with the emergence of new technologies. Moreover, Flowers demonstrates how these issues impact and transform sexual practice among gay men. Our understandings of HIV risk and risk related subjectivities are not static. Gay men must continually address their risk potential within this rapidly shifting context. Emerging biomedical technologies offer incredible opportunities to improve risk management strategies, but they are marred by uncertainty and their potential for introducing new risks to gay men. As such, these tools also raise new ethico-political dilemmas (i.e. social and political uncertainties) as gay men must determine how to modify their sexual practices given the additional risks these prevention technologies may pose. As our knowledge on HIV risk shifts rapidly, so too do the moral dimensions of risk management and thus our beliefs on who we consider to be the most culpable for continued HIV incidence in our communities (i.e. at-risk men, HIV-positive men with detectable viral loads, men taking or not taking PrEP, etc.).

As works of critical social science, Kippax, Adam and Flowers go beyond investigating risk-taking behaviours, in order to understand the broader social and political contexts that shape sexual decision-making. From this place of nuanced insight they are able to offer critiques of ruling forms of knowledge and associated governing practices in the HIV prevention field. Kippax and Adam in particular have rigorously questioned mainstream public health approaches to research and education. By challenging epidemiological conceptualisations of risk acts and demonstrating how unprotected anal sex can be a part of safer sex practice, they have exposed the limited generalizability of epidemiological science. By questioning the merit of epidemiological hypotheses like AIDS optimism and condom fatigue, they have also critiqued the validity of epidemiological science claims and the limited applicability of risk factor research in everyday life. By questioning the implications of prevalent education programs and arguing that they can actually facilitate rather than discourage additional risk-taking, they have called into question existing governing practices. They have demonstrated how existing education can produce more social and political uncertainties by amplifying risk, stigmatising HIV-positive and at-risk men, while flat out ignoring their needs and experiences. Thus as works of critical social science these researchers go beyond just telling us about gay men, HIV and sex. They tell us about how our response to the HIV epidemic affects gay men in complex and difficult ways.

Indeed, this is what Flowers has most in common with Kippax and Adam. Though less directly critical of public health approaches to HIV research and education, in the essay I just explored Flowers makes it very clear that the epistemic uncertainties and social and political uncertainties that arise as a result of emerging prevention knowledge affect gay men greatly, creating social tensions and political divides. The technologies that have emerged during the transition to the biomedical era of HIV prevention have come equipped with great epistemic uncertainty (see chapter three for review). Such epistemic uncertainties have posed social and political uncertainties, as we have to come to determine how to integrate these technologies into our governing practices without replicating HIV stigma or fostering the potential for additional biomedical risks and HIV incidence. Such social and political complexity poses challenges for the at-risk social actor who must manage risk in his everyday life.

Thus while all three critical scholars explored in this chapter so far focus on different prevention issues and operationalize different critical vocabulary, arguably each is mindful of the connection between knowledge production, governing practices and everyday experiences. Each is firmly aware that the limitations of our research (epistemic uncertainties) directly relates to limitations in our services and education, which can then foster additional risk-taking, increase HIV incidence and produce HIV stigma (social and political uncertainties). Each of these critical scholars is firmly aware that these conditions of uncertainty make it very challenging for gay men to negotiate risk in their everyday lives, but that gay men continue to do so despite consistently being positioned as apathetic or as reckless risk takers. Each of these critical scholars is aware that you have to listen closely to the specifics of everyday experiences and the negotiation of experiential uncertainties on the ground, to truly understand how this epidemic is unfolding.

In sum, as works of critical social science, Kippax, Adam and Flowers all demonstrate just how complex HIV prevention can be given shifting social and biomedical contexts which alter the ethical dimensions of sexual risk-taking. It is challenging for social actors to make risk management decisions in uncertain conditions, with uncertain knowledge. In all of their works we see that HIV prevention is not only about preventing illness. Rather it is ultimately about thinking about the moral implications of their sexual decision-making. These ethico-political dynamics add an additional challenging layer of complexity and uncertainty to HIV prevention practice. Humanities scholars and queer theorist have also closely explored the ethico-political complexities of gay male sexual desire in the context of the HIV epidemic. This is another branch of critical work that I shall now investigate.

Politics and Affect: Queer Perspectives on Sexual Risk-Taking

Within the critical canon not all explanations for sexual risk-taking among gay men are firmly rooted in risk reduction logic. The most obvious explanation, of course, is that sex can feel more pleasurable without a condom. However, beyond physical sensation, various scholars have pointed to the ways in which HIV risk may add an additional layer of meaning to sexual experience that can facilitate pleasure and operate to implement self-identity. Indeed, in queer studies, investigations into the meanings associated with risky sex and the complex nature of desire, pleasure and fantasy, are plenty. For example, drawing on psychoanalysis, Bersani (1987) has described the risk associated with anal sex through the principle of the death drive, which he argues is a product of homosexual men's incomplete achievement of hegemonic masculinity: "But if the rectum is the grave in which the masculine ideal (an ideal shared—differently—by men and women) of proud subjectivity is buried, then it should be celebrated for its very potential for death…. Male homosexuality advertises the risk of the sexual itself as the risk of self-dismissal, of losing sight of the self, and in so doing it proposes and dangerously represents *jouissance* as a mode of ascesis" (Bersani, 1987, p.222, emphasis in original).

Also drawing on psychoanalysis, Crimp (2002) has explained sexual risk-taking through the psychoanalytic concept of melancholia, in the incompletely mourned loss of generations of gay men to AIDS. Crimp argues that, for some gay men, unsafe sexual practice may be a result of the consistent denial of gay male suffering in the context of the epidemic. The AIDS movement had called on gay men to consistently adopt safer sex enthusiastically and to actively deny anxiety, shame and terror in the service of activist militancy and queer pride. Gould (2009) explains this through the concept of emotional habitus, the process of learning that makes certain emotional states—in this case, anxiety, shame and grief—seem less acceptable than the pride, anger and self-resiliency deemed necessary to fight the epidemic and systematic homophobia. Nonetheless, according to Crimp, these displaced fears and unmourned loses do not just disappear. Left unresolved they can manifest into ambivalence or numbness, possibly leading to sexual risk-taking and seroconversion.

The denial of emotional suffering among HIV-negative men is a theme explored critically by psychologist Odets (1995). Looking specifically at HIV-negative gay men in the early 1990s (before the transition to the biomedical era of HIV prevention), Odets argues that many of these men, often pejoratively considered to be the "worried well," felt that their deeply held fears over seroconversion were unjustified in the face of HIV prevention messaging which presented the management of risk as seemingly straightforward. Odets argues, however, that if prevention were so straightforward people would not be getting infected in such high numbers. HIV-negative men's fears over seroconversion were also routinely trivialized when compared to those who were dealing with their HIV diagnoses, as if the men who had effectively avoided infection (until this point, at least) should be grateful. Yet, Odets pointedly argues that:

> All gay men live with HIV and AIDS, whether the virus now exists in their own bodies or in the bodies of those they love, live and work with, identify with, and sometimes fear. Being gay means being profoundly affected by the epidemic, and for those who feel they are not, I can only again mention denial. Denial not only exists within the individual, but within society at large. Broad social denial colludes powerfully with the denial of those who live in the middle of the epidemic and who must protect themselves from seemingly unbearable psychic pain. Denied or not, being gay and being uninfected is now a *condition*, not the absence of one (p.14-15, emphasis in original).

Thus the at-risk subject, the gay man who is expected to self-regulate in relation to HIV risk, does so in a broader cultural context where the HIV/AIDS epidemic is often erased from view and where his suffering may be minimised, ridiculed or denied. Moreover, during the transition to the biomedical era of HIV prevention, as HIV/AIDS no longer remains as culturally significant or newsworthy in Canada as it once did in the 80s and 90s, its emotional toll on at-risk groups also fades from public discourse. The fear of HIV has become a closeted issue. Further, in the absence of a stabilising point, HIV-negative gay men must also manage their serostatus uncertainty given ambiguous prevention knowledge and conflicting education and health policies. Under these conditions of uncertainty, these social actors must negotiate risk in an epidemiological context that nearly constantly amplifies the prevalence and threat of serostatus uncertainty, so that regardless of an HIV-negative gay man's sexual history, he is aware that HIV infection is always a very real possibility—maybe just one hookup away. Thus while HIV fades slowly from public view in Canada, the experience of serostatus uncertainty and the challenges of practising HIV prevention effectively may actually magnify among members of higher risk groups, creating a context for extreme, but socially unrecognised, emotional suffering. This dynamic was actually demonstrated by the first interviewee quote that opened the introduction to this dissertation, with Nick describing how some of his straight friends just don't understand how pervasive the fear of HIV is in his life.

For HIV-negative gay men, the emotional pain of having to consistently manage serostatus uncertainty—of being the "worried well"—is often minimised or trivialised within the context of a complex health epidemic; the "worried well" are simply "too anxious." And following Lupton's gender analysis, "real" men are expected to manage risk with a degree of bravery, not anxiety. As an example of this type of argumentation on the "worried well," Botnick (2000b) has discussed the "unfounded fear of contagion." Speaking of HIV-negative or serostatus unknown gay men, he argues that this state refers to the fact "that a rational person, equipped with even the most rudimentary knowledge of HIV transmission, could take reasonable precautions from becoming infected with HIV, while at the same time, not becoming obsessed with the fear of contagion. Any irrational fear is considered (in psychological terms) a ''phobia,'' and is by definition pathological in nature" (p. 81). To be obsessed with HIV risk and seroconversion is, to Botnick, a psychological condition, a deficiency on the part of the individual social actor, rather than a direct product of uncertain social conditions. Thus even though his work is very cognisant of how difficult it may be for HIV-negative gay men to have certainty over their serostatuses, Botnick remains somewhat dismissive of these challenges, by minimising uncertainty and reducing HIV prevention to a set of easy to understand social practices. However, the suffering caused by such anxiety is *very* real (de Courville Nicol, 2011). Indeed, Odets avers that the denial or the problematisation of the suffering associated with HIV risk often leads to depression, addiction, hypochondriasis and survivor's guilt (i.e. the idea that one does not deserve to be healthy or even to be alive since so many others have fallen ill and have died from AIDS). Even Botnick admits that after testing negative for HIV antibodies, continued serostatus uncertainty can be psychologically and emotionally destabilizing: "Men who test HIV-negative live in a fragile world of uncertainty, an anomic existence in which the psyche cannot rationalize this state of disorder and meaninglessness" (2000a, p.66). These conditions may manifest in unsafe sexual practices that can lead to seroconversion. Even when this is not the case, serostatus uncertainty can still be experienced as extremely traumatic and painful, depending on the social actor (a theme I shall explore in much depth in chapter six).

Thus both Crimp and Odets highlight the importance of acknowledging the relationship between emotions and sexual risk-taking. No one in the HIV prevention field would deny that emotions play a role in sexual risk-taking and sexual practice more generally. However, one of the characteristics of much of the social science literature reviewed so far has been to regulate emotions to secondary status, or as part of a laundry list of risk factors and to focus on either logical elements of prevention practice (e.g. evaluating the effects of treatment on prevention) or social contexts of prevention (e.g. types of sexual relationships and sexual setting). Within epidemiological science, seeking desire or pleasure becomes a problem in the pursuit of making logical, "healthy" decisions. In critical work, like Adam's, attention tends to be paid more closely to how men are logically processing knowledge about risk given their search for human connection, with emotions (like those fuelled by falling in love) playing a potential role in justifying practices that could lead to seroconversion. What Crimp and Odets highlight, however, is that being at-risk entails *permanently* managing fear and living in an embodied state of uncertainty. To these scholars, managing these emotions long-term is a *heavy* burden that is often erased from view in the HIV prevention field and in activist milieus, let alone from the general public.

Indeed, in the transition to the biomedical era of HIV prevention, significantly less attention has been paid to the ways in which risk management, as an *everyday* lived practice and negotiation with serostatus uncertainty, is a form of emotion management, where social actors are expected to manage their fears—and, in particular, their anxieties over experiences of serostatus uncertainty—in the implementation of healthily desires. We know that older generations of gay men have suffered as a result of HIV related fears, but we hear less about how younger gay men continue to suffer despite great biomedical advancements. Thus a critical investigation into the management of risk during the transition to the biomedical era of HIV prevention would explore how at-risk subjects manage fear and how their actions are also a product of the emotion management strategies of other social actors, including sexual partners and health care service providers.

If, following de Courville Nicol (2011), we believe that emotions and emotion management play a fundamental role in how social actors implement agency, it is necessary to include critical analysis of emotional life into our analysis of prevention practice that does not just regulate emotions as an impediment to "logical" action, but actually sees emotions as fundamental to risk management decision-making. This includes acknowledging the role of desire and pleasure, but following Crimp and certainly Odets, it means acknowledging the important role of fear in the lives of those at-risk—not as something to be problematized, but as something foundational to how social actors come to implement agency. Consequently, in chapter six, when I review the interview data and develop a theory on the relationship between risk, agency and well-being (what I term there as risk disposition), I will pay very close attention to the role of emotions in gay male sexual practice and risk management. In particular, I will pay detailed attention to anxiety, which is an emotional response predicated on the lack of a stabilising point, the lack of clear direction on how to avoid serostatus uncertainty and variable social conditions that, intentionally or not, disempower gay men experiencing serostatus uncertainty. I will explain how under such conditions of uncertainty young HIV-negative gay men are consistently burdened by the persistent anxiety associated with being the "worried well" and how managing this emotional state is a key way in which these social actors implement agency and secure their well-being. In short, if we want to comprehensively understand HIV-negative gay men's experience of HIV risk management, we need to consider the role of anxiety, beyond regulating it to a possible risk factor or a psychological phobia needing therapeutic treatment.

Taking a completely different approach to Odets' focus on emotions, Halperin (2007) draws on Kristeva to describe risky sex through abjection, which he sees as a foundational element of gay male subjectivity. "Gay subjectivity is divided against itself, formed in stigma, in rejection by others—especially by those who one desires—and by oneself" (p.69). Thus recourse to risky sex may be a way for a social actor to assert his agency as a gay man by taking direct control of highly stigmatised sexual practices like barebacking. Since gay men have been considered to be dirty, immoral, dangerous deviants for most of modern history, to Halperin it is logical that some may find psychic solace in engaging in sexual practices that are also considered dirty, immoral, dangerous and deviant (see too, Ibáñez-Carrasco, 2014). Furthermore, Halperin argues that risky sex may open up a space for deep self-reflection: "By putting yourself at-risk, you interrupt the normal course of your life, resist its established order of meaning, and thereby perform an immanent critique of its priorities. Risk is a tactic for testing which of your values ultimately count" (Halperin, 2007, p.47). I will return to this idea in chapter six, where I argue that for many HIV-negative gay men, experiences of serostatus uncertainty (though not always predicated on barebacking and high risk sex) often act as a catalyst for moments of critical self-reflection, a period to consider one's priorities, self-identity and social practices.

Halperin's ideas here borrow from Warner (1999), who also believes that sexual risk-taking can play a role in the implementation of self-identity. Warner argues that HIV prevention has tried in vain to sanitize and "rationalize" sexual pleasure in the pursuit of controlling new infections. However "those who want to clean up sex, like those who want merely to celebrate it, commonly forget that sexiness cannot be divorced from the things that we really dislike about sex: irrationality, impulse, shamefulness, disgust. To this list we should add: risk" (p.277). To Warner, no matter how hard those in the HIV prevention field may wish to organize sexual behaviour so that we can manage risk and establish order, human sexuality will always find ways to express itself that resists such control. It is impossible to completely remove elements of danger and uncertainty—that is, risk—from sexual practice, as some derive pleasure from the impulsive pursuit of the unknown and a direct confrontation with the abject and shameful (Ibáñez-Carrasco, 2014). Thus according to queer theorists, fear itself—feelings of uncertainty, shame, disgust, guilt, etc.—are an integral part of sexual experimentation. They are part of the processes of self-realization and the implementation of self-identity for many gay men. Thus they should not be ignored. Rather, from a queer perspective, such processes ought to be respected for the meaning they may bring to sexual experience.

Indeed, Warner goes further to argue that: "The appeal of queer sex, for many, lies in its ability to shed the responsibilizing frames of good, right-thinking people. AIDS education, in contrast, until recently, often called for people to feel good, affirm life, and see sex as a healthy expression of respect and self-esteem…. The queerness that is repressed in this view may be finding expression in risk" (p. 213). This is similar to the argument I presented in chapter three. There is a tendency in the HIV prevention field to prefer using emotion management strategies focused on fostering healthy desires. Emotional campaigns that employ a rhetoric of fear are considered to be ideologically suspect, because they imply a critique of being "too sexual." In our current emotional economy, it tends to be preferable to foster healthy self-realisation than to discipline social actors through fear and the negation of desire (de Courville Nicol, 2011). Yet to Warner, this tendency to focus on healthy practices and positive emotions (i.e. desires) masks the queerness of sexual practices, erasing the rebellious joy associated with being "too sexual." It masks the fears and abjection associated with gay sex. Yet, gay sex in everyday life is not so sanitary, nor does it *need* to be. Some people may like gay sex and riskier sex because they wish to rebel and resist those messages that tell them that sexual risk-taking is wrong. Through this resistance and confrontation with the abject and dangerous, they establish their self-identity as gay men. Indeed, this is exactly what is happening now with many "Truvada Whores" who are reclaiming gay male sexual expression as promiscuous, deviant and rebellious (though now with PrEP with less of a risk of contracting HIV) (Charette-Dionne, 2014). This also circles back to the idea, which I will explore through the interview data in chapter six, that moments of being at-risk come to serve as moments of critical self-reflection, perhaps especially when these moments are emotionally challenging. There's always something to learn in the dark.

Dean (2009) makes very similar arguments to Warner, arguing that risk is an essential element of queerness and self-realization. His work focuses on the development of specific subcultures of risk where barebacking serves as form of queer kinship, especially among HIV-positive gay men. Indeed, unlike Adam and Latapie, some scholars do see rebellion as integral to sexual risk-taking. Critiquing social science's frequent "rationalization" of gay male sexuality, Dean argues that "when sex between men is reduced to issues of viral transmission, it is no longer treated as sexuality: the overwhelming focus on prophylaxis suppresses considerations of fantasy, of intimacy, and of pleasure. Bareback subculture reclaims gay sex as sexuality by relegating epidemiological concerns to secondary status" (2009, p.11). Thus beyond social bonding and the pursuit of pleasure Dean, like Warner, envisions barebacking as a politically subversive act, as a form of queerness. "If the category queer is defined in opposition not to heterosexuality but to heteronormativity, then bareback subculture pushes the envelope by positioning itself in opposition to gay norms as well; we might say that barebacking is antihomonormative" (p. 9). In queer theory, *hetero*normativity, refers to "institutions, structures of understanding, and practical orientations that make heterosexuality seem not only coherent—that is, organized as a sexuality—but also privileged" (Berlant & Warner, 1998, p. 548). In Dean's (2009) theorisations, *homo*normativity serves as a parallel term that refers to forms of homosexual sociality, institutions, identity, intimacy and expression, which, with the exception of being rooted in same-sex desire, conform mostly to hegemonic social norms. Homonormativity is heteronormativity as enacted (incompletely) by homosexual men and women. In contrast, to Dean, queerness refers to forms of sociality, identity, intimacy and sexual expression (not strictly homosexual), which purposefully seek to challenge and resist hegemonic sexual or gender norms, to challenge heteronormativity/homonormativity.

Dean argues that under the HIV prevention paradigm gay men have been asked to transform themselves from sexual deviants with homicidal and suicidal tendencies that pose a threat to society—that is, from queers—to good biological citizens who monitor their health judiciously and reduce risks to the public as much as possible—that is, to become good gay citizens. Returning back to the ideas posited by Douglas, those who take risks are considered suspect and are often framed as being culpable for putting the community in danger. Thus good gay boys practise HIV prevention and bad gay boys bareback. Through prevention discourse gay sex and gay men are sanitized and homogenized so as not to offend or disrupt the neoliberal order (see too Adam, 2005). Thus engaging in risky sex, according to Dean, can be a way to assert queerness, a way in which to resist conformity and challenge processes of homogenization (and, by extension, globalized capitalism). This form of queer sexual politics, however, has been highly contentious. Even within radical fractions of the HIV response like ACT UP!, reactions toward barebacking have been quite hostile during the transition to the biomedical era of HIV prevention. It has been argued that the return to "unsafe" sex fundamentally goes against the development of safer sex cultures, which have been the bedrock of queer mobilisation in response to the HIV crises (Girard, 2013).

While there is certainly more queer theory that I could explore here, the two major points that this canon brings to the table are already evident. First, there is a fundamental and complex relationship between risk and pleasure, between fear and sex. I argued in the last chapter that epistemic uncertainty cannot be removed from the scientific knowledge we produce about HIV prevention. Queer theory reminds us that uncertainty—the fear (and related curiosity and excitement) of the unknown—cannot be removed from sexual practice between gay men and the implementation of self-identity. There are significant parallels here to the risk society theory I explored in chapter one, which sees a confrontation and mastering of uncertainty as essential to the development of self-identity in Western societies, especially among gay men whose plastic sexuality introduces a range of risks by subverting traditional social institutions. While the social science literature on HIV described in this dissertation so far recognizes that pleasure and desire play a role in sexual practice and prevention decisions, technico-scientific research (the risk surveillance, risk assessment and risk factor research explored in the last chapter) tends to be unable to capture the unique psychic and social subtitles of sexuality which are necessary for us to understand why social actors may put themselves at-risk, both consciously and unconsciously.

We can agree or disagree that sexual risk is a product of the death drive, melancholia, abjection, self-realization and queer kinship. The value of queer theory lays less in its ability to provide definitive answers or its capacity to make generalizable claims about gay men. Rather, its principal contribution to our thinking on HIV prevention is its forceful reminder of the complex nature of human sexuality, and especially of homosexual desire which has become both enacted or repressed within Western societies that have been either avidly homophobic or have only accepted it after it has been normalized, de-queered and reshaped by hegemonic ideals (Warner, 1999).

The second major contribution from queer theory is its forceful reminder that beyond health maintenance practices, HIV prevention has socio-cultural and ethico-political nuances that are commonly erased from evidence-based biomedical literature on risk. Indeed, HIV prevention is, like all risk-based issues, commonly framed as a moral problem, as a seemingly clear delineation between moral versus immoral conduct, good versus bad gay men. Under the HIV prevention paradigm, gay men are expected to continually monitor and reduce their risk.

Biopolitically, a failure to do so—for example, to have unprotected sex, to not get tested routinely, to not seek a PEP prescription—may be viewed as a failure to uphold a model of decent biological citizenship. To be at-risk or to actively engage in risky sexual practices is, from the perspective of biomedical expertise, a problem to be rectified. Good citizens do not seek "unnecessary risk" nor do they pose risks to others. Thus fundamentally, HIV prevention is about turning gay men into responsible biological citizens who follow the precepts of risk management in their lives. However, queer theorists like Halperin, Warner and Dean see risk as a necessary part of queer subjectivity. From their perspective, taking sexual risks operates as a political critique against hegemonic health maintenance practices premised on heteronormativity and capitalist consumption—sexual risk-taking is a form of resistance against neoliberal governmentality.

The queer theory and humanities based scholarship I have just explored offers important contributions to the critical HIV prevention literature that I am investigating in this chapter. Unlike the critical social science research I reviewed first (which is the type of scholarship that this dissertation most emulates), queer scholarship does not tend to explicitly address the issues of knowledge production and the related epistemic uncertainties in the HIV prevention field. Though Dean does argue that epidemiological science flattens out the social and misses key nuances of gay male sexual practice. Queer humanities scholarship, however, closely analyses our governing practices (e.g. education, political mobilisation techniques) and their associated social and political uncertainties (e.g. fostering incidence by ignoring or trivialising fear, stigmatising HIV-positive men, suppressing queer expression). By focusing on the complexity of emotions and sexual desire, this work offers us unique perspectives that allow us to more comprehensively understand how risk is experienced and managed in everyday life.

As a form of critical inquiry, queer scholarship greatly contrasts to the ruling forms of knowledge I first discussed in chapter three. It does this by prioritizing an investigation into the complexity of sexual desire, over the necessity of instilling effective risk management practices to preserve population health. From a public health perspective, barebacking is a problem. From a queer perspective, it is a mode of self-expression and a political tool. Indeed, the richness of queer scholarship is helping us to understand the ethico-political dimensions of sexual activity and the way in which gay sex may be moralised differently across different social sites. Queer or radical perspectives on HIV risk management force us to question the moral frames we tend to place on sexual practices and to consider the broader ethico-political implications of framing prevention as a project of responsible biological citizenship.

It thus pushes our reflection on social and political uncertainty beyond the issue of HIV incidence, so that we can consider how the complex moralisation and politicisation of HIV risk management at the community level affects the everyday experiences of at-risk social actors. Queer theory informs us that part of comprehensively understanding this epidemic requires observing how gay men come to divide themselves as either good or bad gay biological citizens, and how they come to moralise and politicise the necessity of different types of sexual practice (e.g. barebacking and serovariant sex). To make this dynamic more explicit, I shall now investigate some community education examples that will allow us to see how governing practices aim to address these ethico-political dimensions. These examples will allow us to observe how HIV prevention and gay male sexual practices have been moralised and politicised during the transition to the biomedical era of HIV prevention in Canada, one of the principal objectives of this chapter.

Viral Apartheid and the Ethico-Political Dimensions of Sexual Practice: Community Examples

In 2011, Toronto-based activists and ASO volunteers Mikiki and Donald developed a poster with the tagline: "I Party, I Bareback, I'm Positive, I'm Responsible." This was a contribution to the *Poster Virus Series*, a collaborative arts based project run by AIDS Action Now!, a Canadian HIV/AIDS activist collective (Arseneault, 2011). One interpretation of this controversial tagline is that HIV-positive gay men engaging in unprotected anal sex are culpable for the spread of HIV within our communities. This would fit in within epidemiology's problematisation of all risk behaviour, its wariness of serovariant sex and the state's governance of HIV-positive people's sexuality through the criminalisation of HIV nondisclosure. A competing interpretation, however, is that because an HIV-positive man manages his HIV infection through medication and has achieved a suppressed or undetectable viral load, he is a responsible biological citizen who is unable to transmit HIV to his sexual partners. Or he is responsible because he chooses to bareback with other HIV-positive men or HIV-negative men who are aware of the potential risks. In each scenario, risk may or may not be present depending on how one interprets the biomedical evidence and the social context. The clear delineation between moral versus deviant behaviour, between safe versus unsafe sex, has been intentionally complicated for us.

To highlight the extremely controversial nature of this artwork, it is necessary that we consider the specific temporal contexts of its emergence. This poster was produced after the release of the Swiss statement and after the development of Treatment as Prevention based theories and programs (see chapter three for review). However, it was produced *before* the main findings of HPTN 052 were released and well before the PARTNER study confirmed the risk reduction of undetectability among homosexually active men. In other words, Mikiki and Donald were arguing that HIV-positive men barebacking were responsible before scientific consensus on the risk reduction of undetectable viral load. Their questioning of the moral frames placed on barebacking HIV-positive men is thus not based exclusively on existing biomedical evidence, but on a broader queer politics that promotes sexual expression and critiques the over-medicalization of gay male sexuality at the expense of pleasure (Dean, 2009). Indeed, their poster is undoubtedly provocative. Its goal is to get us to rethink how we attach notions of responsibility and blame onto different social actors, and in particular, onto HIV-positive men who take the brunt of this blame, especially in the context of the criminalisation of HIV non-disclosure.

A second equally provocative AIDS Action Now! project is one created by Arseneault, a Montréal-based artist and activist. Playing off of ACT UP's famous "Silence=Death" slogan, Arseneault's poster reads "Silence=Sex." The motivation behind the poster is explained in an accompanying poem "The New Equation." In the poem Arseneault describes being sexually rejected after disclosing his HIV-positive status to an HIV-negative man who claimed that his anxiety condition made him too nervous to have serovariant sex (Arsenault, 2012). Arseneault implies that the HIV-negative man's reaction is hypocritical since he was also an HIV activist (and thus he should have been aware of effective prevention methods) and Arseneault presented minimal risk due to having an undetectable viral load. Nonetheless, after being forced to disclose his HIV status due to the criminal law, Arseneault was sexually rejected, leading him to conclude that "SILENCE=SEX/ Get used to the new equation/ Cause these bastards just don't know the math."

Arseneault's poem raises numerous issues. Principally it highlights how hurtful the romantic and sexual rejection that HIV-positive men routinely face can be. This is, no doubt, the key takeaway from this piece. However, it also highlights how this rejection, at least within a queer logic, may be politicised. Dean refers to the social divisions created by serosorting practices between HIV-positive and HIV-negative men as *viral apartheid*.[16] He argues that it is more politically acceptable for HIV-positive gay men to sexually reject HIV-negative men than for HIV-negative men to serosort. HIV-negative gay men serosorting is considered to be a far less politically correct act in queer communities since it means rejecting positive men and stigmatising people living with HIV/AIDS even further. Creating hierarchies and boundaries through sexual rejection only reinforces shame and discrimination, which a queer politics wishes to expose and subvert.

Arseneault's poem typifies this queer critique, as the political integrity of the HIV-negative man who is a member of the HIV activist response is called into question because he serosorts. His explanation for not following through with sex (rooted in anxiety) is trivialized and his inability to understand the logics of emerging risk reduction strategies (that is, that undetectability means reduced risk) is ridiculed. In short, the HIV-negative man serosorts thus making him a "bastard" who enforces viral apartheid in a socio-political context that already systematically oppresses and shames HIV-positive persons.

We can refer back to Gould's notion of emotional habitus to make sense of Arsenault's artwork. Arsenault's work *explicitly* shames a man expressing and acting on his anxiety, referring to him as a bastard who cannot accurately calculate risk. The poster and poem thus operate as an emotional pedagogy of sorts that aims to inform HIV-negative gay men that it is preferable to minimise rather than to act on their anxious feelings. A social actor's inability to manage serostatus uncertainty in a "brave" fashion is a politically incorrect emotional response that should be pushed aside in the interest of ending HIV stigma and discrimination. Following Odets, HIV-negative gay men who are distrustful of undetectable viral load information and concerned about the risks of serovariant sex are simply the "worried well." From a queer perspective, the "worried well" are in a position of privilege vis-à-vis HIV-positive men and thus they need to manage their emotions "better" and adjust their stigmatising behaviour. Or,

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[16] Charles Barber originally coined the term *viral apartheid* in the *New York Quarterly* in 1991 (Botnick, 2000).

following Crimp, these HIV-negative gay men simply need to put their fears aside in the interest of queer militancy.

The social situation portrayed in this artwork is complex and indicative of the conditions of uncertainty associated with serosorting practices during the transition to the biomedical era of HIV prevention. The pain Arseneault is experiencing and writing from is very real. However, so too is the anxiety that the HIV-negative man is experiencing. The key point to be made here is that this pain is not just about individual experiences and unmet sexual expectations. It is also about how these moments of social conflict or tension can turn into broader political questions about the ways in which gay men are responsible to each other during the transition to the biomedical era of HIV prevention. Under a queer interpretation of HIV prevention, decisions to serosort are not just questioned based on their effectiveness as a risk reduction strategy (i.e. on an ability to avoid HIV transmission). They are also evaluated according to their ethico-political limitations and their reinforcement of HIV stigma.

Examining the ethico-political implications of serosorting is a theme that was also picked up by a state funded community-based prevention campaign called HIV Stigma, which officially ran in Ontario from October 2008 to March 2009. As a large-scale community education campaign we can consider this to be a prime example of a ruling relation, a governing strategy aimed at coordinating the social world by altering how gay men think about their sexual relations. This multi-media campaign was run by the GMSH through ASOs across the province like ACT. HIV Stigma was developed in response to the perceived increase in discrimination directed toward people living with HIV/AIDS within the gay male community (Adam, Murray, Ross, Oliver, Lincoln, & Rynard, 2011). It included an interactive website, HIVstigma.com. The website contained videos of HIV-positive gay men sharing stories about the difficulties of disclosing their status and facing sexual rejection (stories comparable to Arseneault's), along with diverse and conflicting opinions on the necessity of HIV status disclosure from both positive and negative men.

The main visual for the campaign featured on billboards and posters focused on a single provocative question, "If you were rejected every time you disclosed, would you?" Thus, similar to Arseneault's work, the campaign was aiming to address HIV-negative gay men or HIV status unknown men, asking them to consider what it would be like to be HIV-positive and to be sexually and/or romantically rejected every time you disclosed your HIV status. HIV Stigma also addressed other ways in which stigma is reproduced in gay male communities, such as when HIV-negative men seek out "clean" men (read: not living with HIV) on their dating profiles, or when HIV-negative men discuss HIV-positive men as if they have been careless, promiscuous social pariahs. Following Douglas, communities do not always treat all of their members with equal levels of compassion—the blame game is an easy way to establish social hierarchies and substantiate socio-sexual capital in gay male communities.

Moving beyond a recourse to narratives of individual responsibility and risk calculators that characterise most HIV prevention campaigns, the goal of HIV Stigma was "to engage the discourses of moral reasoning and sexual decision making circulating in local communities of gay and bisexual men and to stimulate community building by providing a forum for dialogue that could affect local cultures to enhance sexual health" (Adam et al., 2011, p.795-796). Thus, fundamentally, the issue of disclosure and serosorting was being framed as an ethico-political issue, with the sexual rejection of HIV-positive men considered to be a potential form of discrimination that reproduces stigma that ultimately hurts all members of the gay community, both HIV-negative and HIV-positive men. While individual gay men could agree or disagree with the ethico-political relationship between serosorting and HIV stigma, the goal of the campaign was to get gay men to discuss the broader social implications of their sexual behaviour.

In addition to these ethico-political components, the HIV Stigma campaign also served to educate gay men about prevention. The website highlights why gay men should not rely on serostatus disclosure. Just because status disclosure has not taken place does not mean that one or more partners might not currently be living with HIV. The campaign also outlines why serostatus disclosure is not actually a necessary aspect of safer sex, namely because condoms can prevent the transmission of HIV regardless of the serostatuses of the partners. Furthermore, the introductory video to the website discusses how a reliance on disclosure can in fact be counter to effective prevention. This is because 30% of those living with HIV do not know their serostatus and thus cannot actually disclose that they are positive.[17] Thus serosorting out men who have

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[17] As I discussed in chapter three, this figure is currently estimated to be 19% for MSM. Either this 30% represents an older statistic for MSM, or the number for all risk groups (MSM and non-MSM) was used, which is close to 30%. In either case, this campaign argues that almost 1 in 3 gay men (versus 1 in 5) who are living with HIV do not know their serostatus. This only reinforces the point I made earlier about the role of epidemiological statistics in "beating up" the epidemic in an attempt to aggrandise the threat of serostatus uncertainty. The accuracy or changing

disclosed that they are HIV-positive for men who identify as HIV-negative might actually just lead to self-selecting men who do have HIV. (This argumentation is actually somewhat ironic considering that the campaign wishes to destigmatise serovariant sexual relations, but does so by highlighting the dangers of potential serovariant sexual relations.)

The primary assumption of this campaign is that HIV-negative men, when faced either with a sexual partner who claims to be HIV-negative or who does not disclose their HIV status at all, will be more likely to engage in higher risk sex by forgoing condoms. The introductory video also discusses how HIV stigma, which is in part produced through the sexual rejection of HIV-positive gay men, can deter HIV-negative identified men from getting tested as these social actors come to fear that once they find out that they are HIV-positive they will face a life of isolation. This dynamic contributes to increasing membership within that 30% category of undiagnosed men, which then increases risk to the whole community. Once again, serostatus uncertainty is framed as a major threat to population health.

The concept of undetectable viral load does not take precedence in the main copy of HIV Stigma's website or in the introductory video. This is due to the fact that the campaign was launched in 2008 and thus there was less certainty around the risk reduction potential associated with undetectability during its development. As I discussed in chapter three, the GMSH's official stance on undetectability has been to acknowledge its potential benefits but to warn gay men that research has not yet been clear enough to abandon condoms within the context of an HIV-positive partner having achieved an undetectable viral load. Nonetheless, the role of viral load in prevention is implicit within the campaign's design, since associating higher risk with those who do not know their HIV status is premised on the idea that these individuals will have higher viral loads in comparison to those HIV-positive individuals already on treatment. Furthermore, those of us working as HIV outreach workers during HIV Stigma's launch were trained to have conversations with clients about how HIV-negative men serosorting increases risk.[18] The logic is this: by HIV-negative men selecting out HIV-positive men who have undetectable viral loads for

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nature of the statistic used is actually less relevant than the message, which is the warning that all HIV-negative identified gay men could be living with HIV.

[18] This is referring to the training I received at the AIDS Committee of Toronto in the fall of 2009. Training included both HIV Prevention 101 education and then specific training on performing outreach work at bars, clubs, circuit parties and bathhouses. Outreach work includes handing out condoms, connecting people to health services and providing general education about HIV, STIs and drug harm reduction practices. The condom packs (combinations of condoms and lubrication) that I distributed during my time as an outreach worker were part of the HIV Stigma campaign and included the link to the campaign's website.

other HIV-negative identified men who may actually be in the acute infection stage, a social actor may actually be selecting men who pose the highest risk of transmission. In other words, HIV-negative men selecting HIV-positive men with undetectable viral loads could actually be a form of risk reduction—this is the premise of inverse serosorting (see chapter two for review).

However, if we return to the literature and documents that I first explored in the last chapter, all of which who go to great lengths to breathe uncertainty into the risk reduction benefits of undetectability, the situation becomes quite perplexing. Indeed, as I reviewed in the last chapter, there is an entire body of risk factor research which associates, or at least attempts to associate, optimistic attitudes about undetectable viral load with increased sexual risk-taking. Thus on the one hand, undetectability reduces risk, and on the other hand, treatment optimism is fuelling the epidemic. During the transition to the biomedical era of HIV prevention, serosorting has been simultaneously framed as an effective and/or necessary form of risk management (Remis et al., 2014) *and* a potential source of great risk.[19] In short, when it comes to issues of serosorting and serovariant sex, the information and education in Canada has been conflicting and unquestionably uncertain. We have not reached a stabilising point on these issues.

It terms of its emotion management dimensions, unlike the “It’s Never Just HIV” campaign, HIV Stigma did not principally use the rhetoric of fear to discipline gay men into either having serovariant sex or adopting more effective HIV prevention practices. Rather, the campaign operated to get HIV-negative gay men to think about these issues and adjust their actions through emotion management techniques premised on feelings of empathy, feelings of (community) belonging and then through a feeling of confidence over the effectiveness of existing prevention practices. The campaign is premised on activating healthy-desires rather than disciplining HIV-negative gay men through the rhetoric of fear and/or the negation of desire. This technique substantially differs from Arseneault’s artwork, whose emotion management strategy is clearly premised on directing the agency of HIV-negative gay men through shame.

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[19] In fact, behind the scenes of a gay men’s research conference, one of the key funders involved in the HIV Stigma campaign, a *very* influential figure in the HIV prevention field in Ontario (who shall remain anonymous here), was heard saying *in 2015* that if HIV-negative men want to remain negative they just shouldn’t have sex with HIV-positive men. One of his/her colleagues immediately rebuked him/her. This evidence is, of course, anecdotal. But referring back to Namaste et al.’s (2012) interpretation of institutional ethnography, sometimes critical researchers are motivated by pieces of passing information and dialogue that, though difficult to present as “scientific evidence,” can tell us a lot about expertise and ruling relations. The HIV Stigma campaign may be critiquing serosorting, but let us make no mistake that many key figures in the HIV prevention field in Canada—those who control the finances and direct the policies—consider serosorting effective prevention and HIV non-disclosure as morally dubious.

Arseneault's approach is unambiguous: you should feel bad if you serosort. Arguably, what makes the HIV Stigma's campaign effective, or at least interesting, is less the fact that it doesn't rely principally on a rhetoric of fear, but more that its emotion management strategies recognise the diversity of HIV-negative men's responses and experiences to serovariant sex. Rather than demeaning HIV-negative gay men for not acting in a specific way, it respects these emotional responses and thus fosters conditions for learning and engagement with HIV prevention material and, hopefully, with HIV-positive men.

Thus the strength of the HIV Stigma campaign was its ability to pose HIV prevention not strictly as an issue of individual health maintenance, but as a community-based issue with complicated ethico-political dimensions. In this regard, the campaign should be commended for its creative, nuanced and brazen approach. However, despite this nuance, it is also necessary that we reflect critically on HIV Stigma's messages. First, campaigns like HIV Stigma effectively cause us to reconsider who is at-risk and who poses a risk. However, in this almost paradoxical way, in the gay community we've (gradually and incompletely) shifted questions of responsibility and blame away from HIV-positive individuals—at least those who are aware of their status and managing their health—to the category of those at-risk, a group of mostly HIV-negative identified men. Given that individuals cannot officially confirm their HIV-negative statuses until three months after a potential exposure to the virus and that we have attached risk to a full range of sexual practices including those where prevention was implemented accurately (see chapter three for review), we have effectively told most sexually active HIV-negative gay men that they are both at-risk for HIV and that they potentially pose the greatest risk to each other. It is fascinating how the gay community has picked up epidemiological figures—in this case, the fact that 30% of those living with HIV do not know that they are HIV-positive—to make ethico-political arguments about HIV stigma without much critical reflection on how this just redistributes blame and responsibility onto all of those experiencing serostatus uncertainty. This ironically has the capacity to stigmatise *both* positive and negative men, since these men are living with HIV (so technically they are positive) but do not know it yet (so subjectively they are negative and at-risk).

To be sure, the public health intention behind the HIV Stigma campaign is to get these at-risk men tested and those infected on medication. However, the key argument to be made here is that while some of the community examples that I have been discussing are suggesting that we reconsider the reductive moral frames on HIV prevention that stigmatise HIV-positive gay men, within gay male communities we have only done so by relying on alternative moral frames, on alternative versions of good and bad biological and gay citizenship. In the transition to the biomedical era of HIV prevention, these frames often problematize serostatus uncertainty and HIV-negative gay men who have a preference for serosorting. The new sources of infection and problematic behaviour are those who serosort, those who make inaccurate assumptions about the serostatuses of their sexual partners and those who do not get tested frequently enough.

Let's examine this concretely. If a gay man is HIV-negative and has oral sex (low risk), uses condoms correctly and consistently for anal sex (low risk) and does not serosort out HIV-positive men with managed viral loads (low risk), he can be considered a good biological citizen for practising effective prevention. Likewise, he is to be regarded as a good gay or queer citizen for reducing stigma and discrimination in his community.[20] However, following the literature and community guidelines that I reviewed in the last chapter, this HIV-negative man is now experiencing serostatus uncertainty. All of these sexual practices just listed, though premised as risk reduction methods, still carry a degree of risk—making it impossible, from a biomedical perspective, for the social actor in question to confirm with absolute certainty that he is indeed still HIV-negative. Further, because he is at-risk, he is now placed within the category of men that includes those who may be living with HIV but who do not know it—that is, the category of men that the HIV prevention field often communicates as being the most infectious, the most threatening to population health.

Thus on the one hand, this HIV-negative social actor practising safer sex is a responsible biological citizen when he does everything in his capacity to reduce risk and stigma in his community. And on the other hand, this is a biological citizen who may be responsible for the continued spread of HIV. Of course, by continuing to use condoms and getting tested frequently this man can uphold his good citizenship status and avoid spreading the virus if he does seroconvert. However, this only continues to associate good gay biological citizenship—for both positive and negative men—with the consistent use of condoms and biomedical monitoring, thus stigmatising higher risk sexual practices and those men who, for whatever reason, do not consistently subject themselves to biomedical testing procedures. Within this perplexing

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[20] Today we would be able to add taking PrEP to this list, but this was not the case during the transition to the biomedical era of HIV prevention.

situation, one message is clear: regardless of gay men's sexual practices (high or low risk), the social expectation is that they get tested frequently and never assume that they or their partners are HIV-negative. The moral imperative remains HIV-negative gay men's ability to effectively monitor and continually respond to their sexual lives as at-risk subjects—to recognize the dangers of serostatus uncertainty.

From this analysis of these various community education examples, it remains clear that the HIV prevention field in Canada has failed to achieve a stabilising point in its third decade. As community-based governing practices these three works aim to address the social and political uncertainties associated with HIV prevention practices, namely the stigmatisation and criminalisation of HIV-positive men, the ethics of serosorting and continued HIV incidence in gay male communities. The first two of these documents can be considered to be grassroots and activist texts, while the latter is a state funded education program that may be considered to be an explicit example of an institutionalised ruling relation. Despite their very different institutional locations, all three texts are asking gay men to consider the ethico-political implications of risk management practices during the transition to the biomedical era of HIV prevention. It is only the latter, however, that has an explicit public health mandate of promoting testing and condom use.

The arguments these three texts put forth are important. However, they all rest, to different degrees, on the assumption that risk may be drastically reduced in the context of serovariant sexual relations where the HIV-positive partner has achieved an undetectable viral load. Yet, as I demonstrated in the last chapter, research findings on this prevention topic were not yet generalizable for gay men and serovariant sexual relations (protected and unprotected) have been continually framed in epidemiological research as a key site for seroconversion. Nonetheless, these community examples make their ethico-political arguments about viral apartheid *as if* great epistemic uncertainties and disagreements did not exist over the safety of serovariant sexual relations. They make these arguments *as if* the field had achieved a stabilising point, thus occluding the very conditions of uncertainty that the field continues to produce.

In other words, these community texts often minimise epistemic uncertainties associated with HIV prevention research in an attempt to make ethico-political arguments about HIV prevention practice and to shift questions of responsibility and blame. Despite their best intentions to think through the ethico-political implications of serosorting and viral apartheid, these works are unable to move past reifying moral frames that question the sexual decisions of some at-risk social actors. Indeed, they only produce further social and political uncertainty by calling into question what is a risk, who is at-risk and who poses the most risk. In aiming to shift the focus away from HIV-positive gay men as being the most culpable for continued HIV incidence, they establish HIV-negative identified men as social actors who should be held accountable for continued infections and increasing stigma and discrimination against HIV-positive people.

From a critical social science and humanities perspectives, it is necessary to examine examples like these community texts to get a better sense of gay male sexual practice. Decisions to serosort or to have serovariant sex must be contextualised within a broader social and political context where such decisions become moralised and politicised. Individual social actors have the freedom to make their risk management choices, but they do so within a broader context where the ethics of such decisions are greatly debated—and indeed, as we've seen, where gay men may be publically shamed for failing to meet a particular political standard. HIV-negative gay men are not only asked to manage HIV risk in their lives, but to consider how their sexual choices contribute to sustaining viral apartheid and HIV stigma, and to consider how gay male sexuality may be used to forge queer community and resist homonormativity (in particular, the sanitisation of gay male sex through a public health agenda) (Dowsett, 2009).

Many of these political arguments rely on emerging HIV prevention research in order to portray an uncomplicated symmetry between the prevention of HIV transmission and the preservation of a politics of queer community building. However, this perfect symmetry is an illusion. The field has not reached a stabilising point, though it often wishes to communicate HIV prevention issues to HIV-negative gay men *as if* it has. In this way, HIV-negative gay men are blamed (implicitly or explicitly) for generating HIV stigma, rather than the HIV prevention field for fostering the conditions of uncertainty that make the effectiveness and ethics of serosorting ambiguous. From a biomedical and public health perspective, it is not possible to engage in the activities these community projects position as safe without producing serostatus uncertainty. HIV infection may be avoided, but *not* the risk of HIV infection. Thus, at the core of all these debates, is the social actor who must determine whether or not serostatus uncertainty is worth making a particular political statement and what his ethical obligations are to other gay men and to HIV-positive men in particular. I will explore this dynamic very closely when I get to the interview data.

However, before I move on to the interview data, I shall take a moment to connect some of the key ideas established above. I will explicitly incorporate concepts from the different schools of critical thought on risk and uncertainty first discussed in chapter one, and begin to chart the relationship between epistemic, social and political and experiential uncertainty during the transition to the biomedical era of HIV prevention.

Subjects of Risk and the Conditions of Uncertainty

Before proposing an original empirical project that will contribute to the field of critical social science on HIV, I will first take a moment to zoom out and critically reflect on the relationship between the various ideas put forth in the last four chapters. In this dissertation I argue that the HIV prevention field has failed to achieve a stabilising point in its third decade. Experts have not reached a consensus on key prevention issues and there has been a frequent lack of synergy across different knowledge production practices and governing practices. Through multiple examples I have demonstrated these conditions of uncertainty, arguing that the transition to the biomedical era of HIV prevention has been characterised by a proliferation of epistemic and social and political uncertainties relating to both long-standing issues and newly emerging prevention technologies. Consequently, HIV-negative gay men are continually affected and governed by uncertainty. Gay men are not only affected by HIV risk in terms of the threat of infection, but they are also affected by the uncertainties generated from the very response set-up to manage the threat of this disease. Moreover, by fostering conditions of uncertainty the field of HIV prevention has put gay men at-risk. I mean this predominantly in the more general biopolitical sense of encouraging HIV-negative gay men to consistently think of themselves through the lens of serostatus uncertainty. But I also mean this in a more practical biomedical sense; ambiguous and conflicting messaging and policies arguably create opportunities ripe for the transmission of HIV.

Drawing on the uncertainty triad framework produced in consultation with critical risk and uncertainty studies, it has been my task so far to critically describe the types of knowledge produced about and governing practices implemented for gay men and HIV risk during the transition to the biomedical era of HIV prevention. In so doing, I have described how various knowledge production practices have produced and mobilised epistemic uncertainties to achieve diverse biopolitical agendas. I began with an inquiry into ruling forms of knowledge on gay male HIV prevention, examining key biomedical and public health research. By examining various texts or examples of ruling relations, I have also inquired as to how different institutions are responding to the social and political uncertainties associated with existing prevention technologies and how various governing practices may minimise or aggrandise the effects of epistemic uncertainties in the interest of achieving diverse biopolitical goals.

In chapter three, I examined how mainstream biomedical and public health research—ruling forms of knowledge—produces and cultivates epistemic uncertainty, casting doubt onto available risk management strategies. I demonstrated how epidemiological statistics are often used to "beat-up" the epidemic, how serostatus uncertainty has become framed as an even greater threat to population health and how epidemiology frequently questions the certainty of established HIV prevention methods including protected anal intercourse. Examining risk factor research such as treatment optimism and AIDS optimism research, I argued that public health experts tend to transfer the epistemic uncertainties related to new biomedical technologies directly onto our understandings of gay male sexual behaviour. To make sense of HIV incidence rates epidemiologists hypothesize (and are often unable to resolutely prove) that social actors are using these technologies to justify additional sexual risk-taking. Thus while HIV scientists generate epistemic uncertainty, its moral implications are shifted onto everyday social actors.

Relatedly, in chapter three I examined the ways in which community organisations have been hesitant to appear too enthusiastic about advancements in biomedical technologies and how policy developments, such as the criminalisation of HIV non-disclosure, have tended to err on the side of caution when factoring in the prevention benefits of these technologies. From this review, I argued that the proliferation of uncertainty (both epistemic and social and political) related to the prevention benefits of HIV medications has been a defining characteristic of the transition to the biomedical era of HIV prevention. The risks associated with serovariant sexual relations have been questioned in the context of undetectable viral load information and HIV having becoming a chronic manageable condition. However, the limited expert consensus on these issues has created a confusing and convoluted picture, though one that still manages to consistently pinpoint at-risk men as fuelling the epidemic through unmanaged viral loads (i.e. acute infection) and stigmatising sexual behaviour (i.e. serosorting).

In this chapter, I extended this analysis by examining critical social science literature and humanities perspectives on HIV to investigate how the uncertainty generated and surrounding HIV prevention affects gay male sexual practice and how uncertainty has become moralised and politicised at different social sites. Drawing on different critical works and community documents, I demonstrated how gay men adapt their the sexual practices as the epidemic evolves and, quite crucially, how rapidly changing knowledge about HIV risk creates nuanced ethico-political dimensions that at-risk social actors must negotiate.

Critical perspectives on gay male HIV prevention have provided us with numerous explanations as to why gay men may take sexual risks that add necessary nuance to the risk factor research described in the last chapter. Critical scholars have highlighted the development of complex risk arrangements like negotiated safety, nuanced risk reduction practices among gay men in high risk sexual subcultures, the shifting nature of sexual practices in relation to biomedical advancements and the complex roles of psychic forces, emotions and political resistance in justifying sexual risk-taking. In describing sexual risk-taking practices on the ground, these critical scholars have called into question biomedical and public health models that over-simplify sexual risk-taking by removing social, political and cultural context and eradicating nuanced understandings of sexuality from our examination of HIV prevention practices. In so doing, some of these scholars have also directly called out mainstream HIV research and education programming for playing a role in facilitating HIV incidence through the development of contradictory and stigmatising messaging.

Critical literature, both social scientific and humanities based, has also highlighted the ways in which HIV prevention tends to become a highly moralised project that can pit HIV-negative and HIV-positive gay men against each other. This viral apartheid threatens social cohesion within gay male communities and can lead to increased sexual risk-taking by fostering HIV related stigma. Drawing on some contemporary activist art and education campaigns that critically analyse viral apartheid, I argued that though our understanding of how HIV is transmitted has become more nuanced during the transition to the biomedical era of HIV prevention, the ethico-political dimensions of prevention—especially around issues of serostatus disclosure and serosorting—remain complex and contentious. Following Flowers (2001), our understandings of where responsibility and blame lay may continually shift as we learn more about HIV and develop new prevention technologies. Yet the social expectation that gay men, both HIV-positive and HIV-negative, should manage risk to the best of their ability endures, despite the uncertainty of existing knowledge on risk management.

To summarise the literature review so far, the field of HIV prevention is interested in risk. Risk assessment research qualifies risk and effective risk management strategies. Risk surveillance research quantifies and tracks risks within the population. Risk factor research then comes in to understand why social actors take risks and attempts to correlate a series of behaviours, attitudes and psychosocial dynamics with increased sexual risk-taking. At their core, these research domains—rooted in the logics of evidence based-medicine and public health governance—seek to problematize sexual risk-taking and determine which groups and social dynamics are the greatest threat to population health. These forms of knowledge production practices produce the core data behind the governing practices implemented by the HIV prevention field. Critical perspectives then come in to complicate matters, outlining how the above forms of research fail to capture the complexity of sexual practice and play a role in producing moments of heighted risk through contradictory messaging. This research sees sexual risk-taking not as a problem in and of itself, but as a fundamental facet of gay male subjectivity within a neoliberal risk society and as a potential component of queer political resistance. At its core, this critical research domain seeks to expose the ways in which risk surveillance, assessment and factor research create moral frames around HIV and gay male sexuality that can limit sexual expression, produce stigma and threaten social cohesion between HIV-positive and HIV-negative gay men.

All of these domains of research work together to produce *subjects of risk*—that is, topics and debates about the sources of HIV risk and what constitutes effective risk management. Through these discussions gay men are turned into *at-risk subjects*, into social actors who are understood and governed by their relationship to HIV risk and risk management strategies and who are then expected to govern their own conduct in relation to HIV risk. For an HIV-negative social actor this form of governmentality operates primarily through the mechanisms of serostatus uncertainty. Any action that shifts a social actor from absolute certainty over his serostatus to (some degree of) uncertainty over his serostatus renders him at-risk, with the moral expectation that he will then seek to get tested to establish serostatus certainty. If he is found to be HIV-positive, he will be expected to continue to subject himself to biomedical authority, to begin treatment to manage his viral load and to disclose his risk potential to all of those he has sex with as required by the state under specific conditions. If he found to be HIV-negative, he will be expected to continue to envision himself as being at-risk. The moral expectation is that he will continue to get tested routinely, to understand that an antibody test may not completely confirm his HIV-negative status due to the window period and to understand that because of the mechanics of viral load in the acute infection stage, his serostatus uncertainty means that he may be presenting others at a significantly high risk of infection.

Beyond testing, the moral expectation is that at-risk subjects will acknowledge that risk lurks everywhere, within every sexual partner and within one's own body. Love is a risk, casual sex is a risk, monogamy is a risk, protected sex is risk, unprotected sex is a risk, depression is a risk, happiness is a risk, sex is a risk—in short, to be a gay man is a risk. To reduce this risk, the expectation is that at-risk subjects will practise forms of safer sex and will incorporate the best and most accurate knowledge about HIV prevention, which is constantly changing within the transition to the biomedical era of HIV prevention. To find this information at-risk social actors may turn to the HIV prevention field to find resources to guide decision-making. However, while the basic tenet of condom use for anal intercourse remains fairly clear, the level of risk and thus the level of safety associated with all aspects of HIV prevention often remains uncertain, with the field producing contradictory or ambiguous claims about everything from oral sex to undetectable viral load.

Furthermore, while a top-down public health approach may hold all gay men to be equally at-risk and gay male sexuality as posing a risk to population health, the moral frames within gay male communities can create hierarchies and contention between different groups of gay men. Contemporary risk management strategies have created a series of risk related subjectivities: HIV-negative men, HIV untested men, HIV-positive men, HIV-positive men with undetectable viral loads, HIV-positive men with detectable viral load, HIV-negative men on PrEP, men on PEP, men who serosort, men who do not serosort, promiscuous men, monogamous men, barebackers, occasional barebackers, drug users, etc. Each of these subjectivities (and combinations therein) pose their own degree of risk to the population. Researchers, community organisations and activists problematize the risk management strategies of these various at-risk subjects in an attempt to improve public health outcomes, foster sexual expression and build social cohesion. Yet, placing or replacing blame still remains the dominant method employed by gay men, even from critical and reflexive voices, for understanding the sexual actions of other gay men. The impetus of some gay men to moralise the sexual behaviour of other gay men can ironically grow even stronger as more epidemiological and biomedical knowledge is produced about HIV that allows for further pinpointing of risk (and consequently the pinpointing of blame). I have noted that this moralising gaze is being directed more and more on those who are undiagnosed, those who have not subjected themselves to biomedical authority and thus those who pose the biggest threat to population health and to the social cohesion of gay male communities through a potential preference for serosorting.

These various dynamics can be described through some of the main theoretical ideas from critical risk and uncertainty studies that underlay the above analysis. From a risk society perspective we can see how social actors are expected to implement self-identity and processes of individualisation within the context of great uncertainty and shifting knowledge claims on HIV prevention. The transition to the biomedical era of HIV prevention has increased the number of available risk management strategies and thus has increased the "burden of choice" among HIV-negative gay men. In terms of risk reflexivity, we have also seen how institutions like public health, the law and the gay male community (comprised of service organisations and activists) have shifted their response, albeit often in contradictory ways, to the epidemic in relation to emerging risk knowledge, such as information on viral load. Following Rose (2007), at the biopolitical level we can see that the more knowledge we have gained about the human body (such as information on undetectable viral load), the more ethical questions emerge as to how social actors, as biological citizens, should respond to this uncertain information. Every emerging risk reduction strategy also comes with its potential for increasing risk, an exasperating dynamic that social actors must navigate in their everyday lives.

Moreover, we can see how achieving serostatus certainty has become the mark of good biological citizenship. Indeed, the Treatment as Prevention paradigm discussed in the last two chapters is founded on the very belief that that HIV epidemic will be resolved once everyone's serostatus has been confirmed. However, since sexually active HIV-negative gay men can rarely achieve serostatus uncertainty, they also consistently fail to achieve this idealised model of biomedical citizenship. Given a lack of consensus in the HIV prevention field over effective risk management strategies, HIV-negative gay men are always framed, even if only implicitly, as failed citizens threatening population health. At-risk subjects are always problems. Biopolitically, a sexually active gay man is always posing some threat to population health.

From a cultural perspective, we can observe how emerging risk management choices become highly moralised and politicised not just among experts, but also among everyday lay people. Unlike in the confused stage (1981-1986) of the epidemic, during the transition to the biomedical era of HIV prevention gay men are no longer positioned as being equally at-risk as new moral frames for affording blame have been produced with reference to existing biomedical knowledge. For example, one particular moral frame that has become dominant is the critique of serostatus uncertainty and how at-risk social actors pose more risk to communities and produce stigma through their preference for serosorting. Critiques against viral apartheid as well as political justifications for barebacking demonstrate Douglas' arguments that "risk-taking" always needs to be contextualised within particular cultural contexts that make certain risks more or less justifiable. Given a severe lack of consensus among experts on key HIV prevention issues, there are, according to Douglas, always new ways for interpreting the evidence that allow us to cast blame. With just a slight tweaking of the numbers, all of a sudden condom using negative men are the root cause of the epidemic, with another tweak, newly diagnosed positive men. At the heart of the HIV prevention field, then, is not just the desire to solve the HIV crises, but to do so by determining who exactly is responsible for the spread of this disease.

From a governmentality perspective, knowledge produced about HIV risk serves as a way for the state to govern gay men through the allocation of resources and health services and through the development of public health policy, education and the law. Beyond these policy considerations, the continual production of research and programming which frames gay men's lives through HIV risk produces at-risk subjects, social actors who are expected to self-regulate vis-à-vis this knowledge. Following Adam (2005, 2006), HIV education frequently positions gay men as neoliberal sexual actors who are meant to manage health threats through a market rationality premised on risk calculation. These models of HIV prevention, which are primarily based on the logic behind the health belief model, promote a degree of healthism (Crawford 1980), a preoccupation with health—and in this instance, the avoidance of HIV infection—as the primary definition of well-being and the implementation of self-identity. When it comes to health maintenance, risk management is not only a thing a social actor *does*, but it is a indication of who a social actor *is*. We come to understand (as well as moralise and evaluate) HIV-negative gay men by how they respond to evolving risk management strategies, negotiate serostatus uncertainty and prioritize remaining HIV-negative.

In addition to the logical components of HIV risk management, it is evident that addressing oneself as being at-risk is also a highly affective process, fuelled by feelings of uncertainty, anxiety and possibly shame. Following Crimp and Odets, we are reminded that many sexually active HIV-negative gay men live with the near constant fear of seroconversion. Drawing on in/capacity theory we can see the ways in which fear plays a profound role in shaping decision-making and agency in the interest of implementing security. For example, a social actor who feels anxiety or uncertainty about his HIV status may be prompted to seek an HIV test. At the macro level, we can see how the HIV prevention field has aimed to manage the emotions of HIV-negative gay men so that they reconsider their risk reduction methods. For example, in the previous chapter I examined emotional campaigns that employ a rhetoric of fear in order to actively cultivate anxiety, question the manageability of an HIV diagnosis and prompt HIV-negative gay men to use condoms. I also examined examples of HIV prevention education that use risk logic and systemised ways to describe safer sex in order to help social actors make "logical" HIV prevention choices—these models are meant to make men feel rational and self-sufficient. I also examined community examples that, implicitly or explicitly, aim to cultivate shame in gay men for advancing HIV stigma and serosorting, so that they may be prompted to revaluate their risk management practices. Some of these communication examples operate as emotional pedagogies, making certain feeling states, like anxiety, appear unjustified in the context of rampant HIV stigma and discrimination. All of these strategies are morally-based as social actors are meant to reflect on how they pose a threat to their very own health. HIV-negative gay men are often governed through fear, are made to feel uncertain about their serostatus and are frequently reminded that they pose the greatest threat to themselves. Nonetheless, though some critical scholarship has reflected on the role of emotions in the HIV/AIDS epidemic more generally (Gould, 2009), arguably there is still an opportunity to reflect more deeply on the role of emotions within HIV prevention and sexual practice during the transition to the biomedical era of HIV prevention. I will carry on this work in chapter six when I reflect closely on the relationship between anxiety and agency.

The summation of all the above is that the HIV prevention field has failed to achieve a stabilising point in its third decade in Canada. New knowledge continues to emerge that fundamentally reorganises and challenges our ideas about risk and HIV transmission, but that also produces additional epistemic uncertainties. Institutions aim to adapt to this knowledge and its associated epistemic uncertainty, while also having to contend with the convoluted social and political implications of risk management. The product has been a myriad of contradictory and ambiguous claims, policies and activist discourses about HIV and gay men's health.

This dynamic leaves us to consider how exactly gay men, as at-risk subjects, are being affected by these conditions of uncertainty. How does the shifting and uncertain nature of HIV prevention knowledge and governing practices actually affect gay men in their everyday lives? In what specific ways do the *subjects of risk* come to influence the lives of *at-risk subjects*? Answering questions like these regarding the everyday experience of navigating HIV risk will be the main focus of this dissertation going forward, as I move on to presenting the details from an empirical investigation. However, in closely analysing the narratives of gay men navigating risk, I will not only gain nuanced insight into everyday experience. I will also gain additional critical perspectives on the nature of the HIV prevention field in Canada in its third decade.

Indeed, the goal of this dissertation is not only to discuss how gay men are affected by HIV risk as an externalised threat of a disease, but also to examine how they have been affected by our response to HIV. I am not just interested in tracking what gay men do sexually, but I am also interested in charting the relationship between gay male sexual practice with the knowledge production and governing practices that are ostensibly responding to the needs of gay men. I am interested in exploring how epistemic and social and political uncertainties become manifest as experiential uncertainties in everyday life, and reflecting on which risk-related experiences become more frequently adopted by the knowledge production practices in the HIV prevention field at the exclusion of others.

In other words, the previous four chapters have provided the necessary context (social, political, cultural, epistemological, etc.) by which I can situate the forthcoming narratives about gay male sexual practice and risk management. Following the tradition of critical social science, this background will allow me to move beyond a focus on individual behaviour, to explore the complexity of sexual practice. The analytical tools presented in the above chapters provide us with the critical capacity to think about gay male sexuality beyond a reductive recourse to individual based risk-making, thus avoiding reduplicating a neoliberal health model of risk governance. However, in analysing these men's lives thoroughly, I will also gain additional critical insight into the effects and limitations of contemporary knowledge production and governing practices. Consequently, I will continue to build a more comprehensive picture of the HIV prevention field during the transition to the biomedical era of HIV prevention, charting the relationship between epistemic, social and political and experiential uncertainties. Again, following the reflexive tradition of critical social science and institutional ethnography, insight into the everyday experiences of social actors may be used to question how dominant knowledge production and governing practices that make up a field of action may be failing to meet the needs of those it ostensibly seeks to help.

In sum, going forward I will provide additional perspectives on gay male sexual practice that will add to the critical scholarship I presented in this chapter. This analysis will continually bring us back to a critical reflection on the HIV prevention field (especially in chapter seven), as I question the effects of failing to reach a consensus point in its third decade. I shall now chart the specific questions guiding the following empirical project before moving onto the next chapter on methods.

Uncertainty and Sexual Practice: Toward New Critical Questions

The empirical project that I am now putting forth is the product of thinking in and through the uncertainty triad, the key tenants of critical social science on HIV (including some key aspects of institutional ethnography) and the limitations of existing literature on gay men and HIV prevention, including both mainstream and critical work. Thus the originality of this project is based on the interconnectivity of these different analytical tools and a deep engagement with the existing literature.

In chapter one I drew on key theories from the field of critical studies on risk and uncertainty to introduce the uncertainty triad. My review thus has far has focused on the first two spheres of uncertainty management that make up this framework: knowledge production (with its associated epistemic uncertainties) and governing practices (with its associated social and political uncertainties). The remainder of this dissertation will focus intently on the last domain of uncertainty management, everyday experience. Adapted to my inquiry on HIV-negative gay men and HIV prevention, a critical reflection on everyday experience asks: First, during the transition to the biomedical era of HIV prevention, how are social actors experiencing HIV risk in their everyday lives? Second, how are social actors adjusting their sexual practices in response to HIV risk? And third, how do social actors perceive themselves as being at-risk for HIV?

These questions are, of course, extremely broad inquires into the pragmatic dimensions of risk management. It will become necessary to frequently mobilise my prior review on knowledge production practices and governing practices in order to target my analysis in a way that provides critical, original insight. Moreover, as a work of critical social science, I am not only interested in providing additional perspective on everyday experience, but also in utilising examples of everyday experience to question ruling forms of knowledge and ruling relations within the HIV prevention field. Thus my analysis in the following pages will frequently return us back to the key arguments presented in the previous four chapters, as I come to make sense of the connections between knowledge production, governing practices and everyday experience.

I shall now break down the particulars of the forthcoming empirical investigation to chart out exactly how I will contribute original insights to the field of critical social science on HIV.

Serostatus Uncertainty vs. Sexual Risk-Taking

From my review of the scientific and critical literature, I demonstrated that regardless of their specific sexual risk-taking practices and prevention strategies employed, the general expectation is that HIV-negative identified gay men will recognize the possibility for seroconversion and will get tested routinely. This means continually acknowledging oneself as being at-risk. This prompts us to ask: During the transition to the biomedical era of HIV prevention, what is it like to live one's sexual and romantic life with serostatus uncertainty as a constant consideration? What is like to go through long periods experiencing serostatus uncertainty? What are the pragmatic dimensions of routinely dealing with serostatus uncertainty?

Thus the following analysis is *not* interested in exploring why gay men take sexual risks (that is, have UAI) and either elaborating further on the psychosocial factors that encourage sexual risk-taking or offering more critical explanations for UAI based on sociocultural and political context. This dissertation is not another exposition on the politics of barebacking. Of course, any research project interested in gay male sexuality and HIV risk will inevitably add to our understandings of why gay men might bareback. Yet, the field has arguably reached a saturation point on this issue. Though we can be certain that risk factor research will continue to correlate every facet of gay male life with UAI until we find a cure.

The original focus of this dissertation is on serostatus uncertainty. Rather than wondering why gay men take sexual risks, this project begins with the assumption that *some* degree of sexual risk-taking (however minimal) is inevitable in the lives of all sexually active social actors and that all HIV-negative gay men have moments where they are uncertain about their HIV status. Unprotected anal intercourse is only part of this story. My goal is to paint a more holistic picture, to garner a more intricate view of sexual practice.

The critical focus of this dissertation is on better understanding what gay men do *after* sexual risks (of whatever degree) have been taken and how they manage experiences of serostatus uncertainty. Importantly, experience here is not limited simply to sexual experience and risk negotiation between sexual partners (though this will take up a substantial part of the investigation). Rather, I am interested in the entire range of experiences associated with serostatus uncertainty, including seeking health care services, waiting the window period to get an HIV test, finishing a PEP treatment and starting a new relationship after a difficult period of managing serostatus uncertainty. A critical reflection on the relationship between gay men's experiences navigating governmental bureaucracy (such as immigration services) and health services has been underexplored in the HIV prevention literature in Canada. Through an investigation on serostatus uncertainty this dissertation seeks to rectify this absence. This dissertation also offers original contributions by focusing intently on both the pragmatic aspects of health maintenance (e.g. HIV testing) and the sexual dimensions of risk management (e.g. consent) that are associated with serostatus uncertainty. There are similarities here to the insightful work of Körner, Hendry and Kippax (2005a, 2005b) who investigated why gay men sought prescriptions for PEP and how they were affected by this experience.

Further, as I demonstrated above, the HIV prevention field produces a series of competing claims about HIV prevention, generating a tremendous amount of uncertainty as to what qualifies as effective prevention, and consequently, what is appropriate or moral conduct in relation to risk management. Indeed, part of what I have been arguing so far is that the lack of consensus and proliferation of epistemic and social and political uncertainties in the HIV prevention field have made it nearly impossible for sexually active HIV-negative gay men to avoid instances of serostatus uncertainty. The lack of agreement and the ambiguous messages create a context whereby routinely experiencing serostatus uncertainty remains inevitable. Given these conditions of uncertainty, in the following pages I am interested in exploring how young HIV-negative gay men manage the epistemic and social and political uncertainties associated with HIV prevention and what social conditions allow some HIV-negative gay men to manage these uncertainties more easily than others. For example, how does one digest competing claims about oral sex, condom efficacy, undetectable viral load, serovariant sex, the necessity of HIV status disclosure, the severity of contracting STIs and living with HIV? Following Douglas, the values held by at-risk social actors will play a role in determining how knowledge on these issues is consumed and how uncertainty is negotiated. This project will explore these values and how gay men, through their management of serostatus uncertainty, generate moral positions on sexual conduct and health maintenance practices. I will explore how epistemic and social and political uncertainties turn into experiential uncertainties, or ethico-political challenges, at the level of everyday experience. And I will then use this critical exploration to question the knowledge production and governing practices of the HIV prevention field.

Hence in the remainder of this dissertation I will investigate the specific contexts by which young HIV-negative gay men come to acknowledge themselves as being at-risk, how they manage serostatus uncertainty and how they make sense of the epistemic and social and political uncertainties associated with HIV prevention. The following pages will investigate these issues by examining the everyday risk-related experiences and sexual practices of HIV-negative identified gay men between the ages of 18-35 who are not active members of the HIV service industry and who are living in Toronto and Montréal. I will now explain why I have chosen these demographic parameters before I move on to the next chapter on interview methods.

Operationalizing Critical Reflections: Selecting the Sample Population

In order to operationalize critical thought most effectively into research practice, social scientists must consider how such ideas can be integrated into our methods. Critical thought not only helps us to think theoretically, but it also helps us to think about how to collect evidence in original ways. Indeed, part of the critical capacity of institutional ethnography is the attention it pays to which aspects of the social (social groups and social practices) tend to be excluded from ruling forms of knowledge and thus ruling relations (Namaste et al., 2012; Smith, 2005). Put differently, knowledge production practices and governing practices tend to be built from limited views of the social world and thus the institutional dynamics aversely affecting those less integrated into research are left unquestioned and thus unresolved. To fix social problems they first need to be made visible to us. By collecting data on that what has been marginalised in dominant research practice, critical scholars can enlarge the scope of the social. Thus the following demographic parameters have been based on a close reflection of what social groups and social practices have been marginalised (not necessarily always ignored, but certainly not what is predominant) in the established scientific and scholarly literature in the field. Following IE, I do this in the interest of expanding our scope of the everyday experiences associated with HIV risk management and questioning ruling forms of knowledge.

The first characteristic of the selected research sample is a focus on HIV-negative identified gay men. This project examines HIV-negative gay men since it is interested in the experiences of being at-risk and dealing with serostatus uncertainty. Remaining HIV-negative is not an assured subjectivity but something that is managed over the course of one's life (Dowsett, 2009). Thus this project is interested in what Warner (1999) has somewhat playfully described as seropersisting (that is, the opposite of seroconverting). It is interested less in tracking histories of sexual risk-taking and more in thinking about how HIV-negative gay men are affected by HIV risk in diverse ways over the course of their lives.

HIV-positive gay men obviously manage risk in their everyday lives and can also be considered to be at-risk subjects (for example, they manage the risk of being criminally charged every time they have sex with a new partner). However, as has already been made clear in the review of the literature, both mainstream and critical, the specific perspectives of HIV-negative and HIV-positive men may not exactly be the same as their experiences and relationship to the virus are fundamentally different. While both HIV-negative and HIV-positive men are interested in preventing the further transmission of HIV, one group is living with the uncertainty of infection and the other is living with the certainty of infection. The actual mechanics of managing risk (i.e. HIV testing versus viral load testing, using ART as PEP or PrEP versus managing a chronic infection, deciding whether to serosort or whether to disclose one's HIV status) are parallel but different, as are the moral expectations placed on each subject position. Indeed, these are two different, though highly related, subjective orientations to a set of biological and social risks and it is important to understand and critically reflect on both subjectivities instead of making assumptions about one group vis-à-vis the experiences and opinions of the other. Indeed, many studies mentioned in the last two chapters, both mainstream and critical, have examined an HIV risk management issue, like barebacking, predominantly from the perspective of HIV-positive men and have then applied these findings to discuss *all* gay men (Adam 2005, 2006). Support for the treatment optimism hypothesis, in particular, has often been based on close examination of HIV-positive men's belief systems. This focus has marginalised closer reflection on how undetectability is affecting the sexual practices of HIV-negative men. I will examine this issue closely in chapter seven.

It is important, however, that this dissertation is not used to generate a strict binary between positive and negative men, or even worse, reinforce a viral apartheid. The danger in focussing specifically on the challenges HIV-negative gay men face in confronting serostatus uncertainty is that the arguments developed can be erroneously used as justifications for serophobia or discriminatory behaviour. However, similar to Odets' work, the argument being developed here is that if *some* HIV-negative gay men are fearful of HIV and thus HIV-positive men—and to be sure, we should actually begin our work by giving HIV-negative gay men a little more credit than assuming that they are all serophobes—it is necessary for us to understand the *social conditions* that produce this fear and lead to potential social conflict. Arguably, taking the time to critically understand and reflect on how the fear of HIV (and for some, HIV-positive men) affects some HIV-negative men (and not others), can do more to help us combat stigma and discrimination than ignoring HIV-negative men's concerns or focussing exclusively on why they take sexual risks. No doubt, including simultaneous reflection on the experiences of both HIV-negative and HIV-positive men during the transition to the biomedical era of HIV prevention could have enriched this project. However, while an exclusive focus on HIV-negative gay men may be considered a limitation of this dissertation, narrowing the scope of this project and thus offering a great deal of nuance about negative men and the process of seropersisting is also arguably one of its strengths.

The second key demographic focus of this project refers to age group. Of course, researchers have been investigating younger gay men since the beginning of the epidemic as this age group generally contains some of the highest rates of seroconversion and STIs (Public Health Agency of Canada, 2013). However, the following investigation is less interested in studying this group because of its risk profile *per se* and more interested in understanding how serostatus uncertainty plays a role in the lives of a specific generation (or cluster of generations, some Generation Y and some Millennials) of gay men whose experiences may or may not match with older generations of gay men represented in the bulk of scholarly literature, particularly the critical literature, on HIV.

The men comprising this younger generation, what some have called the Post-AIDS generation (Dowsett, 2017; Halkitis, 2014; Rofes, 1998), were not adults during the AIDS crisis years (1981-1995; or what Flowers would term the confused and somatic periods) and mostly became sexually active after the introduction of ART shifted HIV from a death sentence to a chronic manageable condition—that is, during the transition to the biomedical era of HIV prevention. Many of these young men would start coming out after HIV incidence rates were relatively stable (though there were periods of relative increase) and during the introduction of new biomedical information about undetectable viral load and technologies such as rapid HIV testing. By the time these men would start coming out the HIV/AIDS movement, once loud and disruptive, had became largely bureaucratized. And HIV/AIDS as an issue affecting Canadians had become less pervasive in the media since it was now clear that the epidemic would not spread to the "general population." In addition to HIV/AIDS, there have been remarkable shifts in society's general acceptance toward gay men in the last several decades, at least in cosmopolitan urban centres like Toronto and Montréal.[21] For example, gay marriage was legalized in Canada in 2005. There have also been notable shifts in how and where gay men meet, both in terms of technological advancements (online and mobile apps) as well as different neighbourhoods having become more queer friendly such as the Mile End in Montréal and Queen Street in Toronto. It is necessary to understand these broader social and cultural shifts if we are to more comprehensively understand sexual practice.

In some sense, this younger group of men could be considered to be lucky in comparison to older generations, sometimes referred to as the AIDS Generation*s* (Dowsett, 2017; Halkitis, 2014; Rofes, 1998), who watched their communities be ravaged by the illness and/or started to become sexually active when there was far more uncertainty associated with the epidemic. However, while young men currently in their 20s and early 30s did not have to directly face the

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[21] I would be remiss to ignore the fact that on June 12, 2016, during the process of editing this dissertation, a gunman killed 49 people at a gay nightclub in Miami, Florida and critically injured dozens more (CBC, 2016). Things have certainly improved for gay men and the broader LGBTQ in the last several decades. But attacks like this one are stark reminders that violence toward LGBTQ persons are not a thing of history.

AIDS crisis in Canada, they were born and raised during these years and thus witnessed the effects of the epidemic through media and occasionally through a family member's illness. At this time, HIV/AIDS was commonly framed as one of the worst things that could happen to anyone, one of the most stigmatised, maligned medical conditions (Treichler, 1999). The psychosocial ramifications of living through this period on younger gay men and how it may affect their sexual lives have yet to be fully explored, especially in the Canadian context.

Another key original methodological contribution of this dissertation is a focus on HIV-negative men less linked to the HIV service industry and who operate outside of the established epistemic community. The following chapters offers a critical examination of how the experiences of younger HIV-negative gay men managing serostatus uncertainty in their everyday lives compare to the knowledge produced and communicated by the HIV prevention field. In order to draw this comparison the voices captured in the remaining pages will be those who are not active members of the HIV prevention field. This comparison between the HIV prevention field and those at-risk is influenced by critical social science work that argues that knowledge is produced and communicated about HIV by experts who are motivated by the interests of their disciplines and career trajectories, political and community-based ideologies, institutional or organizational affiliations and funding opportunities (Epstein, 1996; Holt, 2014).

Like all research fields, HIV research is guided by what Holt (2014) refers to as *epistemic communities*, tight networks of professionals and individuals with acknowledged expertise and competence in a subject, who are expected to guide developing research questions and policy formation. The argument being put forth here is that in order to gain original insight about serostatus uncertainty and HIV prevention, it is necessary to collect information from *outside* of these developed epistemic communities on HIV, rather than collecting information exclusively from members of these epistemic communities. Following the language of IE, if we wish to enlarge our view of the social, we need to look outside of those established networks that we usually draw from.

For indeed, when it comes to HIV research in Canada, and in specific, qualitative research that requires in person interaction, a significant portion of work on HIV focuses on men who are either highly connected to the HIV service industry, frequently attend gay male establishments or hyper-sexualized venues like bathhouses, or are considered to be at high risk. These are men who are closely affiliated with the epistemic communities that produce and communicate HIV prevention science. These represent social actors who tend to be more "in the know," or following Race, who are very scientifically active. Their extremely high level of knowledge and investment in the HIV prevention field undoubtedly plays a role in how they experience HIV risk and how they relay information about HIV risk through study participation. Nearly all of the Canadian studies on gay men referred to in this dissertation so far recruit and develop research projects with the help of ASOs. In fact, under the Community-based Research (CBR) paradigm, one of the general conditions to successfully acquire funding is for researchers to align themselves directly with community organisations—that is, with an established epistemic community. This means that the development of research questions and the recruitment of participants often happens in and through such organisations (Namaste el al., 2012). Thus in Canada we tend to speak more to people who are more closely linked up to the HIV prevention field.

As an example, the Resonance Project mentioned earlier is a national CBR-based research initiative run through CATIE. It is currently examining gay men of all age groups and serostatuses living in Montréal, Toronto and Vancouver, to chart their perceptions of new HIV prevention technologies such as PrEP and undetectable viral load (Adam, Jackson, Patten, LeBlanc, & Girard, 2015). The project recruited four different types of gay men to participate in their focus groups: (1) gay men connected to ASOs and who have attended an HIV/AIDS workshop, training program or conference; (2) those in serovariant relationships; (3) HIV/AIDS service providers; and (4) high risk men, characterized as men who have had more than one sexual partner in the last three months. The project is offering us nuanced and important insight into how gay men are managing and debating new prevention information. Similar to this dissertation, it pays close attention to the ethical complexities of risk management in everyday life. However, while the perspectives from the participant groups are undoubtedly important to capture, they represent individuals, particularly in the first three categories, who are very linked up to HIV services and who are far more likely to be "in the know" when it comes to new trends in the field (I will investigate the implications of the last group a little further below). While the sexual health literacy levels of the participants range in this study, as do their opinions and experiences related to HIV risk, due to their proximity to the HIV service industry, they are far more likely to know about emerging prevention information than those further removed. Yet, ultimately research such as this, because of its institutional affiliation, tends to become the basis by which we come to understand *all* gay men, even those who are not as closely attached to the networks aligned with the HIV prevention field.

Moreover, in a series of provocative works Botnick (2000a, 2000b, 2000c) argues that ASOs are predominantly made up of HIV-positive gay men and thus ASOs have routinely "culturally, economically and socially dismissed the socio/psychological needs of seronegative gay men (survivor guilt, safer sex education, etc.) in favour of providing social and resource-based services to seropositive gay men" (2000a, p.39). Botnick goes on further to argue that "within even the most well-meaning ASOs, internal politics and policies regarding the prioritization of community needs have exacerbated the gulf between HIV-positive and HIV-negative gay men, and this in turn has contributed to the rift in the gay community" (2000b, p.94). In short, ASOs have played a role in generating and nourishing viral apartheid, even if unwittingly.

I remain somewhat skeptical of this argumentation, and in particular, whether this is indeed an accurate portrayal of the HIV service industry during the transition to the biomedical era of HIV prevention in Canada. To be sure, Botnick is speaking about a time before the mass roll out of ART and thus is referring to the period before the substantial blurring of HIV treatment and HIV prevention. However, his critiques do suggest that ASOs and their associated networks are sometimes *perceived* as not necessarily meeting the prevention needs of HIV-negative gay men and that ASOs do not necessarily speak for all gay men. Consequently, research that works only in and through these established service organizations may not be able to capture the diverse needs and experiences of HIV-negative gay men who are negotiating serostatus uncertainty in their everyday lives. Hence to operationalize a research project that works outside of the established epistemic communities that have become further solidified through the institutionalization of CBR in Canada, can indeed offer us an opportunity to produce new knowledge. It allows us to illuminate different aspects of the epidemic, to focus on social actors and social practices that do not get as much attention in the scientific literature that is predominantly produced through direct involvement with ASOs. The primary epistemological goal here is not necessarily to criticize ASOs for failing to prioritize the prevention needs of HIV-negative gay men. Rather, my goal is to ensure that research is not *entirely* shaped by the priorities of ASOs, members of the institutionalised epistemic community or the perspectives of

HIV-positive gay men, such that the diverse prevention needs and perhaps challenging opinions of at-risk social actors are excluded from our discussions.

Importantly, I am not arguing that HIV research has exclusively examined individuals with direct involvements to ASOs. Rather, I am arguing that active involvement in ASOs or direct connections to the HIV prevention field tends to be characteristic of the perspectives we find in much HIV research in Canada. Further, we should not consider that there is some epistemological merit to ignoring the perspectives of those active in the field, as the experiences of the members of these networks are necessary to capture. The original contribution of this dissertation is based less on an active resistance to the voices of those who make up the HIV prevention field and more of a critical experiment that is looking outside of established epistemic communities to increase our understanding of the diversity of experiences associated with being at-risk for HIV during the transition to the biomedical era of HIV prevention. Thinking in and through the concept of the epistemic community will not only serve as an important recruitment device, but as I will discuss further in the next chapter, it also serves as an analytical tool. Making sense of social actors' experiences by reflecting on their relationships (i.e. more or less proximate) to the HIV prevention field and to diverse gay male social milieus will be essential to providing original insights on how gay men establish agency in relation to serostatus uncertainty.

Another main original methodological contribution is a shift away from focusing exclusively on higher risk sexual practices and high risk men. In addition to those closely associated with the HIV prevention field, a substantial amount of research, both mainstream research and critical work, produced on gay men has focused on high risk men (Adam, 2016). The concept may be defined differently depending on the project. High risk men can refer either to men who (frequently) have condomless anal sex with casual partners, partners of opposite serostatuses, or men who have lots of sex with lots of partners regardless of condom use. Within critical research, a substantial portion of research on risk has focused on analysing this issue from the perspective of barebackers, as well as men who routinely visit higher risk milieus such as bathhouses and circuit parties (Adam 2005, 2006). Of those potentially less connected to the HIV prevention field, the Resonance Project considers the opinion of men who have only slept with one other man in the last three months as less relevant to their investigation (even though these men may have histories of promiscuous behaviour or may be interested in having more sex in the future) (Adam et al., 2015). Why are we less interested in the narratives of men who are abstaining from sex or men who are currently only having sex with one partner? Why are we less interested in the narratives of men who always practise safer sex? Aren't they also being affected by serostatus uncertainty? Is there not something to learn from their prevention practices?

Whether researchers are problematizing, explaining or defending the sexual activities of gay men, there is an interest in putting forth those stories that demonstrate sexual risk-taking and the highest amount of sexual activity. Lots of sex and lots of risk make for more interesting social science. Depicting stories of men practising safer sex, avoiding sex and managing risk successfully is less exciting in a field addicted to beating up the urgency, which is necessary, no doubt, in order to justify the funding for the next gay men's health project. And indeed, the entire realms of risk surveillance and risk factor research are guided by making gay men largely intelligible through their high-risk practice, fundamentally reducing them to what they do with their hazardous anuses. Gay men who are not practising unprotected anal sex are, if not completely erased, then often marginalised from view in research. In some sense, HIV research has succeeded in turning back the clock, returning us back to the sodomite of yesteryear (see too, Dowsett, 2009).

There are, of course, always counter examples. For example, Prestage et al.'s (2012) compelling research on relative risk that I examined in the last chapter has taken a critical interest in examining gay men with strong risk aversion, men who think "nothing is safe" (p.1357). These subjects, which represent both HIV-positive and HIV-negative gay men, do not fit into the category of high risk men. However, even then the general methodology of this risk factor project was guided by correlating beliefs and attitudes with a propensity to have unprotected anal sex. There is no doubt that an interest in understanding why gay men might abandon condoms has guided a substantial amount of work in HIV prevention science, even though the field considers those men who do use condoms to be at-risk as well.

This interest in those most likely to have unprotected anal sex is logical, of course, when we consider how HIV is transmitted. If we are interested in understanding sexual risk-taking, it makes sense to speak to those who take sexual risks. However, this focus arguably narrows our perspective on gay male sexuality and thus our understanding of the broader socio-sexual context by which risk is negotiated and how it is experienced. We are making sense of gay men's lives through a sexual behaviour (i.e. UAI) rather than thinking more broadly about sexual practice. Further, if researchers tend to pay more attention to those who regularly engage in higher risk sexual practices and attend higher risk milieus like bathhouses, then the stories we are collecting about gay men are narratives that are based on the accounts of men with a certain comfort and acceptance with sexual risk-taking (Dowsett, 2009). Excluded, then, are stories of men who never engage in "high risk" practice but who struggle in some capacity with HIV prevention, men who may infrequently engage in high risk practice but do not see themselves as high risk for HIV or barebackers, men who are so fearful of HIV that they abstain from sex periodically, men who would never attend a bathhouse (out of fear or general disinterest) and men who only engage in lower risk sex but who must still manage serostatus uncertainty.

To be clear, an interest in high-risk men in HIV prevention science has not been misguided. Any research project that wishes to understand how gay men make sense of HIV risk management that does not consider men who engage in higher risk sexual and drug-taking practices, or who frequent higher risk milieus like bathhouses, is missing perspectives that are too important in this epidemic to ignore. However, following Dowsett (2009), I am arguing here that we must recognize that HIV prevention research plays a role in constructing sexual scripts—narratives on gay male sexuality—that ultimately come to shape our understandings of gay male subjectivity. However, if the sexual scripts we are producing tend only to be generated by the experiences of select groups of gay men—that is, those who bareback or visit higher risk milieus—then we are potentially alienating other gay men in our messaging who may not see themselves within the highly-sexualised frames posed by HIV prevention education. No doubt, we are only capturing some of the social and ethical complexities that this epidemic has produced. Thus part of producing original knowledge on HIV prevention can include factoring in the perspectives of gay men with a more diverse range of sexual experience.

Importantly, it must be stressed, that arguing that the interview participants of this study are less involved in the established HIV epistemic community—that they are not themselves the key producers and principal disseminators of HIV prevention knowledge, or are not the men whose points of view typically make it into qualitative HIV prevention research—is *not* the same as arguing that the participants are never affected by the HIV epistemic community and the governing policies produced by and through consultation with the HIV prevention field. Not being a core member of the HIV epistemic community is not the same as arguing that one never interacts with aspects of this community. Though less tapped in to the HIV epistemic network, the men interviewed still invariably run into knowledge produced by the HIV prevention field either online or through traditional media, or when encountering education material at gay based venues. Whenever these men seek sexual health services, whether from a family physician, at a hospital or from a specialised sexual health clinic, the services they receive and their interactions with medical professionals will be structured by the knowledge and policies produced by the HIV prevention field. And, while I am not exclusively speaking to high risk men who routinely have sex in hyper-sexualised spaces, this does not mean that *some* of the men interviewed have never entered these spaces, have never had sex with men who do engage periodically in these spaces, or have never had relationships (sexual or otherwise) with HIV-positive men.

In other words, the methodological goal of focusing on men operating outside of traditional epistemic communities of HIV research in Canada is to enlarge our view of the social, to acquire different perspectives that will allow us to investigate the limits and effects of HIV prevention science and policy. However, just because these men are less routinely tapped into these networks, does not mean that they do not periodically encounter the knowledge and governing practices that the epistemic community produces, or that they are entirely unaffected by changing developments in HIV prevention discourse and biomedical technologies (as the interview data will later demonstrate).

Conclusion: Critical Thoughts on Uncertainty and Sexual Practice

In this chapter, I have reviewed some key works from critical social scientists and humanities scholars and employed the uncertainty triad to make sense of the HIV prevention field. In this dissertation, I have so far argued that knowledge production practices in the HIV prevention field continue to produce epistemic uncertainties, creating challenges for the implementation of effective governing practices. I have demonstrated how various HIV experts either aggrandise or minimise the effects of epistemic and social and political uncertainties in order to achieve their biopolitical agendas. And I have argued that these epistemic and social and political uncertainties create unique ethico-political challenges—that is, experiential uncertainties—for social actors who must manage risk in a pragmatic fashion. Moving beyond a recourse to the health belief model, critical scholars on HIV prevention have paid close attention to how gay men navigate risk and address these ethico-political tensions. By focusing on sexual practice rather than behaviour, they have addressed the diverse social conditions that may produce or inhibit sexual risk-taking which may possibly lead to the transmission of HIV. My empirical project in the forthcoming pages directly extends upon the legacy of this critical work.

As a work of critical social science, the next step in this dissertation will be to draw on the lived experiences of social actors less present in the established literature to question the limits of ruling forms of knowledge within the field of HIV prevention science. Thus the remainder of this dissertation will analyse the narratives of young HIV-negative gay. I will aim to understand how these men regulate themselves as at-risk subjects, how they manage the uncertainties associated with HIV prevention and how their experiences compare to the knowledge produced and communicated by the field of HIV. Thinking beyond the established epistemic community that makes up HIV prevention science in Canada, the following project will offer original contributions to critical social science on HIV by focusing on younger, HIV-negative gay men who are not active members of the HIV service industry and who are not all considered to be at high risk. This project does not seek to explain or justify sexual risk-taking. Rather, I am interested in understanding how serostatus uncertainty is affecting a generation of men who are coming of sexual age during the transition to the biomedical era of prevention.

In short, the HIV prevention field has failed to reach a consensus on longstanding and emerging prevention issues, creating a proliferation of epistemic and social and political uncertainties that gay men must ultimately navigate. The field has turned gay men into at-risk subjects, into social actors who must recognize the uncertainty of their serostatuses and the potential threat that their sexuality brings to their own bodies and to the bodies of their sexual partners. In the following pages, I will take the time to critically reflect on what this process looks like on the ground, so that I can examine the power of uncertainty in regulating social actors within our contemporary risk society and question the limitations of the HIV prevention field. However, in order to do this well, I must first design a research project whose methods will provide us with original insight into the experiences of young gay men. Outlining this process is the task of the next chapter.

The whole of science is nothing more than a refinement of everyday thinking.

-Albert Einstein

Chapter Five

Capturing Uncertainty

Qualitative Methods, Sexual Practice and Serostatus Uncertainty

In this dissertation, I have been arguing that the HIV prevention field in Canada has failed to achieve a stabilising point in its third decade, with there being significant disagreements among experts over the efficacy of long-standing and newly emerging risk management strategies. The result has been a proliferation of epistemic and social and political uncertainties that raise unique ethico-political or experiential uncertainties that at-risk social actors must navigate. Consequently, I have been arguing that HIV-negative gay men have been governed and self-regulated by serostatus uncertainty during the transition to the biomedical era of HIV prevention. Going forward, it will be my task to describe how these men implement agency, adjust their sexual practices and secure their well-being in the face of such uncertainties.

In the previous chapters, I reviewed scientific literature and community documents on gay men and HIV prevention to determine what types of knowledge are being produced about gay male HIV prevention during the transition to the biomedical era of HIV prevention. I paid close attention to how various institutions and HIV experts negotiate the epistemic uncertainties related to emerging biomedical research. And I examined how such uncertainty has been moralised and politicised at different social sites, producing additional social and political uncertainties. In this chapter, I will chart the methods behind an original empirical project that will extend the tradition of critical social science on HIV that closely investigates the changing nature of gay male sexual practice over the course of this epidemic. The principal goal of this project is to better understand how young HIV-negative gay men are being affected by serostatus uncertainty in their everyday lives and how they manage the uncertainties associated with HIV risk management during the transition to the biomedical era of HIV prevention. In addition to capturing the experiences of everyday social actors, analysis of sexual practice will allow me to question the limitations of ruling forms of knowledge and dominant governing practices within the field of HIV prevention.

Critical social scientists examining gay men's sexual health issues have drawn from a range of methodological traditions and have employed numerous qualitative method techniques in their studies (Aguinaldo, 2012). Despite this variety, a general pattern can be witnessed. Drawing on various interview strategies, these scholars tend to build their arguments by focusing closely on the everyday experiences of those navigating sexual risk in order to build nuanced understandings of sexual practice—that is, an understanding of sexual decision-making that is rooted in social, cultural, political, economic, psychological and historical context (Kippax & Race, 2003). They come to learn how risk is negotiated, how safer sex practices are developed on the ground, and how social actors confront the ethical considerations and potential moments of social conflict that may arise as a result of HIV risk management (Mykhalovskiy & Rosengarten, 2009a; Kippax, & Race, 2003). From these nuanced portrayals of socio-sexual life, these critical scholars begin to call into question the validity, generalizability and use-value of research claims stemming from mainstream public health research (Adam, 2011).

However, what is the best way to capture and interpret the lived experiences of those who are at-risk? How do we best explore and understand sexual practice? What methodological frameworks should be applied to ensure a commitment to rigorous, quality social science?

Critical studies on risk and uncertainty and critical social science on HIV (including institutional ethnography), the chief methodological frameworks organising this dissertation, do not offer explicit directives for collecting empirical evidence. They provide researchers the flexibility to select the social scientific methods best suited to answer a project's research questions, allowing researchers to draw on different theoretical traditions to interpret evidence. Thus for this project, I have selected interpretative phenomenological analysis (IPA) and the semi-structured interview as the methodological framework and primary empirical tool to guide the process of data collection and analysis. In this chapter, I will describe these methodological practices in detail, beginning with an explanation of IPA and why it is well suited for answering this project's research questions. From here, I will move on to examine the specific procedures behind the data collection and analysis process, beginning with a look at recruitment strategies, ethical considerations, interview style and logistics, and finally, data analysis practices.

Beyond just "doing interviews," much attention has gone into every step of the data collection and analysis stages to produce original contributions to critical social science on HIV. The intellectual capacity of many of the critical ideas put forth in the previous chapters extends beyond epistemological and theoretical matters. Indeed, these ideas can be actively incorporated into our research methods in order to achieve original insights that may allow us to question hegemonic power relations in research and governing practices. In other words, thinking critically about data collection and analysis is essential to doing critical work. Employing critical methods is a necessary part of executing a critical social science project on HIV.

Thus more than a detailed account of research activities, this chapter will demonstrate the intimate link between research methods, research findings and research significance. The unique way in which we approach our research questions plays a role in what types of evidence we collect, how we *reengage* with our original research questions and how we come to interpret the epistemological and political significance of our work. Our methodological choices are not secondary elements to our arguments and hypotheses. Methods and knowledge claims are deeply entwined. The ways in which we come to explore what is true about lived experience turns into knowledge claims about what is (or may be) true about lived experience. Thus this chapter will demonstrate that *how* we come to investigate risk experience and sexual practice comes to determine *what* we know about risk experience and sexual practice. I will begin this discussion by first reviewing IPA, the main methodological framework.

Interpretative Phenomenological Analysis: A Guiding Framework

Interpretative phenomenological analysis (IPA) is a methodological framework that closely examines the lived experiences of social actors, focusing on how individuals perceive events and objects and make sense of their personal and social worlds (Smith, 2004; Smith & Osborn, 2008). "In choosing IPA for a research project, we commit ourselves to exploring, describing, interpreting, and situating the means by which our participants make sense of their experiences," (Larkin, Watts, & Clifton, 2006, p. 110). In addition to offering descriptive accounts of events, IPA focuses on the complexity of meanings shared by research participants and tries to understand why a research participant might have a certain view about a particular event or situation (Larkin et al., 2006). The ultimate goal of implementing IPA is to produce a theoretical framework or explanatory system that can illuminate why social actors in *specific* contexts, occupying *specific* social worlds, perceive or respond to certain events or objects (like serostatus uncertainty) in *specific* ways.

IPA is characterised as having a descriptive dimension which includes detailed explanations of a social actor's lived experiences and an interpretative dimension where links are made between a social actor's lived experiences to larger social, cultural and theoretical contexts (Larkin et al., 2006). The descriptions offered by a research participant are considered less to be purely objective statements about particular events and more as entry points into a social actor's life world (Smith & Osborn, 2008). Thus IPA remains primarily an interpretative framework that provides researchers space for speculation. It recognises that researchers contribute their own worldview into the data analysis process as well, since not all meaning will be made "transparently available" by a research participant (Smith, 2004; Smith & Osborn, 2008). With this in mind, researchers must remain highly reflexive about how their own worldview may influence the generation and communication of research findings.

Though IPA's roots come from psychology, it has found favour throughout the social sciences due to its interest in understanding the social landscape where action and decision-making occur (Smith & Osborn, 2008). It is considered to be a relatively flexible methodological tool that is not overly prescriptive, thus allowing social scientists to make their adjustments to fit their study. IPA is particularly well suited for projects with broad, but clearly formulated research questions addressing complexity, novelty or process (Larkin et al., 2006; Smith & Osborn, 2008).

As a methodological paradigm, IPA is heavily indebted to sociology and to the tradition of symbolic interactionism (Smith & Osborn, 2008). Both of these methodological lenses have an interest in understanding how meaning is constructed through the social word and how social actors come to understand the self vis-à-vis interactions with the other. Thus IPA pays close attention to social relationships, to understanding how particular forms of social connection and attachment become more or less relevant for social actors under specific social conditions. For example, Flowers et al. (1997) have used IPA to understand how gay men think about sex and sexuality in the 1990s and have focused on how love and ideas about romantic relationships orient gay men toward different HIV prevention practices.

Since IPA is interested in thorough examinations of a research participant's social world, semi-structured interviews remain the chief tool for data collection, as they offer flexibility and allow research participants to delve deeply into discussions of their lived experience (Smith & Osborn, 2008). IPA also requires that the researchers remain committed to "painstaking analysis" (Smith & Osborn, 2008). More than just collecting key themes, data analysis involves paying close attention to each collected case (more on the mechanisms behind this process below).

Consequently, IPA studies tend to involve smaller, non-representative participant samples and are thus better apt at making theoretical claims rather than generalizable empirical arguments (Smith & Osborn, 2008).

IPA is considered to be idiographic, inductive and interrogative (Smith, 2004). It is idiographic because of its close attention to *each* case within the entire data set to create a working theory modelled directly from the data. Understanding each participant's social world, how they orient themselves to a particular set of problems, events or situations, is imperative. IPA is inductive, in that it allows for unanticipated topics to emerge through the processes of data collection and analysis. Hypotheses and theoretical frameworks within the established literature do not limit an investigation. One can use established literature to consider initial research questions and guide entry into the field. However, an inductive approach means that the research findings should not be forced into pre-established categories or theoretical systems (Braun & Clarke, 2006). Moreover, IPA is also interrogative, as the emerging research findings can be used to complicate or illuminate existing research and theoretical paradigms. Thus in terms of data analysis, it is necessary to first examine what the collected evidence is suggesting in order to create original theories and arguments. However, established literature and theories can then be brought in to enrich and help contextualise the research findings.

As I go step-by-step below through the process of data collection and analysis, we will see how other theoretical and methodological tools (e.g. cultural theory on risk, in/capacity theory, institutional ethnography, sexual script theory, etc.) have been employed to offer nuanced layers of analysis, and in particular, to add elements of epistemological and political critique. However, IPA was selected as a guiding methodology because of its clarity, flexibility and its ability to tackle social complexity. Its interest in examining a social actor's decision-making by understanding the complexity of his social world is also extremely well suited for an exploration of sexual practice.

IPA and the Research Question(s)

In the previous two chapters, I closely reviewed scientific literature and critical scholarship on gay men's sexual health and HIV prevention. I argued that the HIV prevention field has a tendency to over simplify sexual practice and experiences of being at-risk to matters of unprotected anal intercourse, and correspondingly, often problematizes the behaviour of gay men, including sexually active HIV-negative men. I also argued that the field has a tendency to cultivate uncertainty about HIV prevention practices, amplifying or minimising epistemic uncertainties and aggrandising additional social and political uncertainties. While much biomedical research has aimed to quantify and qualify the safety of different sexual acts and prevention strategies, doubts are continuously raised about the efficacy of different risk reduction practices. Treatment optimism research, as one example, raises the concern that emerging research about undetectability and HIV transmission may in fact lead to additional sexual risk-taking among gay men (Rapid Response, 2014). Such arguments tend to position HIV-negative gay men, implicitly or explicitly, as being apathetic or ambivalent to the idea of HIV infection. This type of research certainly positions gay men as being uncritically drawn to sexual risk-taking.

Further, I argued that the HIV prevention field, through a range of educational strategies and research claims, continues to turn all HIV-negative gay men—regardless of their sexual practices—into at-risk subjects, into men who are governed and who are expected to self-govern in relation to serostatus uncertainty. Even in sexual contexts where seroconversion is unlikely, gay men are encouraged to remember that it is a possibility. In the transition to the biomedical era of HIV prevention, sexually active gay men should never assume that they are HIV-negative. The moral imperative is to recognise and act on the dangers associated with serostatus uncertainty, since those unaware that they have been recently infected with HIV have become classified under a series of epidemiological theoretical systems as posing the highest risk to gay male communities.

I also argued that the HIV prevention field, including both mainstream and critical domains, has paid very close attention to discovering the motivating factors for sexual risk-taking and has concentrated its attention on higher risk milieus. Researchers have been fascinated with the decision-making processes around barebacking. This interest in unprotected anal sex is logical, especially from an epidemiological standpoint. However, I argued that this concentrated focus on a particular sexual act and on making generalizable claims about all gay men vis-à-vis research focussing on men engaging in higher risk barebacking practices, or research focussing primarily on the experiences of HIV-positive gay men and sexual risk-taking, narrows our view of gay male sexual practice, particularly among HIV-negative men.

Guided by the uncertainty triad developed in chapter one, this engagement with the literature has raised a series of interconnected questions about HIV-negative gay men and risk in everyday life that may be illuminated through qualitative inquiry. Do young HIV-negative gay men continually perceive themselves as being at-risk for HIV? What is it like to live one's sexual and romantic life with serostatus uncertainty as a constant consideration? How do young HIV-negative gay men manage serostatus uncertainty on a day-to-day basis? What is the relationship between the everyday experiences of those managing serostatus uncertainty and research being conducted on those who are at-risk? Are young HIV-negative gay men becoming more apathetic or ambivalent to HIV infection? How is new biomedical knowledge about HIV affecting sexual practices among young HIV-negative gay men? How are young HIV-negative gay men moralising and politicising HIV during the transition to the biomedical era of prevention?

These questions can be boiled down to three foundational inquiries. First, how are young HIV-negative gay men being affected by HIV risk and serostatus uncertainty in their everyday lives? Second, how are the uncertainties associated with HIV prevention affecting the sexual practices of HIV-negative gay men during the transition to the biomedical era of HIV prevention? And third, what can the experiences of young gay men managing HIV risk tell us about knowledge production and governing practices within the field of HIV prevention research and services? These are the primary questions guiding the data collection and analysis process for this project.

IPA is a suitable framework for answering these first two foundational research questions as it is designed to address issues of complexity and process and it is focused on making sense of everyday experience. IPA places an emphasis on understanding a social actor's personal and social world, making sense of his orientation to a set of events and issues. It aims to understand the complexity of the social context from which social actors make decisions and implement agency. What about the *social positionality* of social actor A causes him to react differently than social actor B to a similar event or issue? What about the *social positionality* of social actor A causes him to react differently to serostatus uncertainty than social actor B? This is a form of analysis that is quite different from many of the approaches taken in the mainstream scientific literature on gay men and HIV that I reviewed in the preceding chapters. Much of the established scientific research, and in particular, work in the domains of risk surveillance and risk factor research (see chapter three), often flattens out the social by focusing on at-risk men as individual decision-makers—the complexity of lived experience and social interaction is reduced in the interest of generating tidy hypotheses about why gay men take sexual risks (Adam, 2011). While not trying to eliminate the agency of social actors—that is, their ability to be individual decision makers—IPA acknowledges that individuals do not exist in a social vacuum. IPA allows us to reconsider the role of the social at a particular point in the epidemic—that is, during the transition to the biomedical era of HIV prevention. In this way, IPA helps us to better understand sexual practice instead of just sexual behaviour, offering us the critical capacities to reflect on the limitations of the dominant knowledge and governing practices that make up the HIV prevention field.

The interrogative phase of IPA permits a researcher to compare original project findings with the established literature, which will help to answer the last foundational question. As noted in the introduction to this dissertation, using the everyday experiences of those affected by HIV to question ruling forms of knowledge is a hallmark of critical social science on HIV. IPA is not, in and of itself, a critical tool—it is simply a methodological frame for making sense of lived experience. However, how a researcher interprets and utilises the everyday experiences gathered for a project can have critical potential, especially if it is used to address issues of knowledge and power (Boltanksi, 2011; Smith, 2005). The flexibility of IPA and its interrogative phase allows for this political analysis to occur. This analysis will require utilising some of the critical analytic tools that were presented earlier in this dissertation.

For example, from a risk society perspective, we can take the narratives presented by research participants to investigate how their implementation of self-identity and the shifting nature of social institutions and knowledge claims introduces them to new risks. From a cultural perspective, we can examine how interview participants are moralising their risk-related behaviour and the behaviour of other gay men. And we can question the relationship between the moral stance of a social actor and his social positionality within the gay community. Taking a queer perspective, we can examine how these moral frames reproduce or challenge homonormativity and viral apartheid and how interview participants navigate the tricky terrain of serosorting and non-disclosure. From a governmentality and biopolitical perspective, we can see how social actors conduct themselves as at-risk subjects (or following Adam, as neoliberal sexual actors) by adopting various forms of healthism and how they come to make biological citizenships claims as at-risk men. From the social science of emotions, we can use in/capacity theory to examine how emotions play a role in shaping agency during moments of serostatus uncertainty and to question how emotion management strategies are operationalized to get at-risk men to achieve particular biopolitical ends. From the perspective of IE, we can draw on the narratives of interview participants to reflect on what social actors and social practices are often marginalised from knowledge production and governing practices in order to expand our view of the social. This will allow us to question the key ideas, theories and arguments that make up the HIV prevention field and to question the intricate relationship between epistemic, social and political and experiential uncertainties during the transition to the biomedical era of HIV prevention. However, following IPA, it is important to first listen and describe the narratives that interview participants present, before using these analytical tools to make additional sense of them.

In sum, I have argued that we need alternative approaches to social science to make sense of how young HIV-negative gay men are managing HIV risk and the experience of serostatus uncertainty. IPA offers a useful methodological framework for collecting and making sense of everyday experience and sexual practice, offering enough flexibility and room for interrogation that will allow us to simultaneously consider the broader epistemological and political implications of this project's findings.

Recruitment and Demographics

I introduced the profile for the participants of this study in chapter four, along with justifications for setting these parameters. Following IE, it was necessary to reflect on which social actors and social practices are commonly marginalised or erased from view. This is done in order to build an empirical project committed to expanding our view of the social so that we may question the limitations of knowledge production and governing practices in the field of HIV prevention. As a reminder, in the interest of collecting narratives less pervasive in the literature, this project recruited young (aged 18-35) HIV-negative or serostatus unknown men who are gay or queer identified and who have experienced serostatus uncertainty. To attract new voices, participants were recruited who have not previously participated in an in-depth, in person interview about HIV/AIDS. In order to avoid speaking just to HIV prevention experts or tapping exclusively into networks closely affiliated with the HIV/AIDS service industry—that is, established epistemic communities—I recruited those without active involvement in an AIDS Service organisation (ASO) prior to the interview. Participants could not currently be volunteers for an ASO or be HIV service providers, or have had a substantial history of involvement with an ASO.

A website, thehivriskproject.com,[22] served as the main recruitment tool. The homepage for the website encouraged individuals to participate if they answered yes to any of the following questions.

Are you a gay man who:

- Has ever thought yourself to be at-risk for HIV?
- Has ever been unsure about your HIV status?
- Has ever struggled to figure out any aspect about HIV prevention or your sexual health?
- Has ever had difficulties controlling your fears and anxieties about HIV/AIDS?
- Has concern about the state of HIV prevention in gay male communities in Canada?

The website left the notion of being "at-risk" open to interpretation so that it was not linked exclusively to higher risk sexual behaviours. Any lived experiences of serostatus uncertainty or even a general concern about serostatus uncertainty rendered one eligible to participate. I excluded no one based on his history of sexual behaviour. More explanation about the project was provided under the "Project Details" tab, which also included an encouragement for those who would never consider giving an interview of this nature to participate (a few participants explicitly mentioned that this was a factor in their decision to join the study). Under the "Participant Profile" page interested men could see if they matched the eligibility requirements. Under the "Steps" tab directions were provided as to the order of the interview process. Information about the project coordinator was provided under the "Researcher Profile" tab. Contact information was available for those interested in participating, or they could send a private message to the project coordinator by using one of the available comment tabs. Interested candidates were messaged back and asked to ensure that they met the inclusion criteria outlined in the "Participant Profile" tab. Some participants also used this opportunity to ask a few more

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[22] The website is now archived as: www.thehivriskproject.wordpress.com

questions about the project. An interview was set up with those eligible and willing to participate.

The website was promoted on social media platforms including Facebook, Instagram and Twitter. Facebook was the most successful outlet, followed by Twitter and then Instagram. Various hashtags were used to circulate the website such as #HIV, #instagay, #gay, #toronto, #montreal #sexualhealth. Hashtags allow social media users to search for postings under a given topic, thus expanding the number of views for a particular posting. The website was also emailed and messaged directly to individuals either as requests to participate, or for further circulation. This project also relied on snowballing (Rapley, 2007), with those participating sending the interview request on to others.

In order to build this contact list and social media following, it was necessary to establish connections long before the official recruitment phase. In this sense, recruitment was actually a far more subtle exercise that took many years of social networking. Potential applicants were found in a range of cultural spaces including house parties, bars, clubs, art exhibits, university events and through peers. To ensure that a diversity of experiences were captured it was necessary to become acquainted with men from various facets of the gay male milieu. For example, attention was paid to building connections with those who could be considered more queer or radical, those considered more "homonormative" and those who have more and those who have less involvement in the gay villages of Montréal and Toronto. This process was far more organic than systematic. IPA does not require a fully representative sample, since it cannot be used to make generalizable empirical claims (Smith & Osborn, 2008). However, the goal was to ensure that participants in the study were coming from a range of lived experience and that there was diversity in terms of sexual and intimate practices, demographic backgrounds and relationships to the gay male community. Once again, it is imperative to think critically when establishing one's research methods. Setting up solid foundations for recruitment required careful and critical consideration of the diversity of young gay male sexual networks in Montréal and Toronto in order to build a more complex portrait of sexual practice.

Overall, 34 interviews were conducted in Montréal (n=17) and Toronto (n=17) in the fall of 2013, over the course of 40 days. However, one interview from Montréal was eliminated from the data set because the participant did not meet the criteria, having been very involved with an ASO. Four potential applicants who had requested to participate also had to be denied interviews because they were HIV service providers or long-term volunteers for an ASO. Some applicants who were interviewed have had very minor experiences with ASOs. For example, one participant had walked for an ASO during Pride but had no additional involvement with the organisation or interest in HIV work. Some participants, through their activist or artistic commitments have also had some minor involvements with AIDS related events, but none would qualify themselves as an "HIV/AIDS activist." The central aim was not to eliminate individuals with some minor connections to ASOs or to different forms of gay activism or community building, but to ensure that the data set was not comprised of those who could be considered HIV experts—that is, those who are routinely and intimately involved with the epistemic communities that guides knowledge production in the HIV prevention field. I was successful at recruiting these "non-experts," with many participants having zero knowledge about existing HIV/AIDS services and organisations and most having relevantly minor knowledge but zero involvement.

In terms of age demographics there was comparable sampling across the age spectrum: 20-24 (n=12), 25-29 (n=13) and 30-35 (n=8). Though a significant portion of the sample could be classified as Caucasian, there was a great representation in terms of ethnic and cultural backgrounds including: Anglo-Saxon Canadian, Québécois, French, Italian, Australian, Portuguese, Greek and Jewish. The sample also included men with Canadian Indigenous, Indian, Guyanese and Trinidadian, Dominican, Filipino and Mexican backgrounds. Five of the participants were not Canadian citizens and were applying for permanent residency.

The participants also included men from a range of socio-economic backgrounds. For sensitivity purposes, during the interviews no direct questions were asked about income. However, family background and economic concerns came up routinely. A majority of the participants were university students, recent graduates or were just starting out in the job market.

Rather than providing complete demographic profiles or small demographic blurbs under each quotation, in the presentation of the data below I incorporate information about a participant's demographic background as it becomes relevant to the developing arguments. There are two main reasons for this choice. The first reason is that I will argue that a range of intersecting factors come to determine how a social actor may respond to serostatus uncertainty at a given moment in time. While some of these aspects may be attributed to common demographic or identity indicators such as age or ethno-racialized background, a myriad of other elements (such as student status, immigration status, relationship status, addictions, etc.) can play an equal if not an even more substantial role in affecting how gay men respond to serostatus uncertainty. Offering demographic blurbs (e.g. “HIV-negative, 24, Caucasian”) arguably undermines the very intent of this project. It does so by reducing the complexity of intersectionality to identity categories, instead of examining the many complex social factors and messy aspects of everyday life that shape how social actors actually confront HIV governing practices (i.e. services, governmental policies) (see too, Duchesne, 2016).

The second reason for this choice is to actively question how we, as HIV researchers, are commonly thought to think about and respond to issues of intersectionality and diversity in our samples and analysis. Whether explicitly stated or not, part of listing a full demographic profile or including frequent demographic blurbs, serves to signify that we have effectively considered diversity in our research practice. While thinking about diversity is, *without a doubt*, important, a desire to demonstrate that we have actually thought about diversity should not precede an effective analysis of how diversity actually functions in the world. For example, several of the men who interviewed for this study come from non-white, ethno-racialized backgrounds. However, a couple of these participants explicitly rejected the idea of being thought of principally as “men of colour” (a discussion they instigated after being asked a routine open-ended question about their cultural backgrounds). They felt that their experiences have been similar to other immigrant and second-generation gay men in Canada and that they could not be reduced to a single label. Interestingly, to them, moving from Toronto to Montréal (with their different sexual cultural contexts) was far more significant to how they were thinking about sex and HIV risk than their subject positions as “men of colour.” The opinions of these interviewees obviously cannot speak for all “men of colour.” But they do challenge us to think about how we categorise social actors and their experiences, and to question the generalizable claims we make about race and risk in the HIV prevention field.

To be clear, this does not mean that considerations of ethno-racial background are not important to consider when performing critical analysis, or that we should minimise the impact of minority stress on those facing multiple modes of oppression simultaneously. There is significant quality evidence demonstrating that life for ethno-racialized gay men may be drastically harder at some points than for their Caucasian peers (Brennan et al., 2013; Stall, Friedman, & Catania, 2007). However, we should be wary of wishing to continue to validate this opinion over actually listening to what our research participants are telling us. Reflecting critically on race means critically reflecting on what these racialized men are saying about race. Ignoring their opinions in the interest of checking off the diversity box is neither good social science, nor is it critically progressive. Moreover, we should be cautious of how conventional framings of intersectionality and diversity tend to minimise the vast cultural differences among white men that are also fundamental to consider when reflecting on reactions to sexuality and HIV risk (Namaste et al., 2012). As critical scholars we should always be wary of how generalisations and categories can mask differences of opinions and experiences that are essential to understand in order to create a more nuanced picture of HIV risk management on the ground.

Ethics

Prior to recruitment, a summary protocol form was submitted to the Office of Research at Concordia University. The protocol was approved in August 2013.[23] There were several main ethical issues to consider.

The first is that the interviews had to remain confidential. All of the names used throughout this dissertation are pseudonyms, normally selected by the interviewees. Second, due to the sensitive nature of the topic, research participants had to be informed about the potential for being emotionally triggered. Relatedly, it had to be made clear that this was a research interview and not a form of counselling. Information about relevant sexual health and mental health counselling services was made available for those who requested or appeared to need it. Lastly, participants were informed that they could discontinue the interview at any moment and that they had two months after their interview date to withdraw their interview from the data set. No interviewee made this request.

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[23] Office of Research, Concordia University, Ethics Certification Number: 30001868.

Interview Style

Semi-structured interviews (Rapley, 2007) are the preferred mode of data collection for IPA (Smith & Osborn, 2008) and one of the most common methodological techniques employed in critical social science research on gay men and HIV (Aguinaldo, 2012). This format of interviewing allows for researchers and participants to engage freely (within reason) in dialogue and to explore topics not previously considered by the researcher. Semi-structured interviews tend to be popular when covering sensitive or overly personal topics, since the flexibility and level of engagement allows substantial time for rapport building and for interviewees to become comfortable with sharing personal details about their lives (Rapley, 2007). Rapport, engagement and flexibility are particularly important if we are interested in getting intimate details about a person's sex life.

With semi-structured interviews the interviewer should still be mindful of minimising their contribution to the discussion, allowing the interviewee to guide the discussion—in this sense, the less an interviewer says the better (Rapley, 2007; Smith & Osborn, 2008). However, semi-structured interview techniques do not deny the *active* role of the interviewer in generating meaning along with the interviewee and IPA does not presume to obfuscate the role of the interviewer and analyst in the data collection process (Holstein & Gubrium, 1995; Larkin et al., 2006). In order to avoid generating bias and faulty data, interviewers should not impose themselves or their views. However, they should not consider themselves to be passive vessels of science either. For example, for this project, many interviewees were interested to learn more about my motivations for engaging in this research, my own experiences navigating HIV risk and my opinions on particular issues. It was necessary that I address *some* of these issues in the interest of transparency and engagement (particularly the first query), but resist over-sharing as not to influence the responses (particularly by answering the last query). Usually this issue was addressed by answering a participant's specific questions after the formal interview had been completed.

The degree of "objectivity" and "analytical comparability" that is lost as a result of having moderately different flows of questions and conversational tangents from interview to interview is made up by the richness of the data and a more intimate view into the personal and social world of each participant. The flexibility of semi-structured interviews also allows for the implementation of verification techniques (Morse, Barrett, Mayan, Olson, & Jude Spiers, 2002). Original themes or ideas that I had not previously considered started to emerge organically in the earlier round of interviews. I then posed these ideas as questions to the remaining interviewees to gather alterative views and measure the generalizability of a particular theme across the data set. For example, in an early interview for this project a participant discussed social pressures to be a hypersexual gay man. I then asked the remaining interviewees if they had considered this idea or experienced something similar. The interviewees and I were engaged in mutual interpretation of this potential theme, which ended up becoming one of the more fascinating and original findings of this dissertation.

To create a general structure, an interview guide—a set of established questions—was used in all of the interviews. The interview guide had five sections (refer to Appendix A). Section one dealt with introductions, rapport building, demographic information and some identity questions. For many participants, these opening discussions led organically into a discussion about their experiences managing HIV risk.

Section two asked some more abstract questions about how participants prioritized sexual health and HIV prevention in their lives. It allowed for them to discuss their own sexual preferences but also to "sociologically" reflect on the epidemic, thinking about how it affects young gay men. Though illuminating, many questions in this section were largely put in place to provide shy participants a chance to become comfortable with the interview process and to begin talking about sex, health and risk, at least in abstract terms. In qualitative research literature, this strategy is known as funnelling (Smith & Osborn, 2008); research participants express opinions about an issue more abstractly, before providing explanations of their own experiences. Nonetheless, there were some very key critical questions in this section that allowed participants to discuss their thoughts and opinions about HIV prevention matters in abstract terms or by beginning to directly refer to their lived experiences. This section allowed for a preliminary review of a participant's sexual health literacy levels and allowed an opportunity for him to express opinions that could then be reintroduced as interview probes when discussing his risk experiences later on. In other words, a participant's general opinions on key issues could then be further explored during his discussion of his risk experiences in order to flesh out contradictions and important connections. This section of the interview also dealt with a participant's relationship and thoughts to the gay community and his thoughts on sexuality more broadly. By the end of this section it was very clear how the participant was politicising and attaching meaning to sex and what his intimate preferences generally were (at least at the time of the interview).

Section three was the heart of the interview. During this period of the interview participants were asked—if they had not already started to get here on their own—to reflect on their sexual and dating history and to discuss moments where HIV and sexual health issues seemed pertinent. Discussions usually began around the topic of "coming out" as gay, or about sexual experiences prior to "coming out." Participants then moved along (relatively) chronologically, discussing their sexual history and explicit moments of serostatus uncertainty. For example, participants would discuss how HIV prevention was negotiated with different boyfriends and hookups, how they entered into different periods of sexual exploration and/or abstinence and their different experiences seeking HIV and STI services. These stories were contextualised within the broader narrative of the participant's life—moving away from home, fraught parental relations, going to school, struggling with homelessness, periods of substance use, beginning sex work, falling in and out of love, filing for permanent residency, etc.

Participants usually had at least one to three significant moments of serostatus uncertainty that they focused on; for example, deciding to take PEP after barebacking with a casual partner, or dealing with infidelity in a long-term relationship. For these men, it was obvious how they have been "at-risk." However, some participants did not have any overt experiences of serostatus uncertainty and thus reflected more generally on how they have had to consider HIV risk and prevention in their lives. Thus some of the interviewees focused on stories involving higher-risk sexual practices (i.e. barebacking with casual partners) and others focussed on experiences where risk was reduced through consistent condom use or relying on oral sex. Some participants discussed their decisions to avoid higher risk practices altogether, and in certain instances, some reflected on their decisions to abstain from sex for long periods of time because of their anxieties over seroconversion.

Drawing again on the work of emotion scholars, as well as HIV researchers like Odets, it was important to enter these interviews recognising that risk management is not reducible to the cognitive evaluation of health knowledge. It also entails a form of emotion management, with social actors managing their fears in the interest of implementing their agency in the face of serostatus uncertainty. Thus during the interview process, emphasis was placed on trying to understand a participant's emotional response to particular risk moments, which were often centred on feelings of anxiety—a sense of powerlessness or felt incapacity to address the challenges of serostatus uncertainty and a potential HIV diagnosis (more on this in the next chapter). Some participants had a tendency to describe events in a somewhat neutral fashion (i.e. "this happened, so I responded in this way") and needed probing to reflect on how they *felt* about the experience. Others, however, needed no probing and revealed the many ways in which they have been emotionally affected by serostatus uncertainty—the shame, guilt and anger that arose from periods of being at-risk. I will address participants' emotional responses to serostatus uncertainty very closely in the next chapter, concentrating specifically on the role of anxiety. But once again, thinking critically through the data collection process is necessary to receive critical results. In this case, being mindful of the emotional elements of the participants' risk narratives over just the cognitive aspects of risk calculation, offers further insight into how HIV-negative gay men are being affected by serostatus uncertainty.

Throughout the interview participants shared their sexual histories and reflected on the relationships between their different risk related experiences and their changing attitudes about sexuality and prevention. For example, if a participant altered his preference for serosorting, he would be encouraged to reflect on why this was the case at a particular moment in time. Participants also provided their opinions about their sexual behaviour and the behaviour of their sexual partners and reflected on some of the ethical considerations associated with HIV prevention such as their decisions to serosort.

In summary, in this section of the interview I invited participants to openly discuss their sexual practices, their experiences of being "at-risk" and to reflect on how they have been specifically affected by serostatus uncertainty as young HIV-negative identified gay men. This discussion was not reducible to the issue of unprotected anal intercourse, but often surrounded issues of the residual risk associated with safer and lower risk sexual practices. I will investigate this matter closely in the proceeding chapters. However, it is important to note here that this finding could only emerge in the context of an interview process that did not prioritise recruiting participants based solely on their higher risk sexual practices and centring conversation on barebacking. For this study, understanding risk avoidance was as imperative as understanding sexual risk-taking practices.

The fourth section of the interview focused on sexual health literacy levels and asked more specific questions about HIV prevention, such as a participant's awareness of undetectable viral load, gradients of risk (low risk, high risk, etc.), PEP and PrEP. These questions were only necessary to ask when these particular issues were not brought up organically. The idea here was to see how many of these concepts were already embedded within a social actor's own world view and narrative account of his sexual past, rather than introducing these concepts to the interviewee at the beginning of the interview. Questions then turned to addressing social and political issues such as the criminalisation of HIV non-disclosure. Again, in most cases these topics were already explored within the context of the participant's narrative.

In the final section of the interview, participants reflected on how prevention could be improved in Canada. They were also encouraged to reflect on the interview process itself and to offer feedback for improvement on the interview process.

In short, participants were extremely generous with the stories they offered and were often quite vulnerable. The end result of this process was a diverse collection of rich stories and unique opinions about sexuality, intimate relationships, HIV prevention and gay male community that did not exclusively centre on the topic of barebacking.

Interview Logistics

I conducted the interviews in the fall of 2013 in Toronto and Montréal. They occurred in different settings including my office, private library office rooms, cafés, hotel lobbies and the homes of some interviewees. The majority of interviews happened in more private settings like office spaces and rented library offices. In those instances where the interviews took place in a more public setting, efforts were made to ensure some privacy and that the interviewee felt comfortable.

The interviews ranged in length from forty-five minutes to two hours, with most coming in at over an hour. All of the interviews were recorded using a MP3 recorder. I also took notes throughout the interview, which included reflections on the interviewee's general demeanour/body language, level of comfort and engagement levels.

Before the formal interview began, the interviewee and I engaged in general rapport building and introductions. The interviewee was given time to read and sign the consent form.

This form was emailed to the interviewee before the interview date to provide him with a chance to read it more closely. Interviewees were reminded that the process was confidential and they were encouraged to provide pseudonyms. Pseudonyms were chosen for them if they preferred.

To make participants more comfortable with the process of talking about sex, at the beginning of the interview I informed the participants that they could divulge as much or as little detail about the specifics of their sexual experiences as they would like and that there was a wide range of participants being interviewed, including those with more and those with less sexual experience. All participants had to discuss their sex lives, but some were more comfortable providing vivid detail. Participants were also encouraged to express their opinions openly and freely and were informed that they were not being evaluated for providing politically correct responses. It was made clear that the goal of the interview was to get *their* experiences managing HIV risk and *their* opinions about prevention.

At the end of the interview, participants were given a ten-dollar gift card as a small token of appreciation. Follow-up was done the following day over email. Participants were thanked again for their participation and were asked if they had additional questions about the interview process or about HIV prevention more generally. I provided those with additional questions with information about available HIV related services. Interviewees were also informed that they could keep up with the project's progress by looking at updates on the project website, thehivriskproject.com.

Data Analysis

I began data analysis during the data collection phase (Morse et al., 2002; Smith & Osborn, 2008). The adjustment and elimination of certain questions and the development of new questions and probes was already indicative of me recognising what was resonating in the lives of the research participants. While conducting an interview I would already begin to interpret a participant's narrative. These ideas were then posed to the interviewee as questions (e.g. Do you think that there is a relationship between experience A and your response to experience B?), who would then support or refute developing hypotheses. Beyond providing details of events, the interviewee was engaged in analysing his own narrative, in tracing connections across experiences and determining the significance of various moments in his life. As discussed above, verification strategies (Morse et al., 2002) were also used for a similar effect. Interviewees were asked to reflect on issues and themes brought up by other participants in order to capture further nuance and verify generalizability across the data set.

After all of the interviews were completed, the recordings were sent to a transcription service and were transcribed in full. The interviews were then printed out in hard copy to begin thematic analysis (Braun & Clarke, 2006), which is the main analytic strategy under IPA. All of the interviews were read in order and a preliminary coding system was devised. Codes captured basic concepts/idea, sub-themes, or higher-level themes. Preliminary coding generally captured basic concepts (e.g. "undetectable viral load" *or* "monogamy"") and more complex sub-thematic ideas which captured relationships (e.g. "undetectable viral load *and* monogamy"). Some higher-level themes may have emerged at this point, but generally came later when connecting different sub-themes. For example, "biomedical prevention and types of sexual relationships", a higher-level theme, incorporates information about PEP, PrEP, serosorting, monogamy, trust, promiscuity, infidelity, etc. At the coding stage, it is necessary to capture basic concepts and sub-themes since these may be used to illuminate different higher-level themes. After the first round of reading, the coding scheme was edited to remove redundancies.

The second round of reading involved two separate tasks. The first involved applying the established coding scheme to the interviews. Using Microsoft Word documents, relevant excerpts from the interviews were filed under a specific coding file. The same interview excerpt could be filed under multiple codes. An excerpt could be placed under a specific coding file because of its content (e.g. explicitly mentions monogamy) or because it is interpreted as relating to an emerging theme (e.g. implies a preference for monogamy). The coding system continued to be refined throughout the process as I engaged in data cleaning by eliminating redundancies.

The second task involved developing written case studies. I read each interview in full very closely and turned each into a small case study before I proceeded to code the next interview. The case studies offered a brief description of a participant's experiences managing HIV risk and his sexual history more broadly. The cases also reflected on a participant's social location, his demographic information and his orientation toward gay male communities. While conversational analysis techniques were not employed specifically, the participant's tone, comfort level throughout the interview and conversational style, which were captured in the interview notes, played a role in interpreting an interview and in helping to situate a particular interviewee in relation to others in the data set. For instance, some participants appeared extremely anxious when talking about at-risk moments, while others were far more confident and calm. Some even seemed quite agitated, thus demonstrating their struggle with particular issues.

The development of written case studies is not necessary under IPA. However, under IPA it is necessary to pay close attention to *each* case in the data set and to get a sense of the personal and social world of *each* participant. In cutting up interviews into "useful pieces," an exclusive use of thematic analysis can lose some of the nuances offered in each interview—the specific contexts of participants' lives become secondary to discovering the most prevalent or remarkable themes. However, understanding those specific contexts thoroughly is absolutely imperative for IPA. With thematic analysis, narratives from interviewees who had "less interesting" things to say may get lost in the process. However, each interview, regardless of its "quotability," tells us something about sexual practice and the management of HIV and thus should be considered when generating arguments. Moreover, case studies that may contradict or complicate the arguments being developed should not be dismissed, but should be used as opportunities to strengthen and add nuance to developing hypotheses.

Written case studies also make it easier for researchers to contextualise themes within the lived experience of the research participants. For example, I could categorise a participant's insightful quotation about undetectable viral load under a particular coding file. However, at the analytic phase, it was necessary to contextualise this statement within a social actor's lived experiences so that I could interpret the statement's significance. Why would this social actor have such an opinion about undetectable viral load? How is this social actor's personal and social world orienting him to undetectable viral load in a specific manner? Developing case studies makes this analysis easier, especially if some time has passed between the data collection phase and writing up the results of the study.

Moreover, from the onset I was committed to capturing the *complex* experiences of those navigating HIV risk, in creating nuanced portrayals of sexual practice and serostatus uncertainty. It was thus necessary for me to analyse the data in a way that did not eliminate this complexity by narrowing an individual's lived experience to behaviours and attitudes. Unlike the risk factor research I reviewed closely in chapter three, the goal here was not to create simplified correlations between certain psychosocial factors and sexual risk-taking behaviours, but to better understand how the complex interplay of intersecting social and political forces affects lived experience. To do this type of analysis, it was essential for me to trace the connections between different events and experiences and to make sense of contradictions and ambiguities in a participant's narrative.

The case studies also reflected heavily on participants' changing relationships to their sexuality and HIV prevention *over time*. This is key. The participants shared stories from as far back as their early childhoods to as recent as a few days prior to the interview. It was thus possible to see changes in sexual practices and to interpret why this might be the case for a particular social actor. Consequently, determining why and how social actors change their orientation to sexual practices became the key premise of this study going forward (more on this below). Analytically, it was necessary to understand that a participant's description of past events would be guided by experiences that followed. Participants did not provide purely objective accounts of their lives, but were offering interpretations of their life events based on their current social positioning or context (Larkin et al., 2006). No doubt, many of the participants' sexual practices and opinions about HIV prevention have changed, and possibly considerably, since data collection. The data collected is thus not a definitive look at these men's sexual practices, but represents a snapshot of their ever-changing orientation to HIV risk and sexuality. Thus this project focuses less on exposing behavioural patterns—that is, what exactly gay men do when it comes to sex—and focuses instead on how these gay men perceive their *sexual practices* at a particular moment in time. I want to understand how social actors are *contextualising* their sexual activities, how they are attaching meaning and making sense of their sexual experiences and risk management decisions, rather than just describing what their sexual activities are (i.e. anal sex with or without a condom).

Once all of the interviews were turned into case studies and were coded, each coding file was analysed. Some files were brought together to remove redundancies and make connections. To make data mining easier, various quotations and excerpts were highlighted: red (very significant) or blue (significant) or un-highlighted (possibly relevant).

Sub-themes were then connected to generate higher-level themes and higher-level themes were then arranged to generate a working model that would best represent the experiences shared by the participants. This included mapping out and reworking the connections between different higher-level themes. Occasionally, this process involved reconsidering sub-themes and the placement of basic concepts and ideas. Most importantly, the theoretical system being developed had to answer the primary research questions: First, how are young HIV-negative gay men being affected by HIV risk and serostatus uncertainty in their everyday lives? Second, how are the uncertainties associated with HIV prevention affecting the sexual practices of HIV-negative gay men during the transition to the biomedical era of HIV prevention?

However, as data was being collected and preliminarily analysed, two things became apparent. First, some participants were far more risk averse (i.e. uncomfortable with serostatus uncertainty) than others, with some finding an even small degree of serostatus uncertainty completely unbearable. And second, participants' aversion or tolerance to serostatus uncertainty, as well as their sexual practices, changed, sometimes significantly, over time. These initial observations shaped the development of the research questions and the direction of analysis. While the general intention of the project remained the same—that is, understanding the effects of serostatus uncertainty—the research questions became more refined through the process of data analysis to become the following:

- Why are some HIV-negative gay men more tolerant to serostatus uncertainty?
- How does a social actor's social location orient him to HIV risk, producing or inhibiting a tolerance to serostatus uncertainty?
- Why and how does tolerance to serostatus uncertainty change or remain the same over time?
- What is the relationship between risk tolerance and sexual practice?

Sub-themes or ideas that did not illuminate answers to these questions were put aside, as generating a general model for understanding the forces that shape risk disposition became the central aim of this project. I will more comprehensively introduce the concept of risk disposition in the next chapter. In brief, this concept examines how a social actor's orientation to serostatus uncertainty and HIV risk management may shift throughout his life. Risk disposition reflects on how specific social conditions alter a social actor's risk reflexivity and risk tolerance levels. Attention to risk disposition helps us to understand how a social actor's unique lived experiences and social location come to affect how he implements agency, modifies his sexual practices and secures his well-being as an at-risk subject over the course of time. Understanding tolerance or aversion to serostatus uncertainty is a core element of understanding the risk disposition of a social actor.

Creating this general theory on risk disposition required me to critically reflect on the interplay between the various social, cultural, economic, political, institutional, emotional and psychological forces affecting the participants' tolerance to serostatus uncertainty and their ability to negotiate periods of serostatus uncertainty. Following an IPA framework, the model generated had to be used to explain the participants' lived experiences. This involved consistently returning to the case studies in order to contextualise developing arguments. Consideration was also paid to the contradictions and/or tensions across the various case studies in an effort to build a stronger, more nuanced framework on risk disposition. This model was inductive in nature, since it was principally produced by focussing on the evidence collected and was not based exclusively on a pre-established theoretical paradigm.

Following this analysis, I shared preliminary hypotheses and theoretical models over a series of events. These included regular academic conferences, but more importantly, these also included several national-based workshops and lectures targeting gay men's sexual health service providers, community members, policy makers and researchers.[24] This element is key. Part of how the data was being communicated and analysed had to consider what information was of practical use to these audiences. To be sure, the arguments I put forth throughout the remainder of this dissertation were not developed to exclusively meet the needs of health care providers. However, there is often a missing discussion in social scientific literature on research

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[24] The following are examples of community forums where my work has been shared with frontline service providers and researchers. I was also invited by the GMSH in the fall of 2015 to a knowledge translation meeting to think about generating new education material to reach at-risk gay men.

- Gaspar. M. (2015, April). Risky business: Examining the role of risk in HIV prevention research and everyday life. *University Without Walls Fellowship Presentations*. Online lecture series hosted by the Ontario HIV Treatment Network, Toronto.
- Gaspar, M., & Tooley, L. (2014, December). HIV risk and gay men's realities: Community talk. Community teleconference meeting hosted by the Gay Men's Sexual Health Alliance of Ontario, Toronto.
- Gaspar, M., & Tooley, L. (2014, October). HIV risk and gay men's realities: Putting sexual health knowledge into social context and practice. *Gay Men's Health Summit*. Symposium conducted by the Community-based Research Centre for Gay Men's Health, Vancouver.
- Wilton, J., Gaspar, M., & Leblanc, M. (2015, April). New prevention frontiers: Communicating the paradigm shifts in safer sex and HIV risk to gay men. Gay Men's Sexual Health Alliance of Ontario Skills Building *Symposium*. Symposium conducted by the Gay Men's Sexual Health Alliance of Ontario, Toronto.

methods about how initial processes of knowledge transfer and exchange may come to influence how a researcher presents and re-considers his or her work.

In addition to collecting this data and analysing it independently, I spent over a year and a half communicating findings and engaging deeply with the gay male HIV prevention field. Communicating findings does not change the data collected, the initial analysis steps described above or, most importantly, the main arguments I put forth. However, engagement with various audiences who have a stake in the consequences of certain research findings can help a social scientist consider the implications of her work and can introduce her to new lines of questioning or areas of research that can help to further contextualize the project. *Why is understanding risk tolerance important? What original insights can this framework offer to our discussions on HIV prevention?* Ultimately, this engagement strengthens the project by requiring a rather extended period of exploration beyond the thematic analysis stage.

I can offer two quick examples to demonstrate the relationship between community engagement and analysis. The first involves my initial theorisations on the relationship between consent and risk perception (I will explore this theme in chapter six, part three). Many service providers found this discussion helpful for thinking about why their gay male clients may react so aversely to a particular risk related event. In one particular discussion, a service provider interpreted these findings as being examples of coercion or forced sex. This, in turn, led me to make it more explicitly clear in this dissertation that even though the lines of consent in gay male sexual practice may sometimes be (very) blurry, these situations are not necessarily about coerced sex or sexual harassment. Framing the issue of as one of coercion (unintentionally) obfuscates the nuances of consent and risk negotiation that I am aiming to capture and the *very subtle* dynamics of gay male sexual practice that affect risk disposition. The service provider's comments helped me to strengthen the communication of these findings.

The second example refers to my methodological decision to not speak to those very closely affiliated with the HIV service industry, in order to reach those outside of the established epistemic community. This methodological choice has been the element of this project that has been the best received and discussed by members of the HIV prevention field, including both researchers and service providers. In other words, the epistemic community was understanding of a critique of the limitations of knowledge creation developing only in and through the epistemic community. Members of the field routinely agreed that this attention to speaking to people “in the know” was a clear limitation of the field and that they tended to replicate this practice through their own CBR projects. One young service provider in particular, who was overall quite critical of my project (because of its strict focus on HIV-negative men), was actually in full agreement with the fact that we keep on speaking to the same people, which slants our perspective. This served to validate my observation that qualitative HIV research in Canada has a tendency to utilise similar epistemic communities to acquire “new” knowledge and, more importantly, that this critical reflection is meaningful to those in the field. In the language of IE, this interest in enlarging the view of the social may be considered to be a bold move in a research field heavily characterised by community-based research (CBR) methodologies. By questioning how our knowledge and beliefs in the field tend to be built on particular voices at the expense of others (and how the institutionalisation of CBR fortifies this process), this project has opened a critical dialogue about who counts as community in our research practices and how recruitment practices may be limiting the validity and generalizability of our knowledge. Engagement with the HIV service community helped to ensure that these critiques were useful and not just critical for the mere sake of being critical.

Moreover, this issue of epistemic community extends beyond recruitment concerns to data analysis. While I have omitted social actors with close affiliations to the HIV service industry and a history of being involved in qualitative research projects on HIV, it is certainly not possible (or even desirable) to omit all individuals with loose connections to the HIV prevention field (for example, individuals who have friends who are service providers, men with gay and queer activist involvements). I wanted to avoid speaking to HIV knowledge experts and HIV activist leaders (whose opinions are represented in the literature reviews in chapter three and four), not exclude men who have had some experiences and tangential ties with the world of HIV services or gay male politics. However, thinking in and through the concept of epistemic community is essential to how I have come to understand the narratives of different participants and how I come to make sense of social practices and dynamics less explored in the established literature. As I will demonstrate in the next two chapters, sexual health literacy rates and reactions to certain issues such as serosorting, are greatly affected by the proximity of a social actor to the HIV prevention field and his orientation to different gay male (and queer) milieus. Even though I am not examining individuals who are directly linked up to the HIV service industry, it is necessary to think about how different social networks of gay men react to HIV differently and how proximity or distance to an epistemic community can affect the risk disposition of a social actor.

The last stage of data analysis is the writing phase. Organising research into a coherent narrative and re-engaging with established literature influences the development of arguments (Braun & Clarke, 2006; Smith & Osborn, 2008). At the writing stage it was necessary to re-read the case studies, data analysis notes, interview notes, preliminary presentations, coding files and, quite importantly, the established literature. Re-engaging with the theoretical and scientific literature (that is, the content of chapters one through four) produced new lines of questioning, exposed new analytical tools and helped to establish the significance of the research findings being developed. These questions and tools were then brought back into the development of risk disposition theory. The following chapters thus draw on a range of theoretical and analytical tools (e.g. emotional in/capacity theory, sexual script theory, cultural risk theory, biopolitical theory, etc.) to add greater nuance and perspective to the following arguments (see above for examples of critical questions developed from these fields). This comparative work and additional analysis represents the interrogative phase of IPA.

Through writing, editing and reengagement with empirical evidence, I was able to both develop, refine and mobilise my original concept of the uncertainty triad, consistently thinking in and through the relationship between the everyday experiences that make up chapters six and seven, with the knowledge production and governing practices that I laid out in chapters three and four. Thinking in and through empirical evidence shapes how researchers think about and mobilise theory and literature reviews—(social) scientific discovery is never a linear path, even though we like to present it as such (Epstein 1996; Latour, 2005). The uncertainty triad is thus a product of a close engagement with critical social science literature on HIV (including institutional ethnography) and critical studies on risk and society (especially risk society theory) as well as an engagement with the collected stories of lived experience. While this dissertation presents a cumulative narrative that mirrors (to some degree) a more traditional scientific method, it is important to see each chapter as significantly indebted to the others. The theoretical thinking and literature reviews that make up chapters one to four led to the development of an empirical project that makes up chapters six to seven. But the data that was collected also helped to refine and add critical nuance to the scholarly narratives and analysis presented in chapters one to four. For example, the critical thinking on treatment optimism literature first presented in chapter three arose after reflecting on the participants' experiences with undetectable viral load, presented in chapter seven. I did not go into the interview process wanting to measure treatment optimism. It was only after closely reflecting on these men's experiences with undetectability that the social and political significance of treatment optimism research became more apparent to me, which led to a deeper exploration of this literature. It was thus only through a reflection on experiential uncertainty that the significance of epistemic uncertainties became visible.

To be clear, this is not a tautological relationship. To argue that theory, methods and evidence are affected by one another is not the same as arguing that they are wholly determined by one another. Each chapter and element of this dissertation offers its own standalone contributions that consistently challenge simplifications and generalizations. Yet the *significance* of these various contributions are shaped through a consideration of how they illuminate or, just as importantly, contradict arguments and data presented elsewhere in this dissertation.

This interrogative phase thus allowed me to reflect on the final foundational research question for this project: what can the everyday experiences of those managing HIV risk (and tolerance to serostatus uncertainty in particular) tell us about knowledge production practices and governing practices within the field of HIV prevention field? In other word, what is the full impact of the uncertainty triad on producing conditions of uncertainty? Following the tradition of critical social science on HIV and institutional ethnography, it was necessary to contrast this project's empirical research findings to existing literature, commentary, research and advocacy practices that I outlined in the previous chapters. This critical activity is not necessary under an IPA framework. However, it adds an additional layer of analysis and interpretation that helps us to question ruling forms of knowledge and ruling relations. It is, indeed, the aspect of analysis that makes this dissertation a form of *critical* social science. Especially in chapter seven, I will come to use the everyday experiences and sexual practices of the research participants to question key epidemiological theories such as treatment optimism and AIDS optimism. This analysis will chart out most clearly the relationship between epistemic, social and political and experiential uncertainties, allowing me to demonstrate how a lack of consensus in the HIV prevention field has affected gay men in the third decade of this epidemic.

Let me briefly summarise the data analysis process. First, data analysis began during the data collection process; the interviewees and I were engaged in collaborative interpretation. Second, interviews were transcribed and read closely, with a preliminarily coding system devised. Third, interviews were re-read and coded. Each interview was turned into a case study summarising the lived experiences and the social world of each participant. Case studies were used consistently throughout the data analysis process to contextualise quotations and develop arguments that were firmly rooted in participants' lived experiences. Fourth, codes of basic ideas and sub-themes were organised into higher-level themes. Fifth, higher-level themes were connected to generate a working theoretical system to best describe the data set and answer the foundational research questions. Sixth, the research question(s) were modified/clarified to become more specific and representative of the collected data. Seventh, original findings were shared with members of the gay men's sexual health service industry, allowing more time for analysis and a critical appraisal of the research findings. Eighth, writing and re-engaging with theoretical and empirical-scientific literature created time for applying multiple layers of analysis, producing new insights. The uncertainty triad was produced, refined and mobilised through a close engagement with theory, literature reviews and empirical evidence. Findings from this project were compared to existing literature and research practices to contextualise this work, to reflect on this project's significance and to produce relevant political critiques of knowledge production and governing practices in the HIV prevention field.

Uncertainty and Methods: Concluding Remarks

In this chapter, I outlined the data collection and analysis processes that are behind the arguments put forth in the remaining pages. I began with an interest in exploring the risk related experiences and sexual practices of gay men, focussing on those men less represented in the established scientific literature. Drawing on IPA and semi-structured interview techniques I collected a range of stories from young HIV-negative gay men about their experiences managing serostatus uncertainty and how they are making sense of the uncertainties associated with HIV prevention during the transition to the biomedical era of HIV prevention. After the simultaneous process of thematic analysis and case study analysis, it became clear that some of the research participants in this study were far more tolerant to serostatus uncertainty than others. Understanding the social factors behind risk tolerance and the epistemological and political significance of risk tolerance has thus become the key focus of this project going forward.

The following chapter will thus elaborate on how gay men are affected by serostatus uncertainty and how an aversion or tolerance to serostatus uncertainty becomes a part of their agential capacity, fundamentally shaping their risk disposition. In the final chapter of this dissertation, I will then take this understanding of risk disposition to reconsider some of the major claims made about gay men and risk-taking in the established literature, such as the treatment optimism and AIDS optimism hypotheses. It is my contention that an analysis of the social conditions that build or deplete tolerance to serostatus uncertainty and a critical reflection on how serostatus uncertainty is experienced and managed by HIV-negative gay men during the transition to the biomedical era of HIV prevention, offers an original contribution to critical social science on HIV by shifting us away from an interest in sexual risk-taking that characterises a bulk of the established literature.

From this project's very foundations, I was interested in examining how HIV-negative gay men are governed as at-risk subjects, by drawing on the lived experiences of those managing serostatus uncertainty in their everyday lives. This emphasis on lived experience, on collecting and sharing the perspectives and stories of those navigating risk and negotiating serostatus uncertainty, is the primary objective of this dissertation. The focus on risk tolerance and the management of epistemic, social and political and experiential uncertainties that guides the remaining pages was not wholly pre-determined before entering into the field, but emerged through active engagement with a diverse set of research participants and a critical reflection on their lived experiences. The nuanced nature of the recruitment, interview and data analysis processes created a context where a large amount of complex data was collected about sexual practice that called for a re-engagement with this project's mission and a critical reflection on its epistemological and political capacities. By speaking to those less involved with the HIV prevention field, and to men with very different sexual histories and connections to gay male communities, a rich data set was collected, thus offering original insights to critical social science on HIV. Thus how we do research is not separate from the knowledge claims or political arguments we make. Critical social science requires a consistent and deep engagement with theory, the established literature, methods and collected empirical evidence, rethinking the connections between these different spheres and mindfully mobilising each to illuminate dynamics found in the others. By devoting serious attention to how I collect and understand the complexity of lived experience and the role of social and political forces on social actors, I have resisted the over simplification of gay men’s sexual experiences to risk factors and sexual risk-taking behaviours, thus opening up a space to explore this epidemic in original and critical ways.

Maturity, one discovers, has everything to do with the acceptance of ‘not knowing.”

Mark Z. Danielewski, *House of Leaves*

Chapter Six

Risk Disposition

Managing Serostatus Uncertainty in Everyday Life

In this dissertation, I have been arguing that the HIV prevention field has failed to achieve a stabilising point during the transition to the biomedical era of HIV prevention. Experts have failed to reach a consensus on numerous HIV prevention issues, generating a proliferation of uncertainties that HIV-negative gay men must navigate in their everyday lives. In this chapter, I shall work through the concept of risk disposition to explore how confrontations with these various uncertainties come to orient a social actor to HIV risk and prevention issues differently over the course of his life. In so doing, I will explain how a social actor comes to reflexively engage with his serostatus uncertainty and adjust his health maintenance and sexual practices in the interest of establishing agency and securing his well-being.

In the preceding chapters, I explained the various ways in which HIV-negative identified gay men have been governed by uncertainty through knowledge production practices and governing practices. I began with an examination of theoretical literature on risk and uncertainty. Drawing from Smithson (2008), I defined uncertainty as a form of metacognition, a knowing about (not) knowing, a form of ignorance premised on having incomplete or ambiguous information. I broke down this general concept into three separate modalities. The first is epistemic uncertainty, which refers to the limited validity and generalizability of knowledge claims that are a product of imperfect research methods and diagnostic tools. The second modality is social and political uncertainty, the population level and broader social-justice consequences that are associated with the governing practices implemented to manage the threat of the unknown. And the third modality refers to experiential uncertainty. These are the everyday confrontations social actors have with the unknown due to the epistemic limitations of knowledge production practices and the social and political uncertainties generated by existing governing practices. Experiential uncertainty thus refers to the pragmatic, common-sense and grounded ways social actors engage with uncertainty in everyday life, that may not be captured by current knowledge production and governing practices. The form of experiential uncertainty that I shall focus on the most intently in the following pages refers to the lived experiences of serostatus uncertainty, an inability on the part of HIV-negative identified social actors to resolutely confirm their HIV-negativity.

Along with describing uncertainty, I also defined risk as the probabilistic exercise of making sense of uncertainty about the future, and risk management as a deliberate attempt to prevent or minimise the threats produced by epistemic, social and political and experiential uncertainties. I defined a social actor as being at-risk when he is uncertain if an adverse outcome will be actualized. However, more than just the cognitive processing of information, or a lack thereof, I argued that risk and uncertainty are also embodied experiences tied to feelings of anxiety and vulnerability.

After drawing from a range of schools from critical risk and uncertainty studies—risk society theory, cultural theory, governmentality and biopolitical theory, and emotions theory—I developed an original analytic framework to make sense of the key domains of uncertainty and risk management, as well as their composite uncertainties, in the HIV prevention field. These domains include: knowledge production practices (epistemic uncertainty), governing practices (social and political uncertainty) and everyday experience (experiential uncertainty). In addition to responding to the most germane contributions of critical risk and uncertainty studies, this analytic frame has also been designed to be compatible with the interests of critical social science on HIV and institutional ethnography (Mykhalovskiy & Rosengarten, 2009a, 2009b; Namaste et al, 2012; Smith, 2005). The former has a vested interested in critically describing the activity of the HIV prevention field. And the latter, in the service of critical HIV work, draws on the lived experiences of social actors to question ruling forms of knowledge and ruling relations that seek to govern those affected by HIV. Equipped with this critical framework, which I termed the uncertainty triad, I then went on to review scientific literature and community documents on gay men and HIV risk to chart out the parameters and activities that comprise the HIV prevention field during the transition to the biomedical era of HIV prevention.

I began by asking what types of knowledge have been produced about HIV risk and gay men during this period and how epistemic uncertainty has been negotiated and mobilised by experts. I also simultaneously queried how various institutions have been responding to HIV risk among gay men and to the social and political uncertainties associated with risk management activities during the transition to the biomedical era of HIV prevention. And, finally, I considered how this uncertainty has been moralised and politicised at different social sites.

I first applied these questions to a review of mainstream biomedical and public health research on gay men, or ruling forms of knowledge. I argued that risk surveillance and risk assessment research produces, aggrandises or minimises epistemic uncertainty in the service of achieving diverse biopolitical agendas. Epidemiological statistics are often used to "beat-up" the epidemic. Under new epidemiological models, serostatus uncertainty is positioned as an even greater threat to population health. Researchers continually question the certainty and effectiveness of established HIV prevention methods and express reservations about the risk reduction potential of emerging biomedical technologies such as undetectable viral load. Relatedly, during the transition to the biomedical era of HIV prevention, many community organisations have been quite hesitant to cheerlead advancements in biomedical technologies on prevention, often taking a very cautionary approach to communicating the benefits of these tools. Looking to risk factor research, such as treatment optimism and AIDS optimism research, I argued that the HIV prevention field has often transferred the epistemic uncertainty associated with biomedical research directly onto our understandings of gay male sexual behaviour. From this point of view, gay men are often characterised as being unable to adequately process the limitations of emerging prevention technologies. I thus argued that managing the epistemic and social and political uncertainties associated with the risk reduction of undetectable viral load has been one of the defining matters characterising the transition to the biomedical era of HIV prevention, fundamentally transforming how we think about HIV risk management, although in complicated and incongruous ways. These various conditions of uncertainty clearly indicate that the field has failed to achieve a stabilising point in its third decade.

I then went on to examine critical social science and humanities literature on gay men and HIV prevention. Here I focused on the work of scholars who have explored the intricate ways that gay men have adapted their sexual practices in relation to changing knowledge on HIV prevention. Drawing on both critical scholarship and community examples, I demonstrated the complexity of the ethico-political dimensions of HIV prevention practices—especially with regard to serosorting, barebacking, undetectability and serostatus disclosure. During the transition to the biomedical era of HIV prevention, we have witnessed significant advancements in our understanding about HIV risk and prevention. However, given the debates about the benefits of emerging technologies, serostatus uncertainty remains something that must be negotiated by social actors in their everyday lives. By focusing on various community examples, including activist art and education campaigns, I began to demonstrate just how contentious and convoluted these negotiations can be (the following chapters will greatly extend upon this analysis).

This review led to the final dimensions of the uncertainty triad, experiential uncertainty, that I shall explore over the remaining chapters. First, how are young HIV-negative gay men being affected by HIV risk and serostatus uncertainty in their everyday lives? Second, how are the uncertainties associated with HIV prevention affecting the sexual practices of HIV-negative gay men during the transition to the biomedical era of HIV prevention?

To answer these questions, I interviewed 33 HIV-negative men living in Toronto and Montréal who have had one or more experiences, for whatever reason, of serostatus uncertainty. To offer original contributions to critical social science on HIV, I recruited men who were not closely affiliated with the HIV prevention field and who had not previously participated in an in-depth, in person research interview about HIV/AIDS. The project also did not focus exclusively on instances of high risk sex (i.e. barebacking, raw sex, unprotected anal intercourse with casual partner). Rather, I allowed participants to discuss the diverse ways in which they have experienced serostatus uncertainty or have responded to HIV risk in their lives. Interpretative phenomenological analysis (IPA) was used as a methodological frame to decipher the data and draw conclusions. This analysis led to the development of an explanatory framework on risk disposition that I will present in this chapter. This framework elucidates why social actors in *specific* contexts, occupying *specific* social worlds, perceive or respond to the experience of serostatus uncertainty in *specific* ways. With the concept of risk disposition in mind, I will demonstrate how a social actor's unique lived experiences comes to affect how he implements agency, modifies his sexual practices and secures his well-being as an at-risk subject over the course of time.

As part of this analysis, I shall examine how various social, cultural, material and political factors come to orient social actors to HIV risk management in specific ways, influencing how they develop tolerance or aversion to serostatus uncertainty over time. I will argue that a tolerance or aversion to serostatus uncertainty plays a profound role in how HIV-negative gay men come to develop their agency in response to the uncertainties associated with HIV prevention. The issue here is *not* about a preference or tolerance for higher risk sex *per se*, but a social actor's comfort with ambiguity over his HIV status for a period of time. This includes comfort with continually addressing the residual risks associated with safer sex practices and lower risk sexual practices like oral sex, which among the risk averse can cause just as much, and sometimes even more, confusion and related anxiety than higher risk sexual practices. Rather than exclusively focussing on understanding justifications for sexual risk-taking, this dissertation offers original contributions to the field of critical social science on HIV by examining how gay men develop risk tolerance—that is, an acceptance of serostatus uncertainty—or risk aversion—that is, a rejection of serostatus uncertainty—during the transition to the biomedical era of HIV prevention.

This chapter is divided into three separate but closely interrelated sections. Each may be read almost a separate "mini-chapter." However, I have opted to keep these parts into one comprehensive whole as the arguments directly build from section to section, as do the elaboration of the various case studies. Moreover, while one may choose to read the last section on sexual practice separately from the first two sections, I consider it essential to this project's aims that discussions of sexual practice not only focus on the elements of desire and sexual activity that we normally consider when thinking about sex. I firmly believe that in order to think about sexual practice comprehensively, we must begin with detailed investigations into the emotion management, health maintenance practices and institutional navigation strategies that play a role in affecting how people think about sex. The combination of these three parts thus operates to critically expand our thinking about sexual practice, in order to consider the numerous complex layers that affect sexual decision-making beyond an interest in coitus.

In part one, I will elaborate on the general theory of risk disposition and gay male subjectivity in relation to HIV risk. Risk disposition helps us to examine how a social actor's orientation to HIV risk management may shift throughout his life, particularly as he comes to confront periods of serostatus uncertainty. To explore this issue in detail, I will first examine the difference between epidemiological versus experiential serostatus uncertainty, to describe how central both the abstract idea and the concrete lived experience of serostatus uncertainty is within the lives of young HIV-negative gay men. I will then move on to examine the important role of risk tolerance in the lives of HIV-negative gay men, explaining how it may shift their risk disposition over time.

I will illuminate how tolerance or aversion to serostatus uncertainty is not simply an idiosyncratic preference, but is a product of favourable and unfavourable social conditions that alleviate or encourage feelings of anxiety and agential capacity in gay men. Drawing on the sociology of emotions, I will argue that all HIV-negative gay men experience some degree of anxiety that they must manage as they assess themselves as being at-risk for HIV and that a social actor's reflection on his tolerance or aversion to serostatus uncertainty is key to the development of his agency in response to contradictory messages and uncertain knowledge about HIV prevention. Anxiety serves as the bridge between agency and structure, a way in which a social actor recognises the problems posed by serostatus uncertainty through an embodied feeling of fear. Moreover, I will demonstrate that tolerance to serostatus uncertainty plays a key role in how HIV-negative gay men accept or reject new knowledge about HIV risk management and how they respond to the ethico-political dimensions of the HIV epidemic (investigating this dynamic will be the main goal of the next chapter).

The key argument made in this chapter is that variable social conditions intersect at particular moments in the lives of individual social actors that can drastically shift how they respond to the experience of serostatus uncertainty going forward and which greatly impact their well-being. The more favourable the social conditions are for assessing and managing serostatus uncertainty, the more risk tolerant a social actor will be going forward. Conversely, the less favourable the social conditions are for managing serostatus uncertainty, the more risk averse a social actor will be going forward. I explore these conditions in detail in parts two and three of this chapter.

Part two of this chapter examines risk management from a health maintenance perspective, specifically looking at how HIV-negative gay men assess themselves as being at-risk and how they navigate institutions and bureaucracies to receive medical care when experiencing serostatus uncertainty. I will look specifically at the role of internal versus external risk assessment, sexual health literacy levels, access to health services and navigating governmental bureaucracy (i.e. immigration policy). Reflecting closely on the relationship between institutional navigation strategies and sexual practices represents an original contribution to our thinking on HIV risk management and gay men.

Part three of this chapter examines risk assessment and management from the perspective of sexual practice. I will argue that when a social actor is ambivalent about his motivations for seeking a sexual experience, risks associated with that experience can become perceived or moralised in a more negative fashion. Being uncertain about one's sexual and romantic life directly affects how one interprets the associated serostatus uncertainty. Furthermore, the more understanding and confidence a social actor has in his sexuality—the more certain he is about himself as a sexual being—the more confidence he is likely to feel about addressing any potential negative consequences associated with sex. This reflexivity and confidence is based on an evaluation of a social actor's sexual capacities in relation to broader competing cultural expectations, or sexual scripts, on gay male sexuality. How gay men interpret HIV risk includes understanding how they moralise sexuality. This is a process that I shall examine in detail by investigating the role of intimacy, gay male sexual scripts and orientations to gay male communities.

In the conclusion, I will also offer a visual representation (Figure 6.1) of all of the concepts and dynamics expressed in the three sections of this chapter. I will hold off from offering more details about this diagram until the conclusion, since its specific components need to be explained first for the diagram to be fully comprehensible. However, readers may choose to skip ahead for a glimpse if they feel that seeing a map of key concepts first might aid in their reading.

In sum, in this chapter I will demonstrate how young HIV-negative gay men implement agency in the face of serostatus uncertainty during the transition to the biomedical era of HIV prevention in Canada. Moreover, I will critically reflect on how this uncertainty affects their well-being. While there is much debate in social scientific literature, particularly in psychology and health promotion studies, as to what exactly constitutes well-being (Dodge, Daly, Huyton, & Sanders, 2012), some generally agreed upon components involve the "presence of positive emotions and moods (e.g., contentment, happiness), the absence of negative emotions (e.g., depression, anxiety), satisfaction with life, fulfillment and positive functioning. In simple terms, well-being can be described as judging life positively and feeling good" (Centers for Disease Control and Prevention, 2016). Diener (2000) defines subjective well-being as "people's evaluations of their lives—evaluations that are both affective and cognitive. People experience abundant [subjective well-being] when they feel many pleasant and few unpleasant emotions, when they are engaged in interesting activities, when they experience many pleasures and few pains, and when they are satisfied with their lives" (p. 34). Dodge, Daly, Huyton and Sanders (2012) describe well-being as a subjective condition where a social actor has the psychological, social and physical resources that allow him to sufficiently face psychological, social and physical challenges. Well-being is eroded when a social actor lacks the resources to address challenges with ease. In other words, well-being is not about the absence of challenging episodes in a social actor's life (or the elimination of negative affect, which is simply not possible), but whether (in more sociological parlance) social conditions allow these challenges to be addressed competently without a significant detriment to a social actor's overall level of contentment or general quality of life.

I use the term well-being here not as a psychological analytic tool to measure mental health outcomes, but rather, to make explicit what is at stake, beyond epidemiological incidence, when we have an epidemic that is riddled with such great epistemic and social and political uncertainties. By invoking the term well-being, I am moving beyond a narrow focus on the prevention of illness, the transmission of HIV and proclivities to sexual risk-taking, to think more broadly about how continuously managing HIV risk affects the overall level of contentment and the quality of life of social actors. It is one thing to avoid HIV infection. It is another to not be completely or periodically encumbered by the anxieties, social conflicts, political disagreements and logistical difficulties associated with avoiding HIV infection. Even when successful, HIV prevention is not as easy as some may think and the challenges associated greatly affect the well-being of those at-risk, influencing their physical, mental, emotional, spiritual and sexual health, as well as their sense of social connectedness (Centers for Disease Control and Prevention, 2016). It is not my goal in the remaining pages to measure happiness. But it is my goal to expose the numerous social, cultural, political, economic and psychological factors that may erode the quality of life of HIV-negative gay men as they navigate this complex health epidemic.

In this chapter, I will describe situations where social actors clearly lack the necessary resources to address HIV matters with ease in the third decade of this epidemic, despite a well-established HIV service industry in Canada. I will demonstrate how matters of HIV prevention not only affect the serostatuses of gay men—whether or not they become HIV-positive—but how they create a series of psychological, social and physical (including biological, logistical and material) difficulties. I will also expose how social actors often lack the adequate resources (such as knowledge, access to services, social networks or sexual confidence) to address these difficulties with ease. Finally, I will argue how consistently having to think about HIV prevention can be a tremendous burden.

Below I will analyse how gay men have been dealing with this burden of serostatus uncertainty during the transition to the biomedical era of HIV prevention. For some, this uncertainty is more manageable, and for others, this uncertainty is an encumbrance, prompting extreme anxiety. Whether serostatus uncertainty is perceived and experienced as humdrum or as a substantial impediment to happiness is a product of social conditions that operate to either empower or disempower HIV-negative gay men as they seek to gain control over their sexual health, bodies and futures. Occupying complex and specific social worlds, each social actor is oriented to HIV risk management in a specific way that comes to determine how he responds and builds his agential capacity in the face of serostatus uncertainty. To best understand this process, I shall intimately examine the lived experiences of those assessing themselves as being at-risk to see how they develop tolerance or aversion to serostatus uncertainty. Moreover, I will regularly compare these original empirical findings to those in the established scientific literature to question the generalizability of ruling forms of knowledge. I will begin this analysis by first laying out the parameters of risk disposition and agency.

Part One: A General Theory on Risk Disposition

Risk Disposition and Agency: Introduction

In order to make sense of the narratives of the men interviewed for this project, I first offer the concept of risk disposition. Risk disposition refers to a social actor’s orientation to a set of risks and available risk management strategies over the course of time. Each social actor has a distinctive relationship to HIV risk, which will be determined by his specific social location and his unique lived experiences. Each social actor will thus come to engage with HIV risk management practices differently as his social location shifts and his lived experiences challenge him to think about HIV anew. One’s relationship to HIV risk does not remain static. It is an evolving process. In thinking about risk disposition it may be helpful to envision a map with thousands of points scattered (seemingly) randomly throughout.[25] At the centre of this map, we have HIV risk (or we can refer to a more specific HIV risk management issue, such as serosorting or oral sex or PrEP). Some dots are close to the centre and others are (very) far away. Some dots are equidistant to the centre as other dots, but occupy different quadrants. Each of the dots represents a social actor who occupies a unique social position and thus has a unique relationship to HIV risk. We may also witness various clusters of dots in the different quadrants, each representing networks of social actors who occupy similar (but not the same) social worlds and who have had similar (but not the same) lived experiences.

However, this map is dynamic. Over time some of the dots will remain in the same position, while many others will move elsewhere, some only minimally, but others drastically. The new placement of a dot represents a social actor's new risk disposition, his new relationship to HIV risk. However, to complicate matters further, the position and characteristics of HIV risk management do not remain static either. As new knowledge and governing practices emerge, so too does the shape and placement of HIV risk on our map. Social actors are not only moving around, but the very landscape under their very feet is shifting. The dynamic nature of HIV risk management, with its incumbent epistemic and social and political uncertainties, will thus consistently challenge social actors to address HIV risk as an elusive, evolving, undetermined process. HIV risk is impossible to pinpoint for too long in the absence of a stabilising point. Thus at best, we can only read this map at a current moment of time. Give it a few moments and the world may look vastly different.

In order to locate a social actor on this map, and thus describe his risk disposition, we need two analytic tools: risk reflexivity and risk tolerance. Risk reflexivity is made up of the practices of risk assessment and risk perception first discussed in chapter one (Blackwell, 2007). It refers to a social actor's ability to recognise potential harms, interpret available knowledge (including what is unknown or uncertain), calculate the probability of those harms occurring,

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[25] Douglas (1992) also similarly employs the idea of a map to think about issues of risk and risk tolerance. She refers to this as the grid/group model, which she has applied directly to understand gay men and risk-taking in the first decade of the epidemic. The grid/group model has also been utilised by other critical social scientists on HIV to understand gay men and sexual risk-taking (Girard, 2013). My use of the map analogy here is more for illustrative purposes, rather than a more deliberate implementation of the grid/group framework (which I find reduces complexity by focusing too much on group membership and is too static to capture the evolving nature of sexual practice). Nonetheless, it is important to make it clear that the originality of my theoretical and analytic tools, while premised firstly on the empirical data collected for this project, should always be considered to be extensions of the established risk and uncertainty theories discussed in chapter one.

moralise the implications of those harms, consider variable risk management strategies and assess himself as being at-risk enough to warrant a change in behaviour or attitude. Beyond logically processing the probability of adverse events occurring, risk reflexivity refers to the subjective assessment of risk, a consideration of how a *particular* threat will affect a *particular* person at a *particular* moment in time. Thus risk reflexivity is about self-assessment (determining one's own at-risk status) and an evaluation of the HIV prevention field (determining what one knows about available HIV prevention resources). To return back to our navigational metaphor, risk reflexvity is a social actor reading the map, assessing the current landscape and evaluating its accuracy. It's also a reflection on where he is currently located on the map and how proximate he is to the potential for danger.

As an analytic tool, risk disposition also requires explicitly understanding a social actor's tolerance to a set of risks, his ability to presently accept a degree of uncertainty related to future outcomes (Blackwell, 2007). In terms of HIV risk management, risk tolerance is about a social actor's comfort with serostatus uncertainty, his inability to resolutely confirm his HIV-negativity. A social actor is considered to be *risk tolerant* if he can manage serostatus uncertainty with relative ease. That is, the uncertainties associated with the actualisation of a risk into a lived harm, though present, does not impede on the social actor's ability to carry on with the rest of his life; he accepts it and the concern is manageable. A social actor is considered to be *risk averse* if he finds the management of serostatus uncertainty to be a challenging process that comes to impede the rest of his life; he cannot accept the risk and the concern is a burden affecting his overall well-being. However, risk tolerance is not a strict binary classification system with some social actors easily characterised as risk tolerant and others easily characterised as risk averse. Rather, social actors may shift over time from risk aversion to risk tolerance depending on their confrontations and reflexive engagements with serostatus uncertainty (Blackwell, 2007). Returning back to our navigational metaphor, risk tolerance refers to a social actor's level of comfort with his current place on the map and thus his proximity to HIV risk. This is not only an acknowledgement of where he is, but it is also a consideration of whether he would like to remain or adjust his current position.

Tolerance to risk cannot be entirely reduced to a difference between the risk management choices of social actors—that is, who takes a (heightened) risk and who does not take a risk, who implements the best forms of prevention and who ignores preventative measures. Rather, risk tolerance refers to a social actor's comfort, regardless of his risk-taking behaviour, with *not knowing* if harm will be experienced in the future, if precautionary measures will be effective enough to avoid harm and how well he can effectively handle that harm if it does occur. Risk tolerance is not about risk-taking *per se*, but is about a comfort with uncertainty, with having to confront the unknown. For HIV risk management, it is about a comfort with serostatus uncertainty, with experiencing a window period being in doubt over one's HIV status.

In terms of HIV-negative gay men and HIV risk management, risk disposition refers to a social actor's reflexive engagement with matters of HIV prevention, his self-assessment of being (or not being) at-risk and his opinions on what constitutes effective risk management. How much a social actor values certainty will play a role in how he experiences and reflects on his experiences related to HIV risk—how he comes to systematise, rationalise, moralise and politicise sexual and drug taking behaviour. His risk disposition is thus fundamentally about how much serostatus uncertainty his particular relationship to HIV risk management is currently producing. Hence, risk disposition also refers to a social actor's tolerance to serostatus uncertainty, how well he can manage some degree of doubt over his serostatus and some degree of uncertainty associated with his prevention practices, given what an HIV-positive diagnosis would mean for him at a *particular* moment in his life, at a *particular* moment in the history of the epidemic. A risk tolerant social actor considers serostatus uncertainty to be a manageable experience. A risk averse social actor considers serostatus uncertainty to be an unbearable experience (regardless of the actual degree of sexual risk-taking that put this social actor at-risk). A risk tolerant social actor is more or less content with his place on the map, whereas a risk averse social actor would like to move elsewhere.

In terms of risk disposition, there are two interrelated temporal aspects to consider when I refer to social actors as being at-risk for HIV. First, being at-risk for HIV can refer to a general *temporally unlimited* classification that derives from one's membership within a population which is known to have a high prevalence of HIV. In this sense, *all* HIV-negative gay men are "at-risk" in that they are meant to continually reflect, regardless of their actions, on the possibility of HIV appearing in their own bodies, their sexual-intimate relationships and their communities. They always need to have the map in their back pocket. I will refer to this form of at-riskness as *epidemiological serostatus uncertainty*. Any form of knowledge production or governing practice that prompts HIV-negative gay men into thinking about the mutability of their serostatuses—for example, public health messaging which encourages routine testing, or activist discourse mobilising gay men around the criminalisation of HIV non-disclosure—is invoking epidemiological serostatus uncertainty.

Blood donation policy in Canada that restricts all sexually active gay men from donating (see chapter two) is a key example of the broad epidemiological classification of gay men as being at-risk that is not specifically rooted in an *individual's* risk-taking behaviour, but is based on the prevalence of HIV among gay men as a group. It is invoking the theoretical possibility of future seroconversion that is logically inferred simply because a social actor is a gay man, or more accurately for this form of serostatus uncertainty, a "MSM." That the blood donation policy has shifted from a life-long ban on MSM donating blood, to a five year abstention from homosexual sex (and now a one year break from homosexual sex) before donations are allowed, only further solidifies this notion of epidemiological serostatus uncertainty. These policy shifts have not been rooted in any significant change in knowledge or any new biomedical technologies to screen blood for HIV more effectively in Canada. Rather, they have been a product of lobbying and activism by gay men that have argued that this policy is discriminatory (Tasker, 2016).[26] This means that following the initial AIDS crisis years, the continued duration of the lifelong ban on MSM donating blood was not a governing practice based solely on the interpretation of knowledge and available technologies (if so, the policy would have never changed). Rather, it is based on the epidemiological belief that all sexually-active gay men are more at-risk for HIV and that regardless of the accuracy of our available blood screening tools, these social actors are always experiencing epidemiological serostatus uncertainty. Furthermore, there still remains no purely *biomedical* reason to deny monogamous HIV-negative gay men in long-term seroconcordant relationships from donating blood (unless we assume that they are incapable of remaining faithful, which, as the literature reviewed in chapters three and four demonstrates, is the guiding assumption). Nonetheless, whether monogamous or promiscuous, gay men's HIV-negative statuses are always uncertain. While abstaining from sex for three months would technically confirm the serostatus of any HIV negative man, this does *not* absolve

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[26] Interestingly, abolishing or modifying the blood ban was one of the policy promises made by the Liberal Party of Canada in their successful 2015 federal election (Tasker, 2016). This confirms further that broader political interests rather than purely objective interpretations of data guide governing practices on HIV risk management. It also suggests, if only indirectly, that the previous blood donation ban supported by the Conservative government (not particularly known for being a fierce advocate for LGBTQ and sexual minority rights) is most likely rooted in the biopolitical interpretation of gay men as others and as generally threating to the health of the "general population."

him from the epidemiological serostatus uncertainty that being a gay man automatically produces.

A social actor's actual level of sexual risk-taking is less relevant here than his association to the sexually active gay male population which places him as both vulnerable to, and a potential source of, risk. Every social actor and social group may have a specific relationship to HIV risk management (that is, a specific risk disposition). However, epidemiological serostatus uncertainty ensures that gay men as a group are fundamentally understood (and following governmentality theory, fundamentally understand/regulate themselves) through their risk disposition to HIV, through a biopoltical relationship that puts them at higher proximity to HIV risk. This relationship positions their serostatuses as easily mutable and potentially threatening to population health.

Many of the men interviewed for this project were aware of this broad classification of being at-risk but also resisted this idea.

> Ben: Um, do I consider myself at-risk? No. Because I feel like I take measures. Yes. I mean... no. I would say I'm not at-risk. That is to say, if I was to seroconvert, would I have been at-risk the whole time that I considered myself not at-risk? I don't know. That would make the word "risk" sound like I've been waiting for something the whole time. Um, would I consider gay men to be at-risk? No. Yes and no. I mean like all humans have the possibility of contracting something, so I don't really [know]…

We see here that Ben is resisting the implication that either he or gay men in general are at-risk simply for being gay men. Since he takes precautionary measures—that is, he uses condoms for anal sex—it seems somewhat counterintuitive to consider himself as being perpetually at-risk. At the same time, he cannot deny the higher prevalence of HIV among gay men and how this shifts the level of attention gay men will spend on HIV matters versus other social groups. However, while the epidemiological reality that gay men may be more prone to HIV infections may be true, the implications of this reality, the idea that all gay men are just waiting for their inevitable infections, can be resisted. One can acknowledge their risk disposition, but may not appreciate being principally viewed through this relationship.

Already in Ben's statement we see reference to the second form of being at-risk. Along with routine testing, Ben has experienced several moments in his life where he was uncertain about his HIV status in a more explicit manner, prompting him to consider that he may indeed be at-risk, since he *has been* at-risk. Being at-risk, in this second sense, refers to a *specific chronically bounded* moment (or, in some instances, a series of interrelated moments) in the lives of some social actors, where serostatus cannot be absolutely confirmed as HIV-negative and where there exists some possibility, however likely, for seroconversion. Some participants referred to these moments as "HIV scares," incidences where heightened forms of sexual risk-taking may have taken place, prompting the social actor to be concerned or at least highly cognisant about his serostatus. Importantly, "HIV scares" are not always related to intentional moments of unprotected anal intercourse (i.e. barebacking). Serostatus uncertainty can also be provoked by concerns over oral sex, protected intercourse, condom breaks and unplanned unprotected anal intercourse (I will look more closely at some of these examples below).

This form of at-riskness can be referred to as *experiential serostatus uncertainty*. An at-risk social actor is not dealing with a hypothetical or generalized possibility of HIV infection, but at the current moment he perceives an HIV infection to be a very real possibility (however biomedically unlikely). In this instance, he must take some direct action to address his serostatus uncertainty. With regards to our navigational metaphor, this is not a moment where one is simply carrying the map in his back pocket; one is now actively reading it, trying to determine how to best navigate through his current position.

Serostatus uncertainty is always an observation about how one's relationship to HIV risk management—that is, one's risk disposition—makes their HIV status undetermined and thus threatening. However, epidemiological serostatus uncertainty is a product of knowledge production and governing practices and the associated epistemic and social and political uncertainties. For example, it is produced through policies like the blood donation ban or through prevention education campaigns like HIV Stigma that I analysed in chapter four. Experiential serostatus uncertainty, however, is associated with everyday lived experiences and its associated experiential uncertainties. It isn't about the abstract threat of HIV, but a current negotiation with the unknown. Nonetheless, there are obvious connections between epidemiological and experiential serostatus uncertainty. One striking example comes directly from Ben's narrative. Ben found out through Facebook that a recent lover of his had died of viral meningitis. He promptly took himself to the hospital emergency room to see what he should do—demonstrating, I would argue, a responsible form of biological citizenship. However, in the emergency room he was informed that this partner probably died of AIDS related causes and that meningitis was most likely a cover up to reduce stigma. They then tested Ben for HIV.

This narrative captures the nuanced relationship between epidemiological and experiential serostatus uncertainty. Though viral meningitis was a genuine health concern among gay men—particularly in New York City around 2012 (New York City Department of Health and Mental Hygiene, 2012)—the automatic epidemiological association between gay men and HIV shaped the way these medical experts viewed and handled Ben's health concerns, changing what exactly he was at-risk for and the very care he was given. As a sexually active HIV-negative identified gay man, physicians read him automatically through the lens of epidemiological serostatus uncertainty. There is also an obvious experiential component of serostatus uncertainty in this narrative as well, right from the shocking moment of finding out that his lover had suddenly died over social media, to the discussions with medical experts who informed Ben that there was a chance that he might be HIV-positive. This example is a powerful demonstration of experiential serostatus uncertainty and underscores why some research participants referred to these experiential moments of serostatus uncertainty as "HIV scares."

In terms of risk tolerance and experiential serostatus uncertainty, we are generally referring to a social actor's comfort with having uncertainty over his serostatus for an extended period of time. Currently in Canada, testing for HIV is predominantly done through antibody testing, with a conservative 12-week window period before an HIV-negative serostatus can be confirmed. Thus being risk averse or being risk tolerant refers to a social actor's capacity for managing the uncertainty of his serostatus for a minimum of three months before he receives clarity. For a risk averse social actor, this three-month period can be an extended and difficult period. For a risk tolerant social actor, this three-month period of uncertainty is more mundane.

The situation, however, is even more complex. Considering that risk is associated with nearly all sexual acts between men, including *protected* anal intercourse (Remis et al., 2014), essentially a sexually active social actor remains uncertain about his serostatus (even if only marginally) indefinitely. Moreover, as noted in the previous chapters, the field of HIV prevention has gone to great lengths to turn those who are at-risk (those uncertain about their HIV statuses) into those who pose the most risk to others (Montaner et al., 2010). Thus being risk averse or risk tolerant is not just a social actor's comfort with his own serostatus uncertainty, but also his comfort with the risk his serostatus uncertainty poses to potential sexual partners.

Again, we see a clear overlap between epidemiological and experiential serostatus uncertainty. Although a social actor may not have any high risk moments, or have any obvious "HIV scares," the epidemiological framing of all gay male sexual acts as posing some risk and all gay men as posing some risks to each other, continually fosters serostatus uncertainty within many gay men that must be managed. That is, at a minimum, those epidemiologically at-risk who are sexually active are expected to test routinely for HIV and STIs, and that, in and of itself, is a lived experience of serostatus uncertainty.

A key argument of this dissertation is that moments of experiential serostatus uncertainty play a significant role in determining a social actor's evolving risk disposition and how he comes to implement agency. Facing a real potential for HIV infection (however unlikely) will prompt a social actor into heightened forms of risk reflexivity. He will begin to consciously make sense of the current HIV prevention landscape and critically examine how his sexual activities and drug taking behaviours have put him at-risk. This is also a moment where he will arrive at a consensus (if only temporarily) on how much serostatus uncertainty he is willing to tolerate going forward. In other words, through lived experiences of serostatus uncertainty social actors reflect on and develop a tolerance or aversion to uncertainty. This tolerance to serostatus uncertainty then comes to play a role in how he will respond to HIV risk and how he will adjust his sexual practices going forward in the interest of avoiding the pain associated with serostatus uncertainty. It is through his decision to keep or adjust his sexual practices that a social actor implements his agency in response to the threat of serostatus uncertainty.

In sum, risk disposition refers to a social actor's orientation to HIV risk and risk management practices, a product of his unique social location and lived experiences. It can be understood by investigating his risk reflexivity and risk tolerance levels. A key component to understanding a social actor's risk disposition is making sense of serostatus uncertainty, reflecting on how his current relationship to HIV risk is putting him at-risk for HIV in some capacity. Experiences of serostatus uncertainty play a significant role in altering a social actor's risk disposition. Indeed, if we want to better understand how young gay men are responding to the epidemic, the argument here is that we need to make sense of how they cope through lived experiences of serostatus uncertainty and how they develop risk tolerance or aversion in the interest of implementing agency. We can begin this examination by focussing on the management of anxiety during an experience of serostatus uncertainty.

Anxiety, Risk Tolerance and Agency

From the interview data, it is exceedingly evident that HIV-negative gay men experience many different emotions as they navigate a lifetime of serostatus uncertainty including: uncertainty, irrationality, doubt, scepticism, worry, nervousness, terror, panic, anger, distrust, guilt, shame, regret, disgust, sadness and vulnerability, to name a few. Each of these fears has their own specific character that will orient social actors to potential problems and their solutions in unique ways (de Courville Nicol, 2011). However, for the purposes of this dissertation, I will draw principally on anxiety as an overarching emotion concept to make sense of the role of fear in the management of serostatus uncertainty. This is not intended to minimise the nuances of these other fear-based emotions, some of which I will examine more specifically below. However, I do argue that all of these emotions either stem from, or are highly related to, the anxiety that is produced and fostered through serostatus uncertainty. Focusing principally on anxiety thus provides us with the foundations for understanding the emotional dimensions of HIV risk management and a better understanding of the relationship between agency and structure in the management of serostatus uncertainty. Indeed, it will allow us to examine, beyond logical risk assessment practices, how social actors come to recognise, through their embodied feelings of fear, serostatus uncertainty as a problem to be addressed.

In in/capacity theory, de Courville Nicol defines anxiety as a modality of emotional experience in which the self perceives that its personal ability to manage an emotional problem is inadequate. In this sense, anxiety is the experience of personal responsibility for painful emotional outcomes. Thus an individual or a group might experience anxious terror if they feel that their personal ability to confront danger is inadequate, or anxious worry if they feel that their personal ability to prevent danger is inadequate. When anxious, a social actor not only feels that a particular outcome might cause him pain, but that he is currently incapable of managing this threat to his satisfaction due to a lack of means or of access to known means of power. Anxiety can be classified as a moral versus a subjective fear state, since the fear is about the social actor’s own ability to manage threats (i.e. anticipated pain). Both internal and external triggers may prompt an anxious reaction. However, the defining feature of anxious experience is that the conflict implicates one’s agential capacity, such that one feels incapable of adequately navigating uncertainty.

As first discussed in chapter one, anxiety has clear parallels with the emotional-norm pair risk/precaution, inasmuch as the latter implicates a process of personal reflexivity. In in/capacity theory, the feeling of risk is the fear that one cannot prevent a potential harmful outcome based on calculative processes. The feeling of risk implies the feeling of precaution, which successfully resolves the problem of uncertainty built into risk. In the anxious risk experience, the social actor feels dissatisfied with their current inability to implement a state of emotional security in the face of uncertain harmful outcomes. In other words, they do not feel that they are able to implement a positive feeling of precaution and *feel responsible* for this state of painful inadequacy. This conceptualisation of anxiety also touches upon other emotional-norm pairs in in/capacity theory, such as the experience of being overwhelmed/coping (a social actor's "perceived inability to avoid the pressures of everyday life") and stress/resilience (a social actor's "perceived inability to avoid the pressures of everyday life in ways that promote health" (de Courville Nicole, 2011, p.36-38). Yet, beyond these specific emotional states, anxiety can be considered something sociologically broader that links the feelings of pain associated with the management of risk to a failure of self.

Similarly, Wilkinson (2001) describes anxiety as an experience where our doubts and uncertainties become envisioned as a threat to our personal security and self-identity. When a social actor is at-risk they are, to some degree, uncertain about future outcomes and must determine whether or not they have the agential capacity to deal with potential adverse events. If a social actor feels confident in his ability to navigate future harms, his anxiety will be placated. However, if a social actor feels doubtful about *his ability* to navigate future harms, his anxiety may escalate and become burdensome. Anxiety is thus a reaction to uncertainty, to the experience of perceived powerlessness and vulnerability in the face of the unknown.

As I will demonstrate throughout the following pages, there are unique reasons why one social actor may experience shame in response to being at-risk (for example, because he is anticipating his parents' reaction to his possible seroconversion) and another may experience anger (for example, because he feels mistreated by a former lover). These feelings will alter how these men respond to and moralise their situation. Nonetheless, in both instances, the reason why the social actor is fearful to begin with has to do with serostatus uncertainty and feeling vulnerable to the unknown. When this fearfulness becomes a state over which a social actor feels he lacks satisfactory control, it becomes a state of anxiety. Put differently, anxiety helps to fuel a complex consortium of fear (i.e. stress, terror, shame, anger, etc.) for at-risk social actors. Indeed, absolutely every single HIV-negative gay man—regardless of his confidence in his risk management practices and his sexual health literacy levels—has moments of anxiety related to contracting HIV and STIs. All participants in this study negotiating serostatus uncertainty have experienced some degree of risk related anxiety. This theme cuts across *every single interview* in this study. Managing anxiety is central to the experience of being at-risk for HIV.

Sometimes the level of anxiety can be quite severe. For instance, let's take Nick's description of his HIV related fears:

> Nick: Um, I am, like, deeply cognisant of HIV risk and also terrified of contracting HIV. There [are] a number of people in my life who have HIV, including family members and like relatively close friends. So it's a thing that is, like, very real to me. It's a thing I'd rather not get.
>
> I have an anxiety condition generally and one of the ways that it manifests is as a sort of generalized health concern. It's not hypochondria *per se*. I don't think that I'm sick; I am worried that I will get sick.… And that depending on what my overall stress levels and like other support systems in my life look like, it's a very well-managed thing at some points in time and other points in time it can become a crippling anxiety. So for example, when I was in Montréal, before I was diagnosed with said anxiety condition, I was absolutely convinced there was something fatally wrong with me.

Nick continues on to describe his anxiety over HIV as being a weekly and sometimes daily occurrence. He remains concerned when he goes for routine HIV testing appointments even when he has not had *any* high risk sex and sometimes any sex *at all*. His anxiety over HIV infection has prompted him to seek counselling services several times; services which are not particularly accessible to those in Canada without quality independent health insurance (Anderssen, 2015). However, of the young men interviewed for this project, Nick has perhaps the highest level of sexual health literacy when it comes to HIV prevention and does not practice higher risk forms of sex (that is, unprotected anal sex). Thus his anxiety, he admits, is not rooted in his inability to accurately calculate the probability of seroconversion, or a limited understanding of the manageability of living with HIV. It is, however, a product of his hyper awareness of his epidemiological at-risk status—that even though he engages in lower risk forms of sex only, there is always a modicum of doubt that he must negotiate.

That Nick's anxiety manifests so strongly when he is feeling stressed about other matters in his life returns us back to the role of powerlessness and control central to the experience of anxiety. In moments where Nick may be struggling to manage various aspects of his life—in this case, he is referring to a difficult family living situation, an extremely trying semester at school, mounting financial stresses and career instability—a reflection on how he might have to deal with an HIV diagnosis produces tremendous anxiety as he begins to acknowledge his precarious socio-economic situation. Put differently, in the lives of some HIV-negative gay men, the risk of HIV infection can sometimes become a symbolic placeholder for all of life's uncertainties, even when the biomedical risk of seroconversion is minimal.

Many of the men interviewed for this project talked about experiencing a tremendous amount of relief after receiving an HIV-negative test result, which served as a second (or third, fourth, fifth…) chance. As an example, we can take this passage from Jake, whose severe anxieties around HIV almost prevented him from doing the interview for this project. He had recently received an HIV-negative test result after having had unprotected anal sex.

> Jake: But yeah, I'm glad that everything's good and I'm back to square one. And now I need to grow up and realize that I'm 24 and I need to start making good choices.

There is an obvious moral component to this passage. Throughout his interview Jake had very strong critiques against those who take sexual risks and those who have a lot of sex. Yet, what is fascinating here, is that managing his at-risk status and building perspective on his sexual risk-taking behaviour is associated with the idea of growing up and becoming a man. Meanwhile, Nick's HIV-related anxieties are directly triggered by uncertainties associated with navigating adulthood. Others shared similar sentiments about using moments of experiential serostatus uncertainty as a time to reflect on growing up. Thus anxieties over HIV risk are not limited to anxieties over seroconversion, but for some social actors they may actually be manifestations of broader fears associated with growing up, "becoming a man," and being responsible and self-sufficient. Indeed, for some participants, thinking about how they would be able to handle an HIV diagnosis—do they have the socio-economic foundations to make an HIV infection easily manageable—initiates a broader reflection on their ability to handle all precarity and all health risks going forward.

Thus for gay men growing up with this epidemic, the post-AIDS generation who have been taught to fear HIV above all else, serostatus uncertainty not only triggers tremendous anxiety about one's health status, but also becomes a way for some to make sense of all life's uncertainties. HIV related anxiety is actually related to very real material concerns over how well equipped (young) social actors are to handle difficult life events and what they need to do (with their careers, families, living situations, sexual relationships, etc.) to prepare themselves for adverse events. These are events that appear more likely to occur when directly confronting serostatus uncertainty and realising that one is not immune from health threats.

Following in/capacity theory, if we believe that emotions are central to how social actors recognise problems, implement agency and make decisions, the argument here is that anxieties associated with HIV risk may not only prompt one into thinking about adjustments to his sexual behaviour and HIV testing (more on this below), but also into thinking about making pragmatic decisions to secure his social and financial well-being should he have to face a difficult health situation. In other words, among young HIV-negative gay men, the anxieties associated with being at-risk for HIV are not reducible to a concern over a severe illness and even death. Rather, these anxieties represent a broader emotional reaction to having to set up the foundations of survival as young adult men.

These arguments mirror those made by Crawford (1994) and Adam (2005). Crawford argues that avoiding an HIV infection and preoccupying oneself with maintaining one's health status (that, is healthism) is part of maintaining a middle class identity, at least at the symbolic level. HIV infection, and by extension, experiential serostatus uncertainty, challenges a sense of middle class identity or upward social mobility, by suggesting that one has temporarily lost control, has been reckless and has been unable to successfully navigate health risks as one would financial risks. Even in the face of social and economic precarity, being physically healthy remains something that social actors can latch on to in order to feel in control. Being at-risk challenges a sense of security and thus troubles one's entire sense of self. Risk society theory offers comparable sentiments on the necessity of managing uncertainty in the implementation of self-identity (Giddens, 1991, 1999). An inability to manage risk and cope with uncertainty threatens one's ontological security, leading to a possible collapse in the individualisation narrative one has invested their entire sense of self in. Meanwhile, Adam argues that HIV infection, and by extension, experiential serostatus uncertainty, often comes to be moralised negatively by gay men who, following the logic of neoliberal governmentality, believe all adverse events to be a product of an individual failure to successfully calculate risks. These men feel bad that they are at-risk because they have failed to do the math correctly, rather than thinking that the math may just be really difficult. Consequently, anxiety, the fear of lacking the agential capacity to deal with future harm in a satisfactory manner (i.e. based on personal standards mediated by social context), is integral to the experience of experiential serostatus uncertainty. It is a key emotional experience in neoliberal governmentality and our contemporary risk society that understands social precarity and illness as predominantly resulting from an individual's shortcomings.

Even those participants interviewed with the highest degree of risk tolerance, periodically have some doubt over their serostatuses and have to reflect on their ability to navigate a future life as an HIV-positive man. For example, let us take this passage from Scott who always uses condoms when having anal sex and remains quite risk tolerant:

> Scott: I mean, for some reason, like every time I go [get tested for HIV], I'm nervous. Every time that I like step into the office, I'm always like, "Oh my God, what if I'm positive this time? *Like, what would I do?*" And so, yeah, [I] think like every time, I'm nervous, but I don't really have a reason, necessarily, to be like, why I'm nervous. I just am nervous every time. Um, but I've never really felt like when I went there like, oh, there's a pretty good chance that I'm going to be positive. It's more just like, oh, there is a chance that, or there is a slim chance that I could be positive.

This anxiety also comes up when some of the most risk tolerant men experience a cold or flu, which can be perceived as symptoms of acute infection (i.e. early HIV related illness). Here, Vincent is speaking about his experiences getting tested.

> Vincent: No, I'm single, so I just feel that that's [i.e. getting testing regularly] just natural. Though, at the same time, every time I'm sick I can't help thinking that I have AIDS. It's just something that you grew up with and when I told that to the nurse she said, "yeah you're not the only gay man that comes here nervous, when in fact, you don't have nothing to be nervous about." It's just a stereotypical thing. I still think about—I'm sick, I have AIDS, that's it.

Both Scott and Vincent are fairly risk tolerant and have considerable confidence in their risk management practices and sexual choices. However, a degree of worrying or nervousness is an inevitable part of assessing oneself as being at-risk. Assessing oneself as being at-risk entails acknowledging that receiving an HIV-positive diagnosis is a possibility (however unlikely), which lends itself to questioning how one's life may be altered by this information and how well one will be able to cope with these changes. It can never be a process that is based solely on biomedical calculation, or the cognitive processing of information. Risk assessment, even among the more risk tolerant, involves directly confronting the fact that one may struggle in the face of an adverse event. For some social actors, this emotion management work is easier, while for the more risk averse, this emotion management work takes more effort.

To be risk averse does not necessarily mean that a social actor is overly anxious or is frequently suffering through panic attacks like Nick, who represents an extreme example. (On the one hand, it wasn't uncommon for interview participants to describe being terrified when experiencing serostatus uncertainty and a few potential participants could not even offer interviews because they were too anxious to talk about HIV. A couple of participants actually barely made it to their interviews because of their anxieties.) Rather, it means that a social actor is cognisant that he severely dislikes experiences of serostatus uncertainty and knows that this serostatus uncertainty can produce anxious terror, phobia, or worry. He will then attempt to match, successfully or unsuccessfully, his risk management practices and his beliefs about the epidemic with his low tolerance for risk, in an effort to avoid not just HIV infection (though this remains an obvious and primary goal), but also to minimise any social conflict and form of emotional pain associated with serostatus uncertainty, including anxiety.

In other words, it isn't just a possible HIV diagnosis that he fears, but also having to live a period of at least three months (that is, the window period before an HIV-negative result can be confirmed) in doubt over his serostatus. Thus being risk averse is not just a reaction to the fear of seroconversion, but it is also a reaction to the fear of being at-risk for HIV, the fear of experiential serostatus uncertainty. It is a reaction to having to live through an extended period of serostatus uncertainty and with the dread of having to get tested. This is essential, because it means that it isn't just the possibility of living with HIV that fosters anxiety. For some, the mere experience of being at-risk can produce an overwhelming sense of powerlessness. For example, despite always having safer sex, Chris describes the experience of HIV risk and serostatus uncertainty as all consuming:

> Chris: Well, right now I'm not having sex. [So] I don't think about [HIV] at all. When I am sexually active I think about it every time I have sex. Like it's the first thing I worry about and I kind of carry that worry with me until I just can't take it anymore and I go get tested.

Meanwhile, Fred describes the window period as both "frustrating" and "anxiety provoking," and that not knowing his HIV status always makes him a bit afraid. He wishes for technology that would allow him to know instantly if there were any risks of HIV or STIs in a given sexual scenario so that he would not have to be, in his own words, "freaking out for three months." Fred's risk aversion is not rooted in high probabilities of HIV infection. It is based on an extreme dislike of the long window period facing serostatus uncertainty. Both Chris and Fred abstain from sexual activity periodically to avoid having to deal with the anxiety associated with serostatus uncertainty.

Importantly, being risk averse does *not* mean that a social actor will avoid all sexual risks or any heighted risks (knowingly or unknowingly). One can be risk averse and have unprotected anal sex with a casual partner, for example. However, after a specific risk has been taken, a social actor who is currently risk averse will find it extraordinarily difficult to manage the serostatus uncertainty associated with his choices. On the opposite end of the spectrum, a social actor who is risk tolerant is not devoid of anxiety over his HIV status. However, his anxiety levels when he experiences himself as being at-risk are manageable and he is able to align his sexual practices with the knowledge that he will be capable of managing his serostatus uncertainty with more or less ease until his next HIV test. An HIV-positive diagnosis may disappoint, terrify or shock him, but this social actor is no longer (overwhelmingly) fearful of having to live extended periods in doubt—he accepts serostatus uncertainty as part of his sexual life. Importantly, a higher tolerance to risk does not mean that a social actor is always a significant risk taker. Rather, it means that he is more comfortable with the degree of serostatus uncertainty associated with his sexual activity regardless of what his actions may be. Scott's comments above exemplify this dynamic. He is comfortable with the degree of serostatus uncertainty associated with having *protected* anal sex with multiple partners whose HIV statuses he cannot confirm, though it causes some degree of apprehension that he more or less easily manages.

Focusing exclusively on anxiety to make sense of experiential serostatus uncertainty can reduce the complexity of risk management and experiences of being at-risk to the intra-psychic level and to a cognitive shortcoming of the individual social actor—these "worried well" men are simply "over worrying" about the "unfounded fear of contagion" (Botnick, 2000b; Odets, 1995). If someone has tremendous anxiety over serovariant sex, or lower risk sex with casual partners, it is easy to frame this social actor as being anxious, which implies—particularly with a more colloquial and non-sociological usage of the term—that he is unable to effectively compute the "real" risks associated with these acts. That is, though the fear he is experiencing is real, his embodied reaction to the risk object may be over-determined or even pathological (Botnick, 2000b). His anxiety is causing him to exaggerate the "real biomedical possibility" of infection. In this context, we may educate this anxious man about the "actual biomedical risks" in order to alleviate his anxiety. I examined examples of this type of thinking in chapter four, from activist art that directly critiques gay men who have anxieties over serovariant sex (a topic I will explore more fully in the next chapter).

The problematisation of anxiety actually came up directly in the participants' narratives. Take this comment from Matthew who is discussing a moment of risk after having unprotected serovariant sex that eventually led him to seek a prescription for PEP.

> Matthew: So, like, I was trying to rationalize my feelings a lot through, rather than flipping a shit and freaking out, cause I was panicking inside.

To Matthew, rationality (a reliance on knowledge, facts, statistics about HIV transmission) can be used to overcome the mounting panic. This theme is found in many of the interviews and returns us back to the cultural supremacy of the reason over emotion first discussed in chapter one; though, here we clearly see how rationalising is actually serving as an emotion management strategy to overcome panic. Similarly, other participants describe blowing situations "out of proportion" and feeling shame for overreacting to a potential risk event. For instance, Kyle here is discussing his concerns over testing.

> Kyle: I was irrationally afraid of being contaminated.

While social actors are expected to assess themselves as being at-risk and to implement prevention measures, if their interest or concern blends into panic—if the fear they feel is "too great"— then they consider their emotional response to be "irrational," implying that their embodied emotional reaction is not justifiable given the threatening force. It does make sense that after having overcome an intense experience of anxiety and a potentially terrifying moment of serostatus uncertainty, some men will have a slightly more clear or logical framing of their risk events and will come to evaluate their reactions as favourable or over-reactive. However, rather than acknowledging the experience of anxiety as a legitimate reaction to facing a potential life long illness, there was a tendency throughout many of the interviews for participants to dismiss this fear or express shame for having been so fearful. This is perhaps rooted in the cultural belief that real men are risk takers and thus don't feel fear so strongly (or at least, don't admit to it so freely) (Lupton, 1999).

The dismissal of anxiety was particularly evident in Ben's interview. Though Ben remains quite risk tolerant, it was also clear that he has suffered through several moments of severe anxiety as a result of his sexual practices, emotional suffering that he was unable to acknowledge, even to himself, until the interview. Though we instigate anxiety in young gay men so that they govern themselves as at-risk subjects, there is also a cultural expectation that these men will manage this fear as if it did not exist (see too, Crimp, 2002; Odets, 1995). Of course, part of the work of this dissertation is to undo this erasure and to demonstrate that there is value in learning from these fearful experiences.

On the reverse end of the spectrum, the HIV prevention field has tended to classify those with a higher tolerance for risk, or a history of sexual risk-taking, as ambivalent, apathetic or too optimistic in their beliefs about the advancement of HIV treatment. Thus we not only problematize the "overly" anxious, but also those who do not exhibit enough anxiety—*you fear too much or you fear too little*. However, building a tolerance to risk may have absolutely nothing to do with ambivalence, apathy, or "optimism." For instance, Alexander describes periods of his life where he was extremely anxious about seroconversion following moments of unprotected oral sex with hookups (i.e. low risk sex). Over time, however, he discusses becoming "exhausted by the panic" and eventually building a level of comfort with his degree of sexual risk-taking. At the time of the interview he had just had *protected* anal sex with a steady partner for the first time after a decade of dating men, a practice he was formerly uncomfortable with because of the additional risks.

> Alexander: I just kind of let the paranoia die down. And yeah, I just don't let it

> burden me the way that it used to. And I also exercise a certain amount of... I do the best that I can do, within reason…. I cannot be bothered when it comes to the future or what if this person…. I'm just like, you know what? I could be single for the rest of my life. So I could sit here and panic or I can just do the best that I can, be as safe as I can and exercise certain amounts of judgment and screening processes, which could be entirely bullshit. But what else can you really do?

It isn't that Alexander has stopped being concerned about HIV risk or that he has managed to remove all traces of his anxiety. Rather, he is more comfortable with managing the serostatus uncertainty associated with *protected* anal sex. He has made the conscious choice not to let this anxiety burden him and has started to rethink his sexual practices and the way he moralises his behaviour with this new tolerance to serostatus uncertainty in mind. By reflecting on his anxiety and acting on it, Alexander has implemented agency, making choices about his sexual health in the interest of securing his well-being—both in terms of having a satisfying sex life and also ensuring that he does not remain encumbered by panic.

In sum, anxiety is central to how social actors make sense of their current risk disposition and how they implement their agency in the interest of adjusting their relationship to HIV risk. All HIV-negative gay men interviewed experience some degree of anxiety as they assess themselves as being at-risk and reflect on their ability to handle future precarity. This anxiety, felt to different degrees among different social actors, is something that must be managed. Through this process of emotion management and risk reflexivity, social actors come to determine the degree of serostatus uncertainty that they are willing to accept in the future depending on their anxiety levels during their at-risk moments. Let us now examine how this process changes over time.

Serostatus Uncertainty and Anxiety Over Time

In general, the men interviewed for this project tended to develop more risk tolerance with experience. This does not mean that as gay men get older they tend to take more sexual risks *per se*, but rather that they tend to become more comfortable with some degree of experiential serostatus uncertainty. That is, over time social actors appear less conflicted by the sexual risks they are taking or are choosing not to take, and serostatus uncertainty is experienced as still inconvenient but less burdensome. This is reflected in the comments made by Alexander above who just started to have protected anal sex. Even Nick who, as we have seen, has suffered from tremendous anxiety about HIV, has acknowledged that he has become somewhat more risk tolerant over time and has started to engage in new sexual activities like protected anal intercourse where he tops.

> Nick: I've become more tolerant of that risk. Just because, like, if I maintain the standards that I maintained when I was, you know, like 25 let's say, sex would be almost impossible to have. And to the extent that I would be having sex, I would be having one particular kind of sex, which gets boring after a while.

Anxiety about HIV transmission never goes away. However, after several years of having sex, taking variable precautions and learning more about the epidemic, most of the men interviewed built more confidence with their risk management choices over time. We can think of this in the most pragmatic of ways. The first few times one has to get tested for HIV, the idea of being at-risk can feel rather daunting. After several years of routine testing and accumulating knowledge about how HIV and STIs are transmitted and prevented, being at-risk becomes more familiar and less overwhelming. One still fears serostatus uncertainty, but the fear is more recognisable and thus more palatable—that is, the anxiety is easier to manage.

For instance, when Terry first starting hooking up with men, one of his initial concerns was related to the risks associated with performing oral sex. After his first hookup with Harry, where the two had oral sex only, Terry insisted that Harry get tested after they had sex. Harry had listed being HIV-negative on his online dating profile, but later on Terry saw another online profile that listed Harry as being HIV-positive, causing Terry to panic. It turns out that this was just a cruel joke played by one of Harry's ex-boyfriends in order to stir up drama. To respond to Terry's concerns, Harry got tested and turned out to be HIV-negative. However, Terry sought out multiple HIV tests, including a viral test, during this time to alleviate his anxiety. This particular experience of serostatus uncertainty was detrimental to his well-being. It occurred at a time where Terry was just beginning to accept himself as a gay man immediately following the end of a marriage engagement to a woman. Not yet entirely out to his friends and family as gay, and having made no gay friends yet, Terry managed through this trying situation alone.

Terry now looks back on this situation with some shame, believing that he over-reacted, especially in the context of a casual oral sex hookup. Once again, there is a social preference for gay men to manage at-risk situations with a sense of confidence and control, versus insecurity and anxiety. However, being one of his first sexual encounters with a man and dealings with HIV risk, Terry's unfamiliarity with navigating this new terrain caused him tremendous anxiety, less because the risk was high, but more because the risk was novel. Later on, after having a longer-term serovariant relationship with Juan, where Terry learned a lot more about HIV risk management, his stance on HIV began to change.

> Terry: Yeah. Um, I still worry, I still worry. But I think, I don't know. I just think that after everything that I've gone through, I don't worry nearly as much as I once did. I mean, it's still there. But even if I were to find out that I'm [HIV-] positive, like it's certainly not going to hit me like it would have maybe a few years ago. I understand, I think, a lot more about HIV now, that even if I think I've learned that I was positive, I mean, it wouldn't be the end of the world for me. It would be okay. I have two exes who are positive, so right out of the gate there's two people I can talk to about this. I don't know. It doesn't scare the shit out of me like it did once.

Importantly, we see here that having a supportive social network, something Terry did not have when he first started having sex with men, plays a significant role in his comfort with serostatus uncertainty. Nonetheless, Terry admits that his tolerance to risk may be shifting too extremely as he often begins anal sex with casual partners, where he primarily bottoms, without a condom.

> Terry: I think, perhaps, I've gotten a bit too reckless? Like, I think there's living in fear and the fear being bigger than the thing you're afraid of. And then there's just plain being safe and having some sense.

Terry's sexual health literacy levels are high and he is far from ambivalent about living with HIV or about managing risk more generally—he has gone as far as to advocate for a PEP prescription (more on this below) and has even been tested for HIV while on vacation. However, as he expresses, his management of HIV related anxieties has manifested into a hyper tolerance that has made him accepting of heightened risk-taking.

Another dynamic that helps to build tolerance to serostatus uncertainty over time has to do with sexual confidence. I will explore this theme much more closely below in part three of this chapter. However, in general, most social actors tend to become more comfortable with their sexual practices as they build sexual experience. Take this passage from Sam who is comparing his current perspectives on sex to those when he was younger.

> Sam: At that point in my life [i.e. when he was younger], I had no interest in the idea of sleeping with multiple people; at that point, [it] actually terrified me. I was so uh just um— I hadn't developed to the point I'm at now in terms of understanding my own sexual behaviour and so now it's quite different.

The more comfortable a social actor becomes with his own sexuality, the more he can determine what it is he wants and does not want from sexual partners. And as I will argue more thoroughly below, assessment of HIV risk is fundamentally governed by how comfortable social actors are with the sexual encounters that produce serostatus uncertainty. If a social actor is more comfortable with sex in general, he is more likely to be tolerant of the risks associated with the specific types of sex he is having. And, of course, it takes time for young sexually active social actors to build an understanding and comfort with their sexuality.

Thus the experience of serostatus uncertainty eventually becomes more commonplace for most sexually active HIV-negative gay men and a degree of tolerance tends to be built up over time. However, real life is not this straightforward. Risk tolerant social actors do not always remain so risk tolerant. Risk averse social actors do not always consistently avoid HIV risk and thus must confront serostatus uncertainty: an experience they dread. Various social forces intersect at specific moments in the lives of individual social actors, which can either facilitate anxiety or decrease anxiety and can thus shift how social actors respond to serostatus uncertainty moving forward. The level of risk related anxiety—that is, the felt sense of powerlessness in one's capacity to address uncertainty in a satisfactory manner —experienced during moments of confronting serostatus uncertainty is crucial to how social actors develop their risk tolerance and establish their risk disposition. The more favourable the social conditions for assessing and managing serostatus uncertainty at a current moment, the less anxiety a social actor will have and the more risk tolerant a social actor will be going forward. Conversely, the less favourable the social conditions are for managing serostatus uncertainty, the more anxiety a social actor will have and the more risk averse a social actor will be going forward.

In the next two sections of this chapter, I will examine these social conditions, detailing how they alter the risk disposition of a social actor by facilitating or minimising risk tolerance. But first I will briefly summarise part one of this chapter to clarify our developing understanding of risk disposition.

Risk Disposition and Serostatus Uncertainty: General Overview

Focused on the experiential dimensions of the uncertainty triad, in this chapter I have so far been outlining the general dimensions of risk disposition, an original theory that I will continue to explain in the remaining pages as I focus on all of the activities gay men do to manage serostatus uncertainty. Risk disposition refers to the unique relationship each social actor (and for the purposes of this dissertation, each HIV-negative identified gay man) has to HIV risk management that is based on his unique social location and lived experiences. Any lived experience involving HIV, even just as an abstract entity, can shape a social actor's orientation to HIV risk management. Interviewees talked about plays, movies, books, television shows, commercials, songs, high school sexual education courses and university courses that have influenced their thoughts and perceptions on HIV risk management. Off the cuff homophobic and serophobic remarks from one's family members can permanently shape one's relationship to HIV risk. Being actively rejected from donating blood is another common experience shaping gay men's thoughts on HIV risk, a reminder of epidemiological serostatus uncertainty. However, for HIV negative gay men, risk disposition is significantly determined by serostatus uncertainty. This serostatus uncertainty can refer either to the abstract notion of being at-risk (epidemiologically serostatus uncertainty) or, more significantly, to the concrete experience of being at-risk (experiential serostatus uncertainty).

Indeed, moments of experiential serostatus uncertainty, or "HIV scares," tend to lead to heighted risk reflexivity and, relatedly, a reflection on risk tolerance levels. In these moments, social actors perform a reading of the current HIV prevention landscape and process whether or not they are comfortable with the degree of serostatus uncertainty their current social location and social practices produce. In so doing, they actively reflect on their risk disposition, altering it as they see fit. This involves cognitively processing information about HIV prevention. Yet this process is also heavily determined by the degree of anxiety a social actor feels during an experience of serostatus uncertainty. The more anxious he is, the less tolerant he will be to serostatus uncertainty and the more likely he will adjust his relationship to HIV risk management (e.g. through more education, testing and changing sexual practices; the details behind these practices will be explained in the next two sections). If the degree of anxiety seems minimal—if it *feels* less painful—there is no need for him to make large adjustments to his social practices. However if the degree of anxiety he feels is burdensome, he must eventually alter his practices in order to secure his well-being. Living in a constant state of panic is detrimental to his long-term physical, mental and emotional health. Either he must learn to accept a particular degree of serostatus uncertainty or he must alter his risk disposition. Thus through the management of his anxiety the social actor implements his agency and determines his new risk disposition.

This process is never finished in the absence of a stabilising point. As a social actor continues to experience serostatus uncertainty and as the mechanisms behind epidemiological serostatus uncertainty also shift (see chapters three and four), he is continually faced with acknowledging himself as an at-risk subject under conditions of uncertainty. This process is, of course, never fully determined by the actions of the social actor. Various social forces play a role in how he navigates the world as an at-risk subject and thus inhibit or foster his risk tolerance by facilitating or placating anxiety. In the next section, I will investigate these social forces, first examining how at-risk gay men perform health maintenance and access health services. I will start this analysis with an investigation of how HIV-negative gay men assess themselves as being at-risk in the first place.

Part Two

Health Maintenance: Risk Assessment and Institutional Navigation

Health Maintenance: Introduction

In this section, I will expand my formulation of risk disposition to explain how HIV-negative gay men perform routine health maintenance in relation to HIV risk and sexual health concerns. There are variable ways that HIV-negative gay men can come to assess themselves as being at-risk and can manage their serostatus uncertainty. Below, I shall examine external versus internal risk assessment, sexual health literacy, access to health care and navigating governmental bureaucracy. I will argue that the more favourable social conditions are the more tolerant a social actor will be at addressing serostatus uncertainty. Favourable social conditions allow a social actor to feel more in control of managing serostatus uncertainty by fostering a sense of agency. The less perceived agency a social actor has, however, the more averse he will likely become to serostatus uncertainty and the more likely his well-being will be eroded.

Unfavourable social conditions lead to risk aversion. To explore this dynamic, I will begin by examining the differences between internal and external risk assessment.

Internal Assessment vs. External Risk Assessment

Social actors may either assess themselves as being at-risk (internal or self-risk assessment) or may be prompted by other external forces (external risk assessment). Let us first examine an example of internal assessment.

Tim is perhaps the most risk tolerant man interviewed for this project. He remains quite sexually active, he has sex in hyper-sexualised spaces like bathhouses and he engages in serovariant sex without experiencing much anxiety. In fact, Tim is so risk tolerant that he does not even consider himself to really be at-risk at all.

> Tim: No, I never really consider, because I'm safe, I don't really consider myself at-risk.… Yeah, like I don't really see a high risk, low risk, like you're putting it in any kind of scale in between there. It's either, for me anyways—maybe it's a little bit too black and white—but it's like, if I use a condom, I'm safe. If I don't use a condom, I'm not safe. So that's the way at least I think of it.

Thus to Tim, practising safer sex by using condoms is enough to alleviate most concerns he may have about seroconversion. Nonetheless, Tim arrived to the interview having gone for an HIV test earlier that day and stated that he sets up his next sexual health appointment six months ahead every time that he gets tested. Testing, for Tim, is routine. Even though Tim does not consider himself to be at-risk for HIV, the fact that he so regimentally monitors his HIV status demonstrates that he does consider it possible that he may contract HIV (or else there would be no reason for him to test this often). The key issue here is control. Tim confronts his serostatus uncertainty and the potential anxieties associated with seroconversion by determining himself when and where he will get tested. It does not matter what occurs during the six months between tests—limited sexual activity, lots of sexual activity, higher risk sex, etc.— he will still get tested on his own accord at a pre-determined date. Thus, by Tim demonstrating agency over his sexual health regime, he has become tolerant to the existence of some uncertainty over his serostatus, to the point where it produces minimal anxiety and is not envisioned as a burden. Tim manages his anxieties over serostatus uncertainty by being proactive and confronting his at-risk status on his own terms.

Sometimes, however, gay men are prompted by external forces to reflect on their serostatus. Let us examine this extended passage from Chris, who is referring to a moment when a nurse called to tell him that a former sexual partner had seroconverted and that Chris needed to get tested. Chris had engaged in oral sex with this partner.

> Chris: When I got the phone call I was at the university and it was my break period between classes. So, I mean, that's the worst place to get it. I remember walking out of the Arts building seeing, it wasn't a number, it was a number I didn't recognize, so I was like, "Oh my God, who's this?" And as soon as she said Ontario Registered Nurse I was like, oh my God, I maybe thought something happened to someone in my family. I didn't know who it was.
>
> And then when she said what she does, I was like "uh oh." This is going, this is it, this is the end of my life. Not the end of my life, but this is the end of my life as I know it. Like, I'm going to get some news, my life is going to change forever and maybe I'll die, maybe I'll just, you know, be sick. I was kind of, I couldn't think because I was in public. I was standing right in front of the main doors to the building. People were walking past me and I'm on the phone and she's telling me this stuff, and my reactions were yeah, I'm either going to die or I'm going to live with HIV or AIDS for the rest of my life, not knowing what to do, how the rest of my life would be.

Chris' story is an example of how a common public health governing practice known as contact tracing—that is, reaching those who may be at-risk to prompt them to get tested—played a role in shifting a fairly risk tolerant social actor into becoming exceedingly risk averse. After this event, Chris began to abstain for long periods of time from sex as a result of fear and wishing to avoid another window period riddled with anxiety. This extended period of living with anxiety and then abstaining from sex aversely affected his well-being.

From a public health perspective, contact tracing makes logical sense (Broeckaert & Haworth-Brockman, 2014). If Chris found out that he was HIV-positive, this call could have helped prevent future infections and would have gotten Chris into care earlier. At the same time, we should consider what it would be like for a young man who is not yet openly out as gay to his family, nor financially or socially independent yet, to get a call from a representative of the state who has detailed information about his sexual history. If, once again, anxiety is sparked by one's feelings of inadequacy in the face of a threat, this form of biomedical surveillance plays a role in ensuring that social actors address themselves as at-risk subjects and become cognisant that their agency is being monitored.

Returning back to the concept of risk disposition, social actors may either evaluate their relationship to HIV risk and the associated serostatus uncertainty it produces on their own terms, or social actors may be prompted by external sources to consider their serostatus uncertainty. A social actor may read the map on his own, or someone may direct him to do so. Neither situation means that HIV transmission is more likely. However, external risk assessment, by prompting anxiety and reducing a felt sense of agency, also reduces risk tolerance. By increasing its salience, this may make HIV transmission appear to be a far more likely threat regardless of the biomedical realities of the situation. It thus makes waiting for the window period more burdensome. From an epidemiological perspective, Tim may episodically be at a “higher risk” of HIV infection. However, because of the contact tracing call, Chris *feels* more at-risk, and he continues to carry this discomfort with serostatus uncertainty with him even long after this event. Serostatus uncertainty is always a struggle for Chris, whereas Tim has found a system that works for him. The other important dynamic brought up in Chris’ story is that of sexual health literacy, the next important aspect of risk assessment that I shall explore.

Sexual Health Literacy and Serostatus Uncertainty

Like Chris, many of the other young gay men interviewed for this project learned the most about HIV prevention when they were already at-risk for HIV in some capacity. Indeed, experiential serostatus uncertainty is often the catalyst for educating oneself more about HIV matters. In much of the social science literature on HIV prevention that I reviewed in the previous chapters, gay men are characterised as being very knowledgeable about new biomedical information on transmission and being scientifically active (Adam, 2005, 2006; Race, 2001, 2003). Certainly this is the case for men who are leaders in the HIV/AIDS movement, who are very networked with ASOs, who are HIV-positive and who have been in longer-term serovariant relationships—the perspectives which dominate in the literature. And indeed, some participants in this study had very high levels of knowledge on HIV prevention, due in part to their keen interest in the topic or extreme anxiety over seroconversion which kept them researching the latest trends in the field. However, not all HIV-negative gay men are HIV prevention experts and sometimes an incredible amount of learning occurs when a social actor is confronting experiential serostatus uncertainty. This dynamic plays a significant role in how HIV prevention information will be processed.

Chris' story here is also a prime example of how someone less connected to the HIV epistemic community—someone who quite literally does not know much about the fundamentals of HIV prevention—is still affected by the uncertainties generated by the HIV prevention field. The public health nurse, operating through the ambiguity of knowledge and education on oral sex risk, has contacted Chris to inform him of his at-risk status, thus producing risk aversion by aggravating anxiety. While Chris may not be well connected to the HIV prevention field, the uncertainties of the field—both epistemic and social and political—have come to affect him through this governing practice known as contact tracing, fundamentally shaping his risk disposition. In short, uncertainty has found him.

From the interview data we can notice a stark difference between situations where a social actor was clearly aware of the risks associated with certain behaviours and made a conscientious decision to accept serostatus uncertainty, and those situations where a social actor was not entirely aware of the risks associated with particular behaviours and was informed by external sources that they were now at-risk. In the first instance, the social actor has more agency over his serostatus uncertainty. In the second instance, others are governing him through serostatus uncertainty, which can be a disempowering experience.

For example, Chris did not know that oral sex posed some degree of risk for HIV. His limited HIV prevention knowledge was that condoms should be used for intercourse. Thus he learned about the risks associated with oral sex through public health contact tracing *after* he already had unprotected fellatio. While oral sex was communicated to him as being a "low risk," this information was being processed during an extremely stressful interaction with a nurse—that is, during an "HIV scare." The context transformed oral sex from a "low risk" act to a "high risk" act. The biomedical statistical probability of HIV transmission in this situation mattered little compared to the fact that Chris was now facing serostatus uncertainty.

Indeed, many of the men interviewed, including those who are extremely risk averse, those who are more risk tolerant and those who have higher levels of knowledge about HIV prevention, are confused about the risks associated with oral sex.

> Bradley: But, so like, I guess where I feel like less able to talk about it, or less, or whatever, is like oral sex, and I just feel like, that this comes up like over and over and over again…

Some of the participants accepted the ambiguity of the term "low risk," some simply considered performing oral sex on a partner of an unknown serostatus to be a risk act and some wanted clarity over the issue. It is not standard practice for gay men to use condoms for oral sex and thus those who are concerned about the risks of HIV and other STIs through oral sex either have to accept the risks or go against cultural standards. With unprotected anal intercourse with a casual partner who has an unknown or opposite HIV status, the risks are somewhat clear. With oral sex, the risks are far more ambiguous. Thus, fundamentally, how social actors understand the threats posed by oral sex are governed by their tolerance to serostatus uncertainty, by their ability to manage the ambiguity that this sex act poses. In his assessment of sexual risk-taking in France, Girard (2013) has offered similar conclusions, arguing that the residual risks associated with lower risk sexual practices, such as oral sex, can actually create moments of tremendous confusion. Ultimately those who accept the risks have to come to some consensus based on their own desires and their interpretation of available expert knowledge.

Beyond oral sex there are many other "basic" pieces of HIV prevention knowledge that gay men learn through experiential serostatus uncertainty. Some participants found out about how to get tested, the window period to confirm an HIV-negative result, the length of the window period after an exposure to HIV to get on PEP and the heightened risk associated with the undiagnosed during their at-risk moments. Many were confused about the risk differences between being the bottom or the top—and what those statistical differences actually meant for their own risk levels. A few participants discussed learning about undetectable viral load during a sexual moment where a partner informed them that they were HIV-positive. For some, like Paul, an interest in having sex overrode a need to fully understand the concept. For others, like Ben, the information was too complex to process and sex had to be halted. I will investigate the issues of undetectability and disclosure more closely in the next chapter.

The limited HIV prevention knowledge that many of these men had prior to confronting serostatus uncertainty is due in part to the inadequate sexual education the post-AIDS generation received when growing up. Only two participants spoke about having received adequate HIV prevention education in their formative years. Fortunately, both Ontario and Québec are implementing more progressive safer sex education in schools that could address some of these knowledge gaps (Ministry of Education, 2015; Richer, 2015). However, the young gay men who grew up and came out in the 90s and throughout the early 2000s received minimal HIV prevention education and practically zero safer sex information relevant for gay men until they were already having sex.

HIV education in Canada has largely been designed to reach at-risk communities. However, for many of these young men, sexual relations precede substantial participation in gay male communities, cultural events or attendance in hyper sexualised milieus. The more the research participants participated in such spaces and sought routine HIV testing, the more they learned about the variable nuances of HIV prevention. However, the less linked up the research participants initially were to these spaces, the less likely they were to know about the specifics of HIV prevention such as the window period, the prevalence of syphilis, undetectable viral load, or the risks associated with oral sex, until they were already in some sort of crisis point—until their first "HIV scare."

In terms of sexual health literacy, from the collected data there appears to be significant difference between participants, with some being hyper-literate and some having only basic levels of knowledge, depending on their proximity to the community spaces where most HIV education is occurring. Chris' narrative is an example of this dynamic. Though he was dating gay men, he was not frequently participating in milieus where much sexual education was happening like bathhouses, which is why he was unaware of some of the fundamentals of prevention.

Yet, awareness is not everything. Even when social actors are aware of the risks associated with particular behaviours like oral sex or reduced risk from topping (strategic positioning), they still have to determine their tolerance to risk, their comfort with serostatus uncertainty. If social actors are currently in a crisis period or have just acknowledged that they are at-risk, they may be more sceptical of new knowledge on risk reduction like what the "low" means in "low risk." Here is a comment from Francis who is refusing to believe his friends who are informing him that he was at a lower risk after a condom break situation since he was the topping (penetrative) partner.

> Francis: And all these people [were saying] like you were the top, and the people who are [the] top have supposedly less chances to be contaminated with the virus, but I was [the] top, but I mean.… Like if there's a risk, there was a risk and the

> condom broke. That’s why I know this, and I don’t give a shit about it’s, I was topping so I’m okay…. I wouldn’t believe that.

While social actors like Francis are able to logically understand why being the insertive partner in anal intercourse would reduce risk, a feeling of being disempowered during an experience of serostatus uncertainly plays a fundamental role in shaping how a social actor processes and accepts (or in this case rejects) new knowledge about risk reduction. The anxiety associated with this experience of serostatus uncertainty, which was significantly prompted by the fact that he *unintentionally* had unprotected anal sex and thus felt a depleted sense of agency and control, shaped his interpretation of risk. Knowledge can help alleviate anxiety, but anxiety can also fundamentally shape how social actors interpret knowledge.

To summarise, experiences of serostatus uncertainty become key moments for one to reflect on their current risk disposition, determining if they need to alter their orientation to HIV risk going forward. Gay men may either assess themselves as being at-risk or may be prompted by external sources to consider their serostatus uncertainty. The more agency a social actor has over this process of risk assessment, the more tolerant he will be to addressing his serostatus uncertainty. The less agency a social actor has over this process of risk assessment, the more risk averse he will tend to be—he is being governed by others and feels somewhat disempowered. External risk assessment increases feelings of anxiety, reduces a felt sense of agency, and thus reduces a comfort with serostatus uncertainty.

For some HIV-negative gay men, a significant amount of learning about HIV prevention occurs after external sources have prompted them to assess themselves as being at-risk, which plays a fundamental role in altering how that information is received and accepted. A moment of experiential serostatus uncertainty always causes a social actor to reflect on his risk disposition by forcing him to consider what he knows or does not know about contemporary HIV risk management practices. By learning more about HIV (by reading the map) a social actor is changing his risk disposition, changing how he understands HIV risk (an understanding that can no doubt influence future sexual practice). However, the new HIV prevention knowledge he consumes may either be used to placate his fears and develop risk tolerance. Or, if a social actor is experiencing tremendous anxiety, the knowledge he consumes will be interpreted through this felt lack of agency, thus only reaffirming his risk aversion. “Low risk” simply becomes a risk.

Put differently, the personal experience of anxiety can aggrandise epistemic uncertainty. As discussed in chapters two to four, there is a tremendous amount of epistemic uncertainty with HIV prevention research and considerable expert disagreement in the field, leading to ambiguous governing practices (e.g. "low risk" categories). Those at-risk have to make sense of this knowledge and its epistemic uncertainties. If one is feeling burdened by serostatus uncertainty, they may use this information (like Francis above) to reconfirm their at-risk status and their dislike of serostatus uncertainty, rather than using it to placate their mounting anxiety.

Whether a social actor is risk tolerant or risk averse, after he has been assessed as being at-risk (either by internal or external forces), he must now consider how he will manage his serostatus uncertainty. In order to do this, he must access health services, the next set of risk management practices I shall explore.

Navigating Institutions: Health Services and the State

When a social actor feels that he is at-risk and has decided that he needs some clarity over his serostatus—he is no longer comfortable living with serostatus uncertainty or a new situation in his life has prompted him to seek clarity (e.g. a new romantic relationship)—he may request an HIV test. This is a process, which, for some, can be both emotionally tasking and pragmatically difficult. Indeed, managing serostatus uncertainty takes effort.

> Fred: Yeah. It [i.e. getting HIV testing] does take effort. You have to get up and get out of the house and plan it and there's emotional involvement in it. So there's energy involved.

Regardless of the likelihood of seroconversion, those who are uncertain about their HIV statuses must, at a minimum, schedule and attend appointments to get an HIV test. Millions of people attend medical appointments to monitor one health issue or another each day. So in some sense, this work is rather mundane. And from the perspective of HIV-positive gay men who routinely attend medical appointments, the amount of work HIV-negative men must do to be aware of their HIV statuses would seem minor. However, Fred's comment about the physical and emotional effort it takes to get tested does remind us that HIV testing is not, from the perspective of most HIV-negative gay men, a completely mundane task. It is a very particular form of health maintenance that often requires gay men to do some logistical work, some institutional navigation and to be emotionally and mentally prepared to receive an HIV-positive diagnosis.

I wish not to exaggerate the level of effort involved. As we saw above with Tim's comments, some gay men have a routine that works well for them and see no real barriers to accessing care. However, recognizing the fact that seeking confirmation about one's serostatus takes effort and that thousands of HIV-negative gay men do so annually on their own accord, regardless of the degree of risk taken, confirms how seriously gay men take their sexual health and HIV. This serves as an important reminder in a research field which is nearly constantly problematizing the behaviour of gay men in one way or another and moralising the undiagnosed as vectors of risk.

Nonetheless, getting tested and receiving sexual health and HIV specific services is not always a straightforward affair. First, those at-risk have to decide whether or not they will get tested with their family doctor, a local walk-in clinic or at a specialized sexual health clinic (see chapter two for review). For those privileged enough to have family doctors, this can be an easy option, especially if one is already out as gay to his physician. HIV tests can just be added on to other routine blood work. However, one will receive limited to no counseling, it will take several weeks to confirm a result and the communication of results may be confusing (i.e. booking a follow-up appointment or assuming no callback means an HIV-negative result). The process is also not anonymous, with test results being sent automatically to public health registries and a documentation of HIV and STI testing permanently remaining on one's medical record.

Those seeking HIV tests from walk-in clinics may have different experiences than those with established relations with a physician. Let's take Jake's example.

> Jake: It was kind of awful to be honest. I went to just a clinic because I don't have a family doctor, so I just went to a clinic in [small Ontario town]. And I actually went in because I was having allergies and I just wanted to get prescribed a nasal spray. And I was just like, you know what, I'm here, I might as well just ask for [HIV] testing at the same time.
>
> And when I asked the doctor, he got very defensive. "Well, why do you need to be tested? Are you having unsafe sex, and na na na." Like, he was just very defensive about it and made me feel really awkward. So that kind of was like, oh, okay, like... umm, and then so he filled out the forms, huffing and puffing, like it was like a big disservice to ask to be tested.

> So he filled out the forms and then he gave them to me to give to the secretary because she had to fill out a few more things. And there was a spot where it was like, I don't know, transmission, or something about [me] being [sexually involved] with a man or a woman, and he checked off [with a] man. And then she was like, "I just want to make sure that he didn't screw this up. That's right, right?" And I was like, "yeah, that's right." Is that the first time you're seeing that? Like it was just so awkward, I don't know.

Multiple things are going on in Jake's narrative. First, we have Jake's lack of access to a family doctor. Second, we have him having to justify his reasoning for seeking an HIV test to an unimpressed physician, which is somewhat ironic considering how much public health authorities work to encourage sexually active gay men to seek HIV tests regardless of their risk levels. And third, Jake has to re-assert his sexual orientation to a confused medical assistant. These issues can be partially explained by Jake's physical location in a rural area of Ontario where access to LGBTQ friendly health services is harder to come by than in major cosmopolitan centres (Coleman, 2014; Zanin, 2009). This issue came up in other interviews. For instance, Stephen had not been tested for HIV in a while because he was living back at home in a small town in New Brunswick where services were limited and where he lacked the social support he needed to deal with a potential HIV diagnosis. He waited until he moved to Montréal to get tested.

In contrast to rural settings, sexual health clinics in urban centres like Montréal and Toronto offer specialized services and support that can make testing far easier. However, even with a diversity of options available, many gay men still experience some access issues or find the process of HIV and STI testing cumbersome. Some services require men to pay fees for testing, particularly if one is not covered under a provincial health plan.

> Kyle: Yeah, I've been tested twice [in Montréal]. I found it extremely expensive and it uses a lot of time. Extremely stressing and you get judged all the way.

Sometimes waiting for the results, even from these specialized clinics, can take a lot of time.

> Terry: Uhh, but I just got tested at L'Actuel [in Montréal] and I'm waiting for the results, which will be like two weeks, no, another week? Yeah. They're super slow.

Booking sexual health appointments can be extremely confusing.

> Alexander: The whole rapid testing is great. In Montréal it was a lot easier. L'Actuel was great just because they were always available. They were open all the time and open late and worked with my schedule. The Hassle Free in Toronto is, I'm sorry, a hassle to get to. Men's clinics, women's clinics from 1:00 to 4:00, make an appointment six weeks in advance, honk, fuck off.

Alexander is not the only one with such strong opinions. Nick expressed similar concerns adding the length of the process, which can be a challenge for those who must work.

> Nick: Like, in Vancouver, HIV testing is done on a walk-in basis and there's no waiting. Whereas, here [in Toronto] at the Hassle Free, like you have to make an appointment, it takes for-fucking-ever to get an appointment, or you can go on the one-day-a-week where they do a finger prick test, the instant test, and it takes, like, five hours, four hours. It's crazy! Like, the longest I've ever waited for an HIV test in Vancouver was half an hour.

Sebastian makes similar points but also discusses the challenges of location and commute.

> Sebastian: Oh, okay. No, the Toronto service is, I mean, it's hard to get appointments. Um, comparatively, like, they have the walk-in services for STDs and STIs, um but for HIV, you know you have to make an appointment, and there's really only, in the Toronto area, that provides that type of service, there's really only the Hassle Free that I knew of at the time that I was living here. Maybe now there's more, but back then, there was only that one. It's in the [Gay] Village, so like, if you don't work near the Village, or live near the Village, it's obviously hard to get to sometimes. And their hours are not like super, you know, late, or anything like that.

Already noted in these comments are men making comparisons between their experiences in different Canadian cities. Indeed, when young gay men move to different cities (normally for school or work), part of their groundwork settling in includes figuring out what the most practical way to get HIV and STI testing will be. This can prove onerous at first, even for Canadian citizens. For example, Ben moved to Québec from western Canada and had to figure out the process of getting tested. While eventually he found a system that worked for him, the initial set-up posed some challenges.

> Ben: Um, L'Actuel is good. Uh, I feel like if you don't have a Québec health card, which is a residency issue, automatically, like, I know so many students that have to

> come to [Montréal-based university] to get tested for everything and to me, that's really weird. Um, when I first moved here, I did not have [Québec] residency and I remember I wanted to go get an STI screening. Why? Was I symptomatic? I don't remember.
>
> Regardless, I was trying to go to clinics on Ste. Catherine and there was nothing available. Nothing possible. Nothing! Some woman told me to stop taking drugs, and I was like, "You're a nurse?" Um, and then I ended up going to the emergency room of the hospital and that was the easiest, most efficient way of getting an STI screening. And I just found that to be so bizarre.

The challenge of finding the ideal testing site is even more strenuous for international students and those without Canadian citizenship or permanent residency status.

> Karun: But then as an international student, I mean, it's a little difficult in the sense that you can't go to the local clinics, to the CLSC. You have to go to the university and get it done. You need a special healthcare card, [the] RAMQ. You can't just go in and do it.

Karun's narrative demonstrates some of the logistical effort that goes into managing serostatus uncertainty. When he was concerned about his HIV status, Karun called Info-Santé—a health service line in Québec—who told him about a sexual health clinic where he could go get tested. However, the first day he went there it was closed. When he went the next day to get tested the clinic was open, but he was denied an HIV test because he did not have a RAMQ card (i.e. a provincial health card). The fact that gay men are sometimes denied HIV testing isn't an issue we often read about in biomedical and public health research.

From Karun's story, it is clear that a lack of a permanent residency or Canadian citizenship status can produce barriers to health care services. However, the issue is even more complex. All of the participants without permanent Canadian citizenship discussed their concerns over becoming HIV-positive, fearing that it would prevent them from achieving citizenship. Since 2002 an HIV test has been made a mandatory part of the permanent residency process in Canada (Bisaillon, 2011). In some instances this concern prevented these gay men from seeking HIV tests altogether.

> Kyle: Um, it's because I'm, ah, I'm a migrant and ah, and I am in the process of migrating. And I'm also under a lot of stress. And it's like, it is difficult to explain,

> but being tested for me is like extremely, extremely stressing. And I would rather not, I would rather not be tested, to undergo the stress. I really can't deal with that right now.

Francis, Michael and Jeremy were also very concerned with what their potential seroconversions might do to their applications for permanent residency. Terry, a Canadian citizen, was dating Juan, an HIV-positive man without Canadian citizenship. This put pressure on the relationship since Terry had to pay for some of Juan's health services (i.e. his viral load testing) and because of Juan's limited financial resources and lack of social capital within Canada, the two felt that they would need to get married in order for Juan to stay in Canada. This expectation put a lot of strain on their relationship in its initial stages and the two eventually broke-up. Though Terry admits that his lingering fear of seroconversion also played a role in the breakup.

Returning back to Karun's story, we can see the ways in which a precarious citizenship status can dramatically shift perceptions of serostatus uncertainty and cause extreme risk aversion. While Karun was only engaging in oral sex with multiple partners (some of whom he later discovered were in fact HIV-positive), his concern over HIV risk amplified when he started to apply for permanent residency and realized that his HIV status would be part of the process. It was also during this time period that Karun learned that HIV could be transmitted through oral sex (once again we see a hyper concern based on residual risk versus higher risk sexual activity). He also contracted an STI and suffered several symptoms that could be indicative of acute infection. He began to panic, fearing that an HIV-positive diagnosis would lead to a deportation back to a homophobic climate and disapproving parents. Thus concerns over his immigration status shifted a low risk act into a high risk act and caused Karun to become *extremely risk averse*. He could not tolerant any uncertainty over his serostatus.

Throughout this process, Karun compulsively started to go back online, reviewing former lovers' dating profiles to see what they had listed about their HIV statuses. He went to get tested for HIV frequently and suffered from a crippling bout of anxiety and depression. The search for past potential HIV-positive partners became obsessive and Karun developed a very strong fear of HIV-positive men and of gay men more generally. His risk aversion thus also led to him serosorting and reproducing HIV stigma (a topic I will explore more thoroughly in the next chapter). One of his HIV-negative sexual partners reprimanded him severely for not having gotten tested earlier, thus corroding their friendship. In short, due to serostatus uncertainty, all the aspects of Karun's well-being were significantly eroded—his physical, mental, emotional, spiritual and sexual health, as well as his sense of social connectedness. Though the statistical probability of HIV transmission remained low, even considering instances of serovariant sex, Karun's anxieties were still based on reasonable interpretations of evidence and on the fundamental value he placed on achieving Canadian citizenship. This was his primary goal that he now saw as being jeopardized as a result of residual degrees of sexual risk-taking.

Karun admits, however, that his perspective on HIV risk and serovariant sex (an issue I will address more closely in the next chapter) might shift after he finds out about his permanent residency.

> Karun: Hopefully, I'm hoping that my permanent residence will arrive within the next month or so.
>
> Interviewer: Do you think that's going to change [things]?
>
> Karun: I think it would, I think it would. I'd feel a lot more comfortable and secure. I could go back to school. I could do more things with my life. Like, I could access scholarships that were earlier just unavailable to me. It may make me a little happier in my life. And I feel once I'm happier and gained some more control, I'd be a lot more open to, in my sex life I feel.
>
> And if an HIV-positive person were to approach me and tell me that this is who I am and these are the risks involved, I'd be a lot more open to listening to that person than right now. Right now, if someone were HIV-positive and they were to tell me, and they'd say "I really would like to have sex with you even though I'm undetectable so there would no problem, blah blah blah," I just wouldn't listen at this stage.

In other words, Karun is interpreting the biomedical risks associated with serovariant sex (in the context of an HIV-positive partner having achieved an undetectable viral load) through his risk aversion, which is fuelled directly by his precarious citizenship status. The social context is shaping the interpretation of the biomedical. A social actor's risk disposition is not determined strictly by what he knows about HIV risk management, but also by a complicated mélange of social and political factors such as access to health services and citizenship status. Karun's immigration status significantly shapes his relationship to HIV risk management.

Some clarification is needed to make sense of these HIV-negative men's concerns over immigration. According to the current policy, being HIV-positive does not, in and of itself, prevent someone from achieving Canadian citizenship. Under immigration law HIV is not officially considered to be a threat to public health and safety (Bisaillon, 2011). However, the health status of a social actor, including one's HIV status, does factor into the citizenship process, with those positioned as putting an "excessive strain" on Canadian health services facing a potential rejection. Thus some HIV-positive applicants have been denied permanent residency (Bisaillon, 2011).

To simplify a rather complex issue, being HIV-positive does not deny one the ability to achieve Canadian citizenship, but it does not help one through this process. The HIV-negative men interviewed for this study *may* have exaggerated what a positive diagnosis would mean for their immigration process. However, I would argue that this exaggeration and these men's corresponding aversion to serostatus uncertainty, is a direct response to a rather ambiguous set of policies that show a clear preference for applicants with fewer health issues and the financial capital to address any potential health concerns, than for those applicants with pre-existing health conditions and limited financial resources to address their health. Once again, with serostatus uncertainty social actors are not just confronting a potential life long illness that can erode their physical health. They must also consider how their social and economic stability may be threatened by HIV infection and whether or not they, as young men currently building careers and social networks, have the necessary material foundations to confront such a challenge. That this theme on the relationship between immigration and HIV status came up routinely in the interviews indicates that this process indeed confuses some young gay men seeking permanent residency.

In summary, once a social actor has assessed himself as being at-risk, he must eventually access health services to get tested. For some, this may be a pretty straightforward experience, while for others, such as those living in rural areas or those who do not have appropriate provincial health documents, the situation may be even more complex. Thus an HIV-negative gay man's relationship to HIV is not determined exclusively by his sexual risk-taking. His risk disposition is also determined by his particular relationship to available health resources, which may not be as accessible as would expect to be the case in Canada. The more complex or difficult the process of seeking health care services, the more feelings of anxiety will likely be aggrandised as a social actor feels less capable of implementing control, thus fostering aversion to serostatus uncertainty. Another pressing health care access issue affecting anxiety levels that came up routinely in the interviews relates to PEP, the topic of the next section.

PEP Access

The experience of taking PEP (*post*-exposure prophylaxis) is fundamental to how some social actors process risk management and build a tolerance or aversion to serostatus uncertainty going forward (see too, Körner, Hendry, & Kippax, 2005a, 2005b). PEP can drastically alter a social actor's risk disposition, permanently and completely transforming how he relates to HIV risk and sex. It is the epitome of the "HIV scare."

Let us go through the process step by step. First, some high risk event must occur to warrant a PEP prescription. In some instances participants talked about condom breaks, in other instances unprotected anal sex was planned and in some instances barebacking was an accident. Whatever the particular event, an at-risk social actor generally has 72 hours from the time of exposure to the virus to decide whether or not to start the medication. With the clock ticking, this decision-making period can be a very stressful time. This is especially the case if one has a particularly full schedule with work or school (e.g. exam period), since the side effects to PEP can be rather severe. For example, Jonathan, a dancer, had an upcoming project that required him to be in top physical shape and thus he had to decide whether taking PEP was truly worth it.

> Jonathan: I was fucking panicking and you… and then so I just rambled on for the entire day and at night I called a dancer friend of mine, who is HIV-positive but [who has] had it for like 25 years. And, um, and I was like, "okay, what should I do?" And he was like, "Um, you should take the pills, cause one month is nothing compared to a lifetime." And he was just like, "If I had, if the treatment [i.e. PEP] was offered at the point that I had it, like, that would have changed my entire life. So, like, you know? Deal with the fucking pills for a month, and that's it, you know?"

Then there is the issue of getting a prescription for PEP. The same complexities of access for HIV testing apply to PEP. However, the challenges can be even more pronounced. Without medical insurance PEP can cost, on average, $900. This is a lot of money in general, but certainly this qualifies as a large expense for young men who are still in school and may only be working part-time, if at all. Though Matthew was a Québec resident and a Canadian citizen, he had not opted into the Québec Health Care plan that year. Since he was only a part-time student he was also not covered under his university's student health care plan, nor did his parents have health insurance that would cover him. He thus had to pay over $1000 for the treatment. Francis was unemployed when he needed PEP and had no health insurance plan. He too had to pay for his prescription out of pocket. Even though Québec normally covers PEP costs, the specific circumstances these social actors found themselves in made them ineligible for support for preventative drugs. Matthew had simply not been aware that he had to file additional paperwork to activate provincial health care coverage. Again, these are the logistical intricacies that are ignored or erased in epidemiological research on gay men focusing on motivations for sexual risk-taking. Yet these logistical are absolutely essential to the management of serostatus uncertainty.

To avoid the exorbitant costs of PEP, some men develop fairly elaborate tales to tell healthcare providers. In Toronto, Terry told the nurses in the hospital emergency room that he had accidently pricked himself with a used needle at his HIV-positive friend's house. In reality, Terry's hookup had not used a condom during anal sex where Terry bottomed. There was a miscommunication where Terry believed that a condom was being used and the hookup believed that Terry knew it wasn't. It was thus an instance of *unintentional* higher risk sex. Since PEP can be given free of charge for those who are exposed to HIV from needle pricks (this policy aims to protect those who are exposed occupationally, like nurses) and is not given free to those exposed to HIV through consensual sex, Terry reframed his risk story to receive free medication.

Nick also had to negotiate with nurses and doctors in a Toronto emergency room after a condom rupture with a hookup. However, because Nick had passed the 24-hour window period after his potential exposure, he was refused a PEP prescription. Normally the window period is 72 hours, but the hospital he went to in Toronto had an internal policy that a PEP regime is ineffective after 24 hours, which was based on their interpretation of available evidence. We may also wonder if the fact that he was the topping partner in this situation played a role in the doctor's decision here, prompting us to consider what qualifies as enough risk to warrant a PEP prescription and who has the right to determine this (i.e. the at-risk social actor or medical experts). Regardless, that a gay man was denied access to PEP within a 72 hour time frame after an instance of unprotected anal sex is somewhat disconcerting, to put it mildly. Nick did not seroconvert, but he did contract gonorrhea from the sexual encounter in question.

This situation also demonstrates the interplay between the various forms of uncertainty and the lack of a stabilising point in the epidemic. Epistemic uncertainties associated with the efficacy of PEP regimes have led to the emergence of different governing practices controlling access to PEP. Social actors who are unaware of these different policies must then confront the experience of serostatus uncertainty, a dimension of experiential uncertainty, that is further complicated through a failed negotiation with medical professionals. Under conditions of uncertainty, knowledge production and governing practices are ambiguous and conflicting, thus amplifying the experiential uncertainty associated with the management of HIV risk.

For those able to get a PEP prescription, the next step is taking the medicine every day for a month, with no certainty that the medicine will actually prevent seroconversion.

> Jonathan: And so, I took them [i.e. the pills] at noon every day from that point for a month. And I had diarrhea like never before. And diarrhea [that was] so acid[ic] that it, um, ripped open my anus and ah, like that was the worst part, obviously. And so, I went to the pharmacist. She gave me a cream that did not work so I had to go back to the clinic and they gave me um, another cream, which worked terrifically.
>
> Um, but the entire thing was, like, I'm not kidding, I was going to the bathroom and spending fifteen minutes on it and then I would spend ten minutes in bed like curled up cause it was like so painful. Just like to, you know, like it was crazy.

Matthew, Francis and Terry experienced harsh side effects as well. Matthew, who was ashamed of his sexual risk-taking, decided to suffer through the PEP experience without informing any of his family and friends. Indeed, because many of these young men are either living independently away from their families or do not have permanent partners, they often suffer through the PEP experience alone, unless they choose to reach out to understanding peers. The side effects of PEP were so severe for Terry that he decided to stop taking the medication after a couple of days, thus just accepting the possibility for seroconversion. Kyle refused to take PEP despite being at a high risk because of the side effects.

The process of going through such a harsh PEP episode played a key role in making Jonathan extremely risk averse and serophobic for a time, leading to a long period of him being very anxious about having sex again and becoming greatly distrustful of HIV-positive men. While PEP is a potentially useful tool for those in crisis, the entire PEP experience is a painful, onerous, expensive and intimidating one that tends to (even if only temporarily) increase risk aversion and certainly produces a lot of shame and guilt among those who spend a month in physical pain contemplating the sexual risks they have taken. PEP can help prevent HIV infection, but it can greatly affect one's well-being after a month of agony that can permanently influence how one thinks about sex. While taking PEP is not a typical or necessary step among all gay men addressing serostatus uncertainty, it is demonstrative of the effort some social actors go to maintain a negative serostatus.

In terms of risk disposition, taking PEP is a very explicit mode of experiential serostatus uncertainty where HIV-negative gay men will quite actively reflect on the HIV prevention landscape and come to assess their tolerance to serostatus uncertainty. Depending on the social actor and the ease by which he is able to access PEP and physically tolerate the drug regime, either minimal or substantial changes to his sexual practices may occur going forward as he aims to prevent ever having to take PEP again. I will address the specific sexual components of sexual practice in the coming section, after briefly summarizing my review of health maintenance and institutional navigation.

Health Maintenance and Navigating Institutions: Conclusion

In part two of this chapter, I have been examining how health maintenance and institutional navigation affect risk disposition. Once a social actor has assessed himself as being at-risk, he must then interact with health services and possibly with different governmental institutions as an at-risk subject. This particular experience will alter how he comes to understand and relate to HIV risk management—that is, his risk disposition—thus shaping the risk management decisions he makes going forward (a dynamic that will become even clearer in the next section on sexual practice). I have argued that the more favourable the social conditions are for accessing health care and navigating governmental institutions, the more risk tolerant a social actor will be. Favourable social conditions help a social actor feel more in control and confident when facing uncertainty; they help to alleviate anxiety. Conversely, the less favourable the social conditions are for accessing health care and navigating institutions, the more risk averse a social actor will be going forward. Unfavourable social conditions reduce a social actor's sense of agency; they increase anxiety and make a social actor feel more vulnerable. Reflecting on his risk tolerance levels during an experience of serostatus uncertainty, a social actor will then have to determine how he would like to proceed going forward.

It is revealing that we are encountering men who are being denied health services, are forced to pay for basic health services, or who have to explain to judgmental medical authorities their reason for seeking health services. These are topics that do not usually appear in the ruling forms of research discussed in chapter three. Mainstream HIV prevention science is interested in tracking the number of risk events (risk surveillance) and attributing certain degrees of risk to sex acts (risk assessment research) and understanding the motivating factors behind sexual risk-taking (risk factor research). The actual work and struggles that social actors must perform to manage serostatus uncertainty in an ongoing fashion and to make sense of the ambiguity associated with prevention practice during the transition to the biomedical era of HIV prevention, is often minimised or ignored (even if unintentionally). Ruling forms of knowledge on HIV prevention try to trace a direct relationship between biomedical knowledge and sexual behaviour, but in so doing they often ignore examining the social conditions that orient gay men to HIV prevention knowledge and sexual behaviour differently.

Arguing that gay men in Canadian urban centres fundamentally lack access to sexual health services would be inaccurate. And assuming that medical services must be extremely accommodating and flawless in their approach for them to be effective is also erroneous—no system will be perfect. Rather, the argument being put forward here, is that assessing and responding to one's serostatus uncertainty takes effort—it takes time, energy and, sometimes, financial resources.[27] For some, it can be a very confusing and highly stressful situation, with a social actor feeling uncertain about the best way to proceed. Once a social actor has figured out where and how to get services, the effort is reduced—one simply just repeats the process. Once a social actor understands and accepts his risk disposition thoroughly, the process of managing one's serostatus becomes, if still inconvenient, bearable.

However, when one moves to a new city, is moving around across the country or world, lacks proper provincial health insurance (perhaps because they have simply failed to fill out a form at the beginning of the school year) and has not yet developed rapport with a physician, the initial work of getting tested can be onerous. The more onerous these experiences are, the more stressful they are for those experiencing serostatus uncertainty. Being rejected for an HIV test, waiting hours for a test, getting judged by a nurse or doctor, finding out that one lacks the proper

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[27] See too Mykhalovskiy's and Smith's (1994) report *Hooking up to Social Services*, an early IE project that discusses these logistical challenges, particularly from the perspective of those living with HIV/AIDS in the early 1990s.

paper work, or having your Canadian citizenship claims potentially rest on your serostatus, can all be unsettling for someone who is already trying to come to terms with the fact that he may be receiving an HIV-positive diagnosis. This is especially the case among men who decide to take PEP, which can be a fairly distressing experience.

Thus the issue is not that Canada does not have governing practices in place to help gay men manage serostatus uncertainty, but that the way in which social actors actually engage with these governing practices in real life is exceptionally more complicated. Duchesne (2016) refers to this dynamic as *policy encounters*, arguing that closely analysing social actors' interactions with various policies provides us with a very different view of the social world than just reflecting on the policies themselves. Québec and Ontario do have sexual health services, do offer PEP for free within a 72-hour time frame (at least in Québec), cover (most of) the prescription costs for HIV-positive men who lack independent health insurance, have had some forms of safer sex education for decades, and will not automatically deport someone who has recently found out that they are HIV-positive. However, due to policy loopholes and the particular circumstances a social actor finds himself in at a specific moment in time, this may not be how he actually *experiences* and understands these governing practices. The challenges that social actors face in navigating such institutional forces (the uniqueness of their own policy encounters) are absolutely essential for understanding how these men relate to HIV risk management and implement their agency. The institutional dimensions of risk management are foundational elements to the creation and evolution of a social actor's risk disposition. In other words, in order to understand sexual practice thoroughly (as we will in a moment), we cannot just focus on sexual behaviour. We need to begin by considering the broader institutional contexts that shape how gay men think about sex and risk management—including these unique encounters with health and governmental policies.

By continually navigating health services and governmental institutions, HIV-negative gay men are implementing their agency in the interest of securing their well-being. They are making deliberate decisions to manage their serostatus uncertainty. Moreover, they are actively reflecting on the HIV landscape and coming to understand and develop their unique risk disposition. During moments of experiential serostatus uncertainty gay men come to learn more about HIV prevention and HIV related governing practices and they come to establish whether or not they can manage the degree of serostatus uncertainty associated with their current sexual practices. If a social actor finds himself to be risk averse, due in part to a response to his experiences with health care systems and governmental bureaucracy, he may seek to alter his sexual practices in the interest of managing his anxiety levels in the future. Understanding these sexual dimensions of risk management and sexual practice is the topic of the next section.

Part Three

Great Sexpectations: Intimacy, Sexual Scripts and the Gay Moral Compass

Risk Disposition and Sexual Practice: Introduction

In this chapter, I have been examining the experiential dimensions of the uncertainty triad by focusing on how social actors establish their risk disposition and how instances of experiential serostatus uncertainty lead to reflexive engagements with the HIV prevention landscape and a consideration of one's tolerance to serostatus uncertainty. I have so far been discussing the ways in which HIV-negative gay men build agency in response to serostatus uncertainty and how various factors—such as barriers to accessing heath care—come to inhibit or cultivate tolerance to serostatus uncertainty over time. Another core element of a social actor's risk disposition involves understanding how gay men come to moralise experiences of serostatus uncertainty, which means paying close attention to the intimate and sexual dynamics of HIV prevention. In other words, to understand how gay men implement agency and secure their well-being in response to serostatus uncertainty, we must also examine the sexual and intimate dimensions of sexual practice.

One of the principal conclusions drawn from the interviews is that if the sex acts or intimate relationships that have put a social actor at-risk (to whatever degree) are unambiguously valued by a social actor, then any related serostatus uncertainty will be perceived as more manageable. *Certainty over one's sexual choices makes serostatus uncertainty more tolerable.* When a social actor is ambivalent about his motivations for seeking a particular type of sexual experience or is wary of the specific circumstances of a sexual experience, the serostatus uncertainty associated with that experience could become perceived and moralised in a more negative fashion. *Uncertainty over one's sexual choices makes serostatus uncertainty less tolerable*. Ambivalent feelings toward specific sexual experiences may be a product of social conflicts, clashing expectations, miscommunications and the breakdown of trust within a sexual or intimate relationship. How social actors set up and respect expectations and boundaries within specific sexual relations also plays a key role in how serostatus uncertainty is interpreted and experienced. Relatedly, the more confidence a social actor has with his sexuality, the more confidence he is likely to feel about addressing any uncertainties and potential negative consequences associated with sex. This reflexivity and confidence is based on an evaluation of his own sexual capacities in relation to broader cultural expectations on gay male sexual behaviour.

In summary, in this chapter I have been developing the concept of risk disposition to make sense of gay men's unique relationships to HIV risk management, which is significantly shaped through their tolerance or aversion to serostatus uncertainty. I am arguing here that part of understanding how gay men interpret their experiences of serostatus uncertainty is based on how they moralise sexuality and evaluate specific sexual exchanges. Thus the significance of serostatus uncertainty must always be contextualised by the specific interpersonal and cultural dimensions where sexual risk is negotiated. Beyond sexual behaviour and an interest in motivations for risk-taking, we must understand the broader dimensions of sexual practice that come to shape how gay men attach meaning to serostatus uncertainty. I shall now examine these various dimensions of sexual practice in detail, first by exploring the role of trust, intimacy and rapport, then sexual confidence and sexual scripts, and finally community location and the (gay) moral compass.

Trust, Intimacy and Rapport

Intimacy and rapport building is an essential element of sexual practice and the specific meanings and moralisations that become associated with sexual behaviour. Thus the intimacy and rapport built between sexual partners that allows them to negotiate and respect sexual boundaries and preferences, even in casual arrangements, plays a fundamental role in how social actors perceive risk and how they respond to serostatus uncertainty. Spencer's narrative is a striking example of this dynamic. Spencer had recently come out of the closet and was beginning to enjoy dating men when he met Dylan at a work related party. Later that evening, after several hours of drinking, the two of them left the party to have sex. They had protected anal sex where Spencer bottomed. A month later, Spencer received a text message from Dylan who had just found out that he was HIV-positive. Dylan was now reaching out to everyone who he was sexually active with since his last HIV test. Spencer initially described this moment as terrifying, especially considering that this was one of the first occasions that he was sexually active with a man. Again, we are seeing that a social actor has been placed in a challenging situation of serostatus uncertainty due to the residual risk associated with safer forms of sex and not due to heightened sexual risk (that is, he did not have unprotected anal sex). However, after evaluating their prevention measures, Spencer came to the conclusion that this was not a high risk case and he eventually calmed down.

Indeed, this story can be viewed as an HIV prevention "success story." By using condoms these two young men prevented the transmission of HIV occurring, in what would otherwise have been a very high risk situation considering Dylan's potentially high viral load at the time of their sexual encounter. Nonetheless, Spencer still claimed that going forward he would try to be more careful. When probed as to why he felt this way, he describes his encounter with Dylan as such:

> Spencer: I guess, cause I was sobering up at that point [i.e. when they started having sex] and he was very adamant and, no, he wasn't forcing me. I'd never let anybody do that, but he was just very, just like, "come on, let's go." Kind of pressuring me, but like, I'm not one to be pressured or whatever, but I guess cause I had been drinking.
>
> Interviewer: So would you say your – I don't want to put words in your mouth – would you say that it was that pressure that sort of rubbed you the wrong way about the event? Cause you associated it with, cause that's why you don't think you were careful?
>
> Spencer: Yeah, uh yeah. I guess it was that and um, yeah I mean. Also, he was kind of condescending, but he was very cocky. Cause he's like, I'm better than you type of thing. Like when I didn't do something to his liking, he would make fun of it. You know what I mean? So it was like, that's it. The point was that it was just not a comfortable experience at all.

Evaluating what constitutes "careful" behaviour in this example has nothing to do with explicit prevention measures, which were in fact implemented correctly and effectively, but with the at-risk social actor's comfort with the sexual experience. Though Spencer was not forced into performing any sex acts against his will, Dylan's teasing of Spencer's sexual inexperience and forceful nature to have anal sex was clearly a disempowering experience—and as I have discussed above, being averse to serostatus uncertainty relates to feelings of powerlessness. It is interesting that Spencer is implying that he was somewhat pressured into a sexual situation that he was not comfortable with, but he is also very explicit that he was not forced into doing anything against his will because he is "not one to be pressured or whatever." Thus we simultaneously see an implicit moralisation of Dylan's sexual forcefulness *and* Spencer's vulnerability to bend to sexual pressures. Indeed, even when expressing critical judgments of his sexual partner, Spencer is also critiquing his own behaviour as not being careful enough. This tendency to blame oneself for producing serostatus uncertainty was quite common across the participants in this study, even when they were also holding their sexual partners accountable.

This situation is nuanced and we should be cautious of jumping to conclusions that this represents some form of sexual misconduct or coercion. What is clear, is that even within the parameters of consensual sex, power dynamics (i.e. the experienced versus the inexperienced partner) and the tricky nature of sexual negotiation during a heated moment (i.e. having anal sex versus oral sex) can shift a social actor's perception so that the sex becomes, not non-consensual *per se*, but uncomfortable. By changing a social actor's degree of comfort with a situation that poses some degree of risk, these subtle dynamics of sexual consent change how the associated serostatus uncertainty is interpreted—what was "technically safe" may be considered to be "less safe" because of how a social actor perceives the event.

Another striking example of how the rapport between partners shifts risk perception is Matthew's story. Matthew is a young man who identifies as a slut and is extremely sex positive. During his interview, he describes two "HIV scares" (his term). In the first scenario, Matthew was having protected sex with Max, a hookup, when the condom broke. Max ejaculated inside Matthew before the two realized what had happened. Max was uncertain about his serostatus since he had recently had unprotected anal sex with other partners, prompting Matthew to consider taking PEP. Over the following 24 hour period, Matthew and Max talked extensively about sexuality and risk and the two went to go get tested together, both receiving HIV-negative results. Though the window period meant that neither could confirm their serostatuses as negative, Matthew decided not to take PEP. That Max had been forthcoming about his serostatus uncertainty and went for an HIV test with Matthew helped to generate a rapport between the two, leading Matthew to feel more comfortable with the situation. He trusted Max and trusted in his own decision to not take PEP. This finding is similar to those offered by Körner, Hendry and Kippax (2005a, 2005b). Social actors sought PEP when they felt out of control and when there were conflicts or vulnerabilities within a relationship. Max offering his support and making Matthew feel more in control of the situation minimised the perceived risks in this context and thus negated the need for PEP. The development of a friendship shifted the meaning associated with this sexual behaviour so that the associated serostatus uncertainty became interpreted as less threatening. In terms of emotion management, by alleviating anxiety through rapport building and intimacy, Max helped Matthew manage his anxieties so that the associated serostatus uncertainty was experienced as less of a problem—at least not one requiring a severe form of risk management like PEP.

Like Spencer and Dylan, the issue here is not about the assessment of biomedical risk; from a biomedical perspective, Matthew was at a high enough risk to warrant PEP and he did actually receive a prescription that he chose not to fill. However, the intimacy developed between the two young men altered Matthew's initial anxieties so that he felt more tolerant to addressing his serostatus uncertainty. It is not that Matthew lacked concern over his HIV status, but that he was more comfortable with the social context that had produced that concern in the first place and thus accepted the serostatus uncertainty that went with it.

In contrast to Matthew's story with Max, Francis also had a condom break with a hookup. In this instance, Francis was the topping partner. At first he was undisturbed by this accident. However, the next day Francis started to panic and went to go get tested for HIV. He contacted his hookup to get tested with him, though the hookup refused, claimed that he was HIV-negative and got angry with Francis for even making such a request.

> Francis: Yeah, he left me alone with this. That's exactly how I felt. He like, [I] wouldn't say he abandoned me, because he was a hookup; so I'd have no emotional attachment to this person. But still, I really thought he left me alone: total lack of compassion.

Though Francis' friends told him that the risks were very low since Francis was the top (the penetrative partner), his hookup's hostile reaction made him feel uneasy about the situation, prompting him to feel at-risk enough to take PEP. In terms of emotion management, by not alleviating anxiety through rapport building and intimacy, Francis' hookup aggravated Francis' anxieties so that the associated serostatus uncertainty was experienced as more of a problem. The experience was a particularly challenging one with severe side effects, as well as immigration and financial concerns (see above). This led to a lot of hostility.

> Francis: I was, how would I describe it? It's a time where you just wait and take the pill [i.e. PEP] and try to quiet your anxiety about this and also you're being bitter, talking a lot about it. I hated this guy [i.e. the hookup]. I really hated [him]. It took me more than I think a year to forgive him. When I would see him at the club afterwards I would like, I wanted to spit on his face. And sometimes we would cross each other at the metro or whatever and I was, sometimes, I was "this close" to go[ing to] talk to him [to] spit on his face.

Francis' comments demonstrate how all-consuming an experience of serostatus uncertainty can be and how anxiety over serostatus uncertainty can blend with other forms of fear, such as anger. While Matthew also experienced great anxiety, the social context helped him to manage this anxiety. For Francis, the lack of perceived compassion from his hookup intensified his anxiety, which blended with anger that also had to be managed, namely through frequent conversations with friends and not, fortunately, through harassment.

What is fascinating about Francis' story is that *safer sex* turned into a potential high risk situation, which he perceived as a risk only after his sexual partner did not display enough sympathy for his concerns. Indeed, the hookup's hostile reaction caused Francis to worry that maybe he was hiding something. This social friction turned into an intense experience of risk management (i.e. PEP) that continued to foster resentment and conflict between these two HIV-negative men. In other words, we see tension arising within gay male social relations that does not involve planned unprotected sex (barebacking) or even serovariant sex—that is, when HIV is not even present. Nonetheless, this conflict arose because it was impossible to claim with certainty that HIV was absent in this sexual relationship and thus Francis had to manage his serostatus uncertainty. Anxious uncertainty breeds conditions for social conflict.

Returning back to Matthew's story, he describes his second "HIV scare" as "emotionally worse" having happened at a "destructive time" in his life where he was "hurting himself." Dealing with a painful break-up and mental health issues (for which he was seeking counselling), Matthew decided to go "fuck the pain away" in a bathhouse. In this instance, Matthew was the penetrative anal sex partner. His sexual partner was more or less anonymous. However, the two had started intercourse without a condom. While Matthew put a condom on eventually, he soon lost his erection. Following the encouragement of his partner, Matthew continued on without a condom until his erection had fully returned. After finishing having sex, Matthew's partner took Matthew's cellphone and wrote a message in the notes section which read "I am positive." Matthew was shocked. He asked his partner why he hadn't told him about his serostatus before, since Matthew would have still have had sex with him, he just would have made sure that he used a condom consistently. His partner informed him that it was a bathhouse and that Matthew should assume that everyone there is HIV-positive. There was no mention of whether or not this HIV-positive man had an undetectable viral load. Matthew scheduled an appointment at the sexual health clinic the next day and this time he decided to go on PEP. Despite suffering some severe side effects from PEP (see above), he mostly kept this experience a secret from friends and family due to incredible shame.

This second example is a stark contrast to Matthew's experiences with Max. Both situations involve casual sex and unprotected anal intercourse. However, whereas Matthew felt more confident in his rationale for having casual sex in the first scenario, he begins his discussion of going to the bathhouse in the second scenario by moralising it in a negative manner; he was not in a good mental space and was using casual sex as a way to overcome feelings of shame and rejection. Importantly, this related to this specific moment and it is not an indication of Matthew's general feelings toward sex, as he remains very sex positive and quite sexually active. Thus regardless of the safety of the sexual practices that occurred in the bathhouse, the experience would have been framed in a negative way, because Matthew was not comfortable with his motivations for finding sex in this particular instance—it was compulsive behaviour to deal with some emotional pain that was not particularly fulfilling.

The situation of non-disclosure at the bathhouse is a dynamic discussed in Adam's work (2005, 2006) already examined in chapter four—social actors coming to hyper-sexualised spaces with different rules of the sexual game can lead to heightened risk-taking. Though the HIV-positive partner argued (logically) that Matthew should expect everyone to be HIV-positive in a bathhouse, that he ended up disclosing his serostatus after sex suggests that he may have been unsure that Matthew was aware of this dynamic. From Matthew's perspective, the situation seemed unfair, especially since the partner had actively encouraged him to remove the condom.

Matthew was also put off by the fact that this partner seemed to show no sympathy for his concerns (just like Francis' hookup described above). In the end, while Matthew was upset with his partner for not informing him about his HIV status earlier, Matthew was principally upset with himself for being in this situation in the first place.

I will return to the very complicated ethical dimensions of HIV status disclosure in the next chapter (as a quick aside, pressing criminal charges was never a consideration for Matthew). For now, what is key to understand is that Matthew had two experiences, both related to casual sex that both put him in a relatively high risk position (from a biomedical standpoint). In one situation, he was comfortable with his reasoning for seeking casual sex and the rapport he built with his sexual partner made him comfortable with the associated serostatus uncertainty. Rapport and intimacy made him risk tolerant. In the second situation, he was uncomfortable with his reasoning for seeking casual sex and had limited to no rapport with his sexual partner, causing him to become uncomfortable with the associated serostatus uncertainty. In this last scenario, we have a usually risk tolerant social actor becoming temporarily risk averse as he struggles to make sense of his own actions and to moralise his behaviour.

It is clear from stories like these that how gay men treat each other as friends, peers and lovers plays a significant if not a defining role in how they interpret risk and respond to serostatus uncertainty. Examination of the data confirms over and over again that intimacy (the rapport, trust, and companionship) shared between men, even in very casual or short-term sexual relations, plays a fundamental role in how men interpret risk (see too, Davis and Flowers, 2011; Flowers et al., 1997; Körner et al., 2005a, 2005b). For instance, Jonathan offers a similar narrative to Matthew's. During a romantic night with a man visiting from out of town whom Jonathan had just met off of Grindr (a hookup app), the two had decided to forgo condoms as a way to get closer to each other. Though initially unsure of this decision, Jonathan remained fairly confident that his partner was telling the truth that he was HIV-negative, until this partner was unresponsive over text on Grindr the next day. This prompted Jonathan to develop doubts that led him to seek a PEP prescription. Again, we notice that it is not solely biomedical assessment that prompts a social actor to assess himself as being at (high) risk. Risk assessment is also based on the evaluation of the intimate bond between sexual partners, even when that bond is more casual and very short term. A single unanswered text message can shift a situation from feeling right to feeling dangerous. As a result of HIV and STIs, sex can make social actors vulnerable to harm and that vulnerability can be unsettling if social actors are not confident in their sexual and intimate relations. One partner suddenly demonstrating a lack of sympathy or interest can shatter trust and break down the confidence in a relationship. In this particular instance, it was later on confirmed that Jonathan's one nightstand was indeed HIV-negative. However, by that point Jonathan had already started taking PEP and was suffering through the severe side effects. Jonathan remained confident in his decision to take PEP because he no longer trusted his lover, despite his serostatus posing him no risk.

The type of relationship also plays a role in how some men interpret risk. For example, soon after taking PEP, Francis started casually dating an HIV-positive man with an undetectable viral load who was much older than him. Due to the risk aversion he developed as a result of his PEP experience, Francis refused to have anal sex and asked that they use condoms for oral sex. This request annoyed his lover and caused tension in their relationship. Francis knew that he was being "extra" cautious, but he thought that it was his right to be this vigilant. When he reached out to his friends to ask about the risks associated with oral sex, they advised him to move on from the relationship since it was only a casual affair and not worth the risk (there was a clear ageist reaction to their relationship as well).

Reflecting on the events later on, Francis feels that he overreacted and feels guilty for having sexually rejected his partner. However, for Francis, this relationship was never meant to be particularly serious or long-term and that structured how he was willing to negotiate safer sex with this lover and the degree of serostatus uncertainty he was willing to accept. As a contrasting story, another research participant, David, started a long-term relationship with an HIV-positive man. Though David was initially quite risk averse, the connection to his lover, along with his lover disclosing his HIV-positive status to him before any risks were taken, played a fundamental role in David's acceptance of entering into a long-term monogamous relationship with an HIV-positive man despite his initial apprehensions.

Thus another key issue affecting tolerance to serostatus uncertainty is monogamy and fidelity. Several of the research participants reported having been cheated on by their ostensibly monogamous boyfriends. Indeed, David was having unprotected sex with his boyfriend Jeff when he found out that Jeff was frequently barebacking with hookups on the side. Jeff actually contracted HIV while David and him were still dating and sleeping together, putting David in a very high risk situation. Mario found out that Carmen, his boyfriend of three years, actually had another boyfriend the entire duration of their relationship without Mario's knowledge. Mario contracted syphilis from Carmen, which caused him to become seriously concerned about HIV risk and to grow strongly risk averse. Chris' boyfriend was beginning to flirt with other men online, prompting Chris to become concerned about his serostatus even though no physical sex with other men had occurred; keep in mind Chris' experiences with public health contact tracing that made him extremely risk averse. When the two broke up, it came to light that Chris' boyfriend had in fact never been tested for HIV, causing Chris even more anxiety.

The major link between all of these stories is that individuals had put their trust in someone and when that trust was broken a sense of being at-risk emerged. The hurt experienced by these men in these situations is complicated by both the heartbreak and the betrayal, as well as the sexual health component (Körner et al., 2005a, 2005b). For all of these men, the ability to trust other men again (including short term partners and partners with whom they would be having protected sex with) was, at least temporarily, ruined:

> David: I think zooming in on maybe the time when, between the phone call when Jeff told me [that he just found out that he was HIV-positive] and then going to the Hassle Free Clinic in the morning, I was definitely a wreck. Yeah. I broke down. I cried. I cried for him. I was very sad for him. I genuinely was. But at the same time, I was terrified for myself.
>
> Um, I'd say it made me question and/or develop a [dis]trust for guys, even in a relationship. Um, just like now, sort of the second time I went through a similar experience, although this time [it] was so much worse. I looked at it as even more of a wakeup call of, you know, like not trusting. This is the way I framed it at the time about like, you know, don't trust anybody like at all with this. Ever. Just never, not ever having unprotected sex again. Um, that was kind of what I was going through and telling myself to just, yeah, never do that again. Never trust myself again.

It is easy to argue from these stories that an interest in monogamy puts gay men at-risk like some of the established literature has suggested (Adam, 2005). However, this is an unfair assessment, particularly since most of the men interviewed who preferred monogamy were seeking monogamous relations not because of risk reduction (though this logic does factor in for some), but because of a strong desire to be with one committed partner. And as we have seen, issues of trust and rapport come up in all types of relationships, including casual hookups.

Men in monogamous relationships, “monogamish” relationships—that is, where non-monogamy has not been specifically negotiated, but sex outside of the primary relationship is considered to be likely by one or both partners (Oppenheimer, 2011)— or established sexually open relationships, may negotiate risk and safety in a host of ways to prevent situations like David’s. For example, some participants discussed getting tested and confirming HIV statuses before condoms are not used with a longer-term partner (though a few admit that condom use is not always consistent after an extended period of time with a partner, even when serostatuses have not yet been confirmed). Some need to know the serostatuses of their partners before having anal sex at all, even with condoms. Some continue to use condoms even after serostatuses have been confirmed as HIV-negative. Some agree that both partners will continue to get tested for HIV and STIs even though sex with partners outside of the relationship has not been agreed upon and is not encouraged; in this instance, testing serves as a back-up measure in case someone is unfaithful.

Some participants have partners who are slow to get tested for HIV or who strongly believe that they are HIV-negative even though they have not been recently tested, thus causing one partner to have to encourage the other to get tested. Sometimes a partner does not believe the initial test result and requires multiple tests, or to see a written document confirming the HIV-negative status of their lovers. Fred’s boyfriend made him get tested three times before he would allow anal sex to occur. This hyper concern put a great deal of strain on their relationship, which eventually ended. Some participants discussed not using condoms in the primary relationship but only having protected sex with other people outside of the relationship (which is the original definition of negotiated safety put forth by Kippax and her colleagues). However, determining if/when a relationship is closed or open can be tricky. Take a look at how Scott currently defines his relationship:

> Scott: Um, in the past, it was monogamous. This one is kind of ... I don’t even know how to explain it. In the beginning, we were like, we don’t want to set any boundaries. And we still kind of have the same rules, but neither of us are really seeing anyone else, but I’ve never really said, like, I want this to be a monogamous thing either. So, I don’t know. I think it’s just, we’re comfortable and happy with each other. At least, I am, and I think he is as well. And so, I don’t think either of us are seeing anyone else right now.

This is an example of the “monogamish” relationship. Scott and his boyfriend stopped using condoms and have agreed that they would discuss having sex with other partners with each other first before opening up the relationship. However, though Scott is receptive to the idea of sexual openness within the relationship, his comments do demonstrate some ambivalence.

And as a final example, Jeremy discussed the challenges of negotiating safety in his relationship. Jeremy and Michael (both participants in this study who were interviewed separately) decided to wear condoms in their relationship together when they could not confirm their serostatuses. However, Jeremy could not maintain an erection with a condom on, prompting him to take the bottoming role in anal sex, which was not his preference. This made the sex between these two lovers less enjoyable, especially for Jeremy. This caused them to seek other sexual partners, thus introducing new elements of risk into their relationship. It also put strain on their relationship, which eventually ended. We are certainly witnessing a pattern here of serostatus uncertainty and risk negotiation playing a key role in the deterioration of sexual and romantic relationships, both in the context of seroconcordant and serovariant relations. This is indeed one of the primary ways in which serostatus uncertainty erodes the well-being of gay men.

All of these examples show how reflexive young gay men are and the measures they will set up to avoid putting themselves and their partners at-risk. All of these strategies discussed involve a degree of trust and communication about sexual needs. Sometimes both partners are on the exact same page, like Scott and his boyfriend. And sometimes, different tolerances to risk and sexual preferences create tensions within the relationship, as with Fred and Jeremy’s and Michael’s relationship. Thus, even though HIV may not be present in the bodies of any partner, serostatus uncertainty plays a role in how HIV-negative gay men negotiate the terms of their relationships while trying to satisfy the sexual needs of both partners. Thus no sexual or intimate relationship between gay men—even between two HIV-negative identified men—is immune from having to address serostatus uncertainty in some capacity. Every new sexual and romantic encounter reproduces a unique form of serostatus uncertainty that must be negotiated.

To summarise, the intimate and sexual context associated with a specific experience of serostatus uncertainty plays a significant role in how HIV-negative gay men come to develop their risk disposition. Elements of sexual practice beyond the act of unprotected anal intercourse determine how gay men orient themselves to HIV risk management practices, by determining how they moralise and attach meaning to particular sexual events. At the heart of the discussion above are gay men coming to terms with whether or not the sex that put them at-risk was worth it and whether their sexual decisions were morally right given the possibility of HIV infection. No doubt the ways in which gay men treat each other in their sexual relationships, whether casual or longer term, plays a role in how they perceive the experience of serostatus uncertainty, mainly by shifting the perceived value of the sexual exchange. The intimate dimensions of gay male sexual exchange fundamentally determine how a social actor perceives the current landscape of HIV prevention and his place within it—that is, how he recognises and responds to his risk disposition.

When an HIV-negative social actor feels more comfortable with his sexual partners and the terms of a sexual exchange, he tends to feel more comfortable with the serostatus uncertainty associated with that particular sexual exchange—regardless if, from an epidemiological perspective, the risks are low or high. Thus the anxieties associated with an experience of serostatus uncertainty are somewhat placated, because the sex that put him at-risk is given a more positive moral appraisal. Strong bonds between sexual partners and an element of trust helps a social actor to feel more in control of the situation and thus helps him to alleviate the feelings of powerlessness associated with serostatus uncertainty (that is, the feeling of anxiety). The reverse is also the case. A lack of rapport or empathy and the breakdown of trust can cause a social actor to feel more vulnerable and alone, thus increasing the anxiety he experiences as a result of serostatus uncertainty, possibly leading to increased risk aversion. A risk averse social actor may then try to change his risk disposition by altering his sexual practices, such as with the example of Francis above who decided to use condoms for oral sex after his particular "HIV scare" or Jonathan who began to abstain from sex for a period of time after taking PEP.

While anxiety is undoubtedly the key emotional state tying together the participants' narratives, the examples above demonstrate how this feeling may morph or blend into other fears such as anger, distrust, shame and guilt, depending on the specifics of the social situation. Thus the emotion management work associated with HIV risk management is not just about confronting one's fear of HIV, but also the fears that develop as a direct result of sexual relations. However, interestingly, gay men would not have to confront these fears (at least in the context of the specific sexual exchanges that we have been discussing) in the absence of serostatus uncertainty. Francis' anger, Matthew's shame, Jonathan's guilt and David's distrust, stem from breakdowns in their social relationship, but are fuelled principally by their anxieties over serostatus uncertainty. Following the language of in/capacity theory, occasionally the fears these social actors experience are subjective in nature, in that the threatening force may be positioned as external to the social actor—for example, one may experience anger toward a sexual partner because he cheated. However, almost without exception, these fears eventually develop into moral ones as social actors come to confront how their own sexual decision-making has produced serostatus uncertainty and whether they have the capacity to confront this experience competently. The summation of this analysis is that the emotion management dimensions associated with dealing with serostatus uncertainty are fairly complex and will depend on the specifics of the social context that produces the serostatus uncertainty. However, without a doubt, how gay men manage their anxiety (and other associated fears) plays a key role in how they develop their risk disposition and how they come to implement agency by adjusting their sexual practices.

In short, serostatus uncertainty is never completely avoidable in any type of sexual relationship involving HIV-negative identified men during the transition to the biomedical era of HIV prevention. Sometimes the risks associated with a seroconcordant relationship are easily managed when both partners have a strong sense of what they need sexually and share a similar disposition toward risk. However, this can be a challenge among some young HIV-negative men who are just learning what they need sexually and what their tolerance to serostatus uncertainty may be. Indeed, determining exactly what one needs or desires sexually and romantically is not a straightforward matter, as I will demonstrate in the next section.

Sexual Scripts, Sexual Confidence and Serostatus Uncertainty

It was in the second interview for this project that Fred brought up, completely unprompted, a discussion on the social pressures young gay men face to be sexually experienced and sexually confident. This idea would become a key discussion point throughout the remaining interviews and one of the main original contributions of this dissertation to the field of gay men's sexual health and critical social science on HIV. Here are Fred's initial comments:

> Fred: Um, I am sure it exists for others, straights [i.e. heterosexual men and women].

> It must. Um, but I just wonder, it's not that I don't want to have sex, or that I don't want to have sex frequently, or that I don't like the id. But I also know that at the same time there is this, like [this] social, this competitiveness, this social pressure that I feel like, if you are not getting laid then there is something wrong with you. Or you are doing it wrong, or you know, or that someone has a skill that you don't, like, um, it's uh... to some degree, there is a kind of impetus. And again, that doesn't mean that people don't want sex as much but that also [this social pressure] exists there at the same time.

Thus on the one hand, Fred sees himself as a sexual person who, independently of social forces, desires having sex. On the other hand, he feels that there is a competitive pressure on him to implement these desires and to be a skilled lover. According to this view, we see something wrong with gay men who are not building their sexual capital, who are not skilled at sex and who are not at ease with their sexual and/or promiscuous nature (see too, Green, 2008, 2011, 2013). This idea came up in multiple interviews, including Bradley's and Mario's. Bradley has been waiting for a more sexually adventurous period in his life that has yet to emerge despite being in his early thirties, making him feel somewhat abnormal. His lack of sexual experience has made him feel somewhat inadequate. And Mario feels like there is something wrong with him for not ever having had group sex or having ever gone to a bathhouse.

The social expectations on gay male sexuality, and the pressure to meet those expectations, may come directly from lovers, hookups, close friends and peers who may judge a social actor for their sexual inexperience or lack of sexual confidence. Gay male culture and media also set up these grand sexual expectations. Many of these young gay men are very active on the Internet, spending hours each day encountering a nearly endless flow of highly sexualised imagery and information about sex through pornography or through other gay cultural websites and blogs that tend to predominantly focus on sex. This exists in addition to dating and sexual apps on smartphones, where gay men are often expected to engage in hyper sexualised discussions with strangers and be willing to share nude photos when requested. These apps sit alongside other social media applications like Instagram, Tumblr and Snapchat, all of which have highly sexualised components that can greatly advance the social networks of those with sexual capital to offer. The hyper-sexualised nature of gay culture is by no means new (Crimp, 2002; Warner, 1999). However, the sheer volume of sexualised imagery and the acceleration of diverse opportunities to engage in sexualised interaction that new technologies produce is a substantial development in gay male culture during the transition to the biomedical era of HIV prevention and one that plays a role in how young gay men perceive themselves as sexual beings vis-à-vis some cultural standard on sex that these technologies reify (see too, Rosser et al., 2011).

The ideas expressed by Fred and the notion that social actors are evaluating their sexual activities in relation to some cultural standard should not be surprising for those of us familiar with social constructivist theories on sexuality. Gagnon's and Simon's seminal work on sexual scripts argues that sexuality is not just based on innate drives (genetic, hormonal or psychological) but that a social actor's sexual desires are shaped by social expectations on sexuality (Gagnon & Simon, 1974; Kimmel, 2007). In sexual script theory, social actors do not enter into unmediated sexual exchanges, but sexual scripts structure sexual negotiation and desire. Sexual scripts—intrapsychic, interpersonal and broader cultural scripts—are loosely based narratives that allow social actors to situate themselves vis-à-vis the other within an intimate or sexual encounter. Social actors may have the freedom to construct their intimate and sexual lives in diverse ways, but these constructions will be compared to pre-existing conceptions of intimacy and sexuality already in circulation. The main idea with sexual script theory is not that sexual desires are somehow artificially produced and not that gay men adopt sexual practices just because of social influence. Rather, it recognises that social influence plays a role in how gay men *interpret* and derive meaning from their sexual desires, which plays a role in how sexual desire becomes manifest (and of interest to us here, how sexual risk is understood).

There are many competing sexual scripts in circulation that were brought up throughout the interviews. The idea that all gay men are promiscuous, or have a promiscuous period in their lives (particularly in their formative years) as a form of self-actualization, is a sexual script. The idea that gay men are (or should be) more sexually adventurous than their heterosexual peers is another script. The hookup encounter arranged from a sex app is another sexual script, as is a first romantically-inclined date that may be arranged off of the same app. The monogamous gay married couple is another sexual-intimate script. Barebacking with casual partners as a way to be subversive (i.e. to be a "bad boy" or queer) is one script and having unprotected sex as a way to cement intimacy is another. Sexual types, such as twinks, bears, cubs, otters, pigs, (muscle) daddies, jocks, tops, power bottoms, fairies, masculine-straight acting bros and polyamourous hipsters, as well as assumptions about sexual proclivities based on body types (skinny, tall, well endowed, less well endowed, un/cut) and race (Asian bottoms, Black tops) are all cultural scripts to be adopted or resisted. They are all forms of symbolic or sexual capital that gay men use to acquire sexual partners and increase their social standing within competitive sexual fields (Green, 2008, 2011, 2013).

HIV prevention research and education, or safer sex, is also a sexual script, providing a cognitive map of sorts to negotiate risk during sex and to make sense of sexual risk-taking. If two men share and discuss information about their sexual health status and discuss prevention measures, then they are following a particular script about sexual health. The emphasis HIV research has put on sexuality as a core feature of gay male subjectivity and community building also serves as a script (Crimp, 2002), continually reinforcing the idea that gay men are hyper-sexualised and often risk seeking individuals. Indeed, the influence of prevention messaging on sexual scripts cannot be denied. Dowsett (2009) has argued, for instance, that HIV prevention education, with its substantial emphasis on anal sex, has actually played a role in increasing the number of gay men who practise anal sex regularly (versus relying on other sex acts like fellatio), since it has brought anal sex as a sexual script (as a possible sexual interaction to be desired) into heavier cultural circulation.

Indeed, it appears that social pressure or sexual expectations are particularly predominant when it comes to engaging in anal sex instead of other forms of sexual play. For instance, we already saw above how Spencer felt pressure to engage in anal sex with Dylan, despite not feeling completely comfortable with the act, especially after being judged on his sexual performance. Both Matthew and Alexander discussed dealing with pressures from partners and friends to engage in anal sex when they were not completely comfortable with the act, for both sexual health reasons and more generally since anal sex, for some, can be a more involved and/or intimate affair.

> Alexander: Yes and no. And I really like that you raised that because I mean, I don’t really think that there is a pressure. I personally never felt pressure and yet I felt a lot of pressures, as you know, I mean, people would actually kind of make fun of me for being a bottom virgin and would laugh at me for not having anal sex.

In Alexander’s statement, we see how sometimes these broader social expectations on gay male sexuality can turn into judgment or ridicule. This idea of people expecting anal sex—intercourse is often considered more “real” than other forms of sex—also comes up in Nathanial’s story when he talks about pressures from his friends to move faster with hookups.

> Nathaniel: And I mean, I have a lot of gay friends and I know they're always like, "Oh, like it takes you so long," or, "Why not just go for it and just have some fun." And I mean, I think, you know, like you can make out with them [i.e. casual partners], you can do a whole bunch of other things, but it's the actually having [anal] sex with them part, I just... I don't know. I don't think that it's that easy for me to just slip away. I'd like to have some kind of connection more than just, "I think you're hot. You think I'm hot. Let's do it."

Some participants, like Scott, Ben, Nick, Vincent and Anthony, talked about pressures and expectations to have unprotected anal sex and having to negotiate barebacking with casual partners, sometimes having to be quite adamant on condom use. For example, Vincent describes a group sex situation where one man tried to argue that he didn't need to use condoms because he was on PrEP (a then very little known prevention tool).

In addition to specific sex acts, there can also be different expectations and judgments when it comes to the types of intimate relationships social actors seek.

> Nick: So yeah, there is a pressure that I've experienced to be non-monogamous. And also to be open to sort of, wouldn't say—no, that's not true. I was going to say to being open to riskier forms of sex, but that's not like a pressure I consistently encounter. I just encounter that periodically.

Nick goes on further to discuss how difficult it is to find a longer-term monogamous partner in his age range (i.e. early 30s), because everyone is interested in hooking up and some find the idea of being in a closed monogamous relationship oppressive, a manifestation of heteronormativity/homonormativity. Interestingly, however, others argued the exact opposite of Nick, that there is in fact a growing expectation for gay men to be monogamous and to have longer term relationships as a sign of maturity.

> Jake: Umm, I've never felt like anyone has judged me for not being a crazy, like, sex maniac, having sex with tons of people. I think, if anything, I always feel awkward when people are like "Oh, what's the longest relationship you've been in?" Or "Why aren't you dating anyone right now?" Or like, I feel uncomfortable. I feel more pressure with that [i.e. being in a relationship] than the whole sex thing, yeah.

Thus just as much as gay men are judged for desiring or implementing monogamous, “homonormative” relations, or for not being sexually active enough, so too do some feel judged for either not being able to produce one of these relationships or choosing to opt out of this form of relationality altogether. Indeed, on the opposite end of the spectrum, some participants discussed feeling judged for being sexual and dating a lot, for having riskier sex, or simply for bottoming. Here is an example from Terry:

> Terry: Hmm. I don’t know. It’s funny. I think there’s a certain baggage that comes with being a bottom as well. Like I don’t think anybody’s going around bragging that they love to bum bareback [i.e. have unprotected anal sex as the receptive partner]. I think a lot of people talk about being a bottom, but I don’t think a lot of people would want to talk about, like, oh yeah, you know, from time to time, with whimsy, and I like to [bareback], you know?

Here is a statement from Alexander that demonstrates the type of “baggage” Terry may be referring to:

> Alexander: So I find it reckless. And yeah, there might be a little judgment when it comes to someone admitting they bottomed for 12 strangers, even if it is with a condom, compared to making out or oral sex or having partners here and there. So I think that it depends on everyone’s personal paradigm about what it means to, related back to risk, what qualifies as risky behaviour. And that limit is going to be different. I also say that people who do partake in risky behaviour, they also use a discourse of slut-shaming as a way to assuage their own anxieties about how it is that they behave. That’s my personal opinion.

Thus on the one hand, there is some social expectation that gay men should be highly sexually active and sexually skilled, as first posited by Fred. Then on the other hand, there is judgment placed on those who have lots of sex with multiple partners. The tension between the expectation to build sexual capital versus not being seen as being “too promiscuous” (the perennial Madonna/whore divide more commonly applied to women) is captured in a comment made by Paul.

> Paul: I would have to say that there is [some pressure] to an extent. Here’s my view on it: and it is very weird. If you stay at home and, from the culture point of view, if you do not have sex, you are seen as a prude. You are seen as stuck up, you are seen as, you know, prince white night, no, shining armor white horse sort of thing, you know? Then the moment you have the odd sexual encounter you are seen as a slut,

> because you hookup… And I would say that is quite true for the gay society. There is no middle ground. You can't be a perfect gentleman. There is no such thing.

Again, we see that there is this social pressure or expectation which comes from "gay society" to be sexual. Not having sex means that you are a prude. Yet there is also judgment passed on gay men who are seen as being too promiscuous. Paul's statement here may be exaggerating how easily one flips from prude to slut and vice versa. Yet, there is no doubt from the interviews that many gay men are evaluating themselves as either being promiscuous or not being promiscuous enough and are trying to make sense of how others are evaluating their promiscuity or lack thereof. A few men saw promiscuity, or having a "slutty phase," as a necessary or important part of growing up as a gay man. However, they associated promiscuity with immaturity, something to eventually grow out of. Others remained proud or at ease with their search for lots of sex or for more adventurous sexual experiences.

Thus some of the men interviewed were completely comfortable and confident with the amount and type of sex that they were having and, just as importantly, were not having. Yet, it appeared that in many cases there was at least some degree of ambivalence toward sex, some conflict between too much/not enough, too exciting/too boring, too risky/not enough risk, too focused on monogamy/too focused on promiscuity, too much partying/too little partying, etc. And there was some attempt to make sense of one's own sexual history vis-à-vis social expectations on gay male sexuality which, as we can see, are themselves multiple and contradictory.

How does this relate back to risk disposition and experiential serostatus uncertainty? As already mentioned, the more secure a social actor is with the sex he is having, the more he will be comfortable with the management of serostatus uncertainty associated with a specific sexual experience and with the negotiation of HIV risk in the future. The less ambivalent a social actor is about the sex he is having, the less likely the serostatus uncertainty associated with his sexual encounters will cause great anxiety. Some degree of serostatus uncertainty may be unavoidable, but whatever risks are taken must be connected to sexual events that are perceived as being worthwhile by the social actor. Put differently, sexual confidence plays a role in the development of a social actor's risk tolerance. The more confidence a social actor has with his sexuality, the more accepting he will be of any serostatus uncertainty associated with his sexual decisions.

Conversely, ambivalence can aid risk aversion. The more unsure a social actor is about the sex he is having—the more he questions its value and necessity in his life—the more likely he will be averse to any associated serostatus uncertainty.

If we return back to the navigational metaphor on risk disposition that I offered in part one, the idea here is that as gay men are reading the map about available HIV risk management practices, they are also simultaneously reading a map about different types of gay male sexual practices and sexual identities. An experience of serostatus uncertainty will cause a social actor to reflect on his own sexuality and to evaluate his sexual practices in relation to cultural expectations. In terms of HIV risk management, one's risk disposition is both a product of trying to interpret biomedical risks while also trying to interpret *social and cultural risks* associated with implementing *or* failing to implement certain sexual practices. Gay men don't just have sex and accept a degree of serostatus uncertainty merely because of cultural expectations to be sexually active. However, we cannot understand how gay men confront their serostatus uncertainty without considering how cultural scripts put significant pressures on young gay men to be sexually active beings who must be highly reflexive about their sexual identities and practices, regardless of the associated level of risk-taking.

What the interview data demonstrates, however, is that the process of determining what sexual experiences or types of sexual and intimate relationships may be worth some serostatus uncertainty, is not always a straightforward course where a social actor intuitively knows what he wants. Rather, this is a highly reflexive project where gay men internalize various cultural scripts about the sexual and intimate relations that they ostensibly should be having and interact with peers and lovers with competing sexual interests to make sense of their own desires. However, these scripts are contradictory which can lead to strong feelings of ambivalence that can then make one more averse to the serostatus uncertainty associated with their sex acts. The higher the degree of ambivalence a social actor has, the more challenging moments of serostatus uncertainty will be and the more overwhelming HIV risk management will appear. Further, the more ambivalent a social actor is about the *limited* sexual risks he is taking (perhaps because of his strong aversion to serostatus uncertainty) the more he may feel like he is missing out or lacking some form of sexual capital that others have—that he is not effectively competing sexually (Green, 2000). In other words, implementing one's agency and establishing ones risk disposition is not easy, particularly because it isn't always simple to ascertain at a given moment *exactly* what type of intimate and sexual life one wants.

That many gay men may actually be very conflicted about their sexual practices is an original observation that can only be made when we do not focus exclusively on gay men with promiscuous histories who engage solely in high risk unprotected anal sex. However, even among those men interviewed who do have more sexually elaborate histories, there are still demonstrations of ambivalence. To be sure, I am not denying here that many gay men desire to have lots of sex, enjoy having lots of sex and secure their well-being through sexual experimentation. However, it is necessary that we question this type of thinking as the dominant cultural script on gay male sexuality. When ushered down to the individual level, this type of thinking may manifest as an unwelcome form of social pressure. And in research practice, the cultural assumption of gay men as all being promiscuous may erase the doubts and uncertainties these social actors have over their sexual practices. Indeed, what would HIV education messaging in Canada even look like if it began from this nuanced point of view rather than assuming that all gay men are horny studs?

To summarise, a social actor's ambivalence over what he fundamentally desires when it comes to love and sex can aggrandise his experience of serostatus uncertainty. Uncertainty about one's intimate choices plays a key role in how tolerant or averse he will be to experiences of serostatus uncertainty. This point may seem obvious, especially when we consider the age range of the participants in this study. Yet, a significant bulk of research on gay men and HIV risk that we saw in chapters three and four has been focused on biomedical uncertainties, biomedical optimism and rationales for unprotected anal intercourse. Less attention has been paid to the ways in which confidence in one's sexual choices plays a role in the level of serostatus uncertainty one is willing to accept and how one manages or experiences extended periods of serostatus uncertainty. Yet, the sexual confidence of social actors is key to understanding how they moralise experiences of serostatus uncertainty either as worthy (good) or unnecessary (bad). Another element affecting this process of risk assessment is a social actor's relationship to the gay community, the last element of risk disposition theory that I shall now explore.

The (Gay) Moral Compass: Communities and Intersectionality

In addition to sexual confidence and sexual scripts, the social location of gay men and their relationship to gay male communities plays a significant role in how to determine their risk disposition. In her seminal work on risk and morality that I first examined in chapter one, Douglas (1992) argues that the risk-taking behaviour of a social actor is moralised in relation to their membership within a particular community. Drawing specifically on the experiences of gay men in the early years of the AIDS epidemic, Douglas argues that while for some people the idea of having sex that poses a risk of HIV infection seems irresponsible, *within* gay male communities, some degree of sexual risk-taking may be valued and seen as a community norm in the face of homophobia and serophobia. The idea that sex in general, and sex that poses a risk in particular, are necessary features of gay or queer male community and bonding also surfaced in the queer theory that I examined in chapter four, in the work of Crimp, Dean, Dowsett, Halperin and Warner. The summation of this work is that those who are at-risk will draw on ideas about the morality of sexual risk-taking from their sexual communities. From a queer perspective, taking sexual risks may be a way to forge kinship ties, combat viral apartheid and resist heteronormativity/homonormativity. In short, communities offer a moral compass to interpret sexual behaviour and its associated serostatus uncertainty.

Without a doubt, the notion of "community" has played a prodigious role in the construction of gay male sexual scripts, the moralisation of gay male sexuality and the production of HIV prevention research, policy and education (Holt, 2011). Many of the earlier successes within the areas of HIV prevention and care, including the invention of safer sex, have been directly attributed to the political mobilisation of gay men as a community, along with other members of the broader LGBTQ (Dowsett, 2009; Patton, 1990). Epistemologically, the idea of community is also of key import in Canada since it is through the logic of community that research is often justified, funded and coordinated. As I first discussed in the introduction to this dissertation, community based research has become one of the dominant research paradigms guiding HIV related work in Canada (Namaste et al., 2012). Thus pre-determined ideas of what constitutes gay male community—e.g. bathhouses, bars, Pride events, circuit parties and ASOs—shape what we come to know about HIV prevention practices on the ground. By selecting what counts as community, researchers draw on the narratives of some gay men, within some gay milieus, emphasizing specific ideas on gay male sexual practice, culture and subjectivity, while overlooking others (Dowsett, 2009).

As I argued in chapter four, HIV prevention research tends to focus extensively on higher risk men, promiscuous men, barebackers, HIV-positive men, serovariant couples and men who attend higher risk milieus like bathhouses. Since HIV researchers are primarily interested in understanding why people take sexual risks and go through HIV service community channels to recruit, they are inclined to focus on the narratives of those who tend to be greater risk takers, who have stronger connections to ASOs and hyper-sexualised spaces like bathhouses. These are the narratives that then circulate as truths about gay male subjectivity within the HIV prevention field. In other words, the narratives of high-risk takers with stronger community affiliations tend to play a key role in how we construct the idea of gay male community through our knowledge production practices, consequently shaping how we come to understand gay male sociality and the moralisation of sexual risk-taking among gay men.

However, the men who participated in this study—who were not so directly aligned with ASO networks and whose sexual risk-taking varied incredibly—had highly ambivalent or sometimes had hostile opinions about the gay (male) community, which they often described through some reference to a network or a physical community, normally referring to the Gay Villages of Montréal and Toronto. Indeed, when asked about what constitutes the "gay community," many participants struggled to define the term or to explain its meaning and/or relevance in their lives. However, most provided answers that demonstrate that they have put some prior thought into thinking about their orientation to the gay community or to queer milieus, demonstrating that the gay community, *as a concept*, still plays an important role in how younger gay men evaluate their sexual practices.

For example, while Jake struggles to define the gay community and his place within it, he still has some respect for it.

> Jake: Umm, to be honest, I have friends that are gay, but I don't spend a ton of time in the Village or I don't, like, when I go to a gay club, I just feel like there are a lot of, like it's very shallow, to be honest. It's just not my scene, really. I respect the gay community. Maybe I just haven't found my place in the gay community yet. I'm proud to be gay. I've got friends that are gay. But yeah, maybe I just don't know my place in the community yet is the easier way to say that.

Some wish to be a part of a community, but find it hard to make social connections in hyper-sexualised contexts.

> Nick: Right. So in Montréal, I didn't really experience the gay community. I experienced having sex with gay men in all sorts of different ways, but not a community.

Nick’s comment is illuminating, because it contrasts greatly to the ideas posited by seminal sexuality theorists like Crimp and Dowsett who often conflate having sex with forging community. While social actors can engage in sexual contact or fulfill hyper-sexualised scripts, they might not necessarily bond, create friendships or support each other in more meaningful ways, which Nick goes on to describe as being an isolating experience. Karun describes this isolating feeling with tremendous candor (and perhaps more than a hint of internalized homophobia).

> Karun: But I guess that’s just the nature of gay life. I mean you sort of hop from bed to bed, from room to room, from hotel to hotel, and it’s not, I don’t like this life, honestly. It’s not a life that, I feel it’s cursed almost, as a life to sort of come back [to]. I mean, to have a lot of sex but to come back home to an empty bed. It’s not a life I would, as a child, if someone told me if you grew up, this is the kind of life you’d have, I’d have felt very unhappy.

Certainly not all gay men feel this way about having promiscuous sex. And as some of the examples described throughout this chapter have demonstrated, even casual sex can be a way to forge intimacy (however brief) and build long-lasting friendships. But the idea that the gay male community can sometimes feel like a hyper-sexualised meat market, which can seem vapid and cultivate feelings of loneliness despite so many social encounters, came up often in the interviews, even among those who enjoy having casual sex.

> Jonathan: And um, but now it seems like a shopping mall. Just going through Ste. Catherine [i.e. Montréal’s Gay Village] is like, you’re just being checked out by everyone and it’s like, I don’t like that. And that’s actually like, in the same sphere as this, it’s a very sex world, the gay community, because it’s really all about, yeah, it’s all about sex. And I feel like that little bubble of closeness makes it all right to um, to be like attracted to everyone. And it’s very closed circles and I don’t like that aspect of it. And that’s why I never went in a sauna [i.e. gay bathhouse] or I never...

Other participants had more positive things to say about the gay male community, finding it to be a very important social network and an empowering idea that can save lives. Some argued that, though they didn't currently find it necessary for themselves because they had additional social support (i.e. sympathetic family members, understanding friends), the idea of a community may be helpful for those new to a city and those recently coming out of the closet. John likens the gay community to having a (supportive) family of sorts, which has been very helpful.

> John: So it's kind of a weird thing that like the gay community is um, I love it. I love the gay community. I consider myself part of it, and it's very important to me, but like any family dynamic, sometimes you just want to be like, "Don't talk to me! Leave me alone!" and "I hate you so much right now. Ahhhh!"

Unlike John, however, others have no need for the gay male community and tended to associate the gay male community with hyper-sexuality, antiquated stereotypes, immaturity, partying and drug use. Some men did not see themselves as fitting into the community because of its extreme polarities.

> Vincent: I mean it is just so, it's not too glorifying to watch the gay pride and all the events that they do is so cheap, vulgar, trash, hyper-sexual, really feminine and I'm not, or hyper-masculine and built, which I'm not. So I just feel like repelled [by] this whole thing.

For some the gay community was something one ventured into when they were younger, but grew out of.

> Chris: I look at the gay community the same way I look at the Italian community, I guess, what I was describing at the beginning of the interview. How I see it, and I wish I was part of it, but I just don't feel like I fit into it. And I wish I did. Like, I used to do it all the time and have a blast and I don't see a lot of friends that I used to. I don't party with a lot of friends like I used to. I don't miss it. I don't have the desire to go out and get wasted and I don't know. I feel like, I don't know. I always think of gay culture was, you know, enjoying a drink, enjoying having fun, being a little bit more carefree and not having the responsibilities of... so it's a lot of "let's just party." I always think of partying, having fun. And I feel like I've partied and I've had fun and now I just want some peace and some quiet and I feel like I wouldn't get that in the Village. So I just avoid it.

While Chris sees some value in the carefree nature of the gay community, others hold far stronger critiques.

> Paul: If you're from the Village I will probably not hang out with you or hookup with you. Why? Because I try and stay away from the scene and everything that encompasses it. Because you're either super old or super gross, in terms of that you sleep around with everyone, don't know what you are doing in life, you probably party way too much and take a whole lot of drugs. Um, because I mean, let's face it, a good population, a majority of the population that lives in the Village is the old school. I was born in the forties and now it's acceptable to sleep around with everyone sort of thing, so I am doing it and gross. And that's the view I have of the Village.

Along with some ageist opinions, Paul is stating here that those more closely aligned to the gay community are of higher risk and thus he avoids hooking up with them. Other researchers have confirmed the perception of increased the risk associated with urban gay settings (Lupton et al., 1995). Some of those hostile to the idea of the gay male community associated themselves with specific sexual milieus (like bear culture or piggy culture) that they saw as somewhat different than the gay community (even though these can be considered to be micro-cultures within the general gay male milieu), defined themselves as queer, or located themselves within newer communities like the arts scene in Montréal's Mile End. For some of these men who were more sexually experimental, the issue was less about the sexual nature or partying aspect of the gay community (which they appreciated) and more about the homogenization of gay culture.

> Kyle: Because, um, I don't belong to the gay mainstream culture. It is something I have always hated and I… so I can't connect, I can't [relate]. I can associate with people who belong to this culture. But I don't feel like, at ease. I don't feel easy. There are many, many things, which I don't like.

Thus following Dowsett's (2009) theorizations, the data from this study demonstrates that some younger gay men may be moving away from seeing themselves as principally members of the gay community or in reducing their subjectivities to being gay men. However, the concept of the "gay community" and preconceptions of the sexual behaviour of its members does allow social actors to compare and understand their own sexuality vis-à-vis other gay men. In other words, some social actors may reject organizing their lives around the notion of gay community membership, either partially or wholly, but this rejection still plays a role in the construction of their identity and their perceptions of sexual morality and HIV risk.

Indeed, this orientation to the gay community remains extremely significant for how serostatus uncertainty is assessed and moralised, and thus how social actors develop their risk disposition. From the work of Douglas or queer theorists like Crimp, where gay men are positioned as principally belonging to an imagined homogenous gay male community that highly values sexual expression, the serostatus uncertainty associated with sex can be seen as morally appropriate since sexual risk-taking is the cultural norm. However, if social actors do not see themselves principally as members of a community that valorizes sexual expression above all else, the moral implication of serostatus uncertainty may be perceived differently. For example, let's take these comments from Jake who, as we saw above, has struggled to find his place within the gay male community.

> Jake: I think that when I was in school, a lot of the really hot gay guys, it was like, everyone was sleeping with everyone and it was like, I was glad I wasn't part of that. And yeah, I don't know if they were practising safe sex or not, but regardless, it was like everyone slept with everyone and it was reckless. I think with apps like Grindr and Scruff, it's even more so like that, and not even with young people. Like a lot of people that use Scruff are in their mid-to-late 30's I find, and they're all looking for sex. So I don't know if it's fair to say that it's just a young, reckless thing...

Jake is commenting here on the recklessness of gay men in his school not because they are having riskier sex, but simply because they are having lots of sex. Being an outsider to this group of sexually experienced gay men makes him moralise their behaviour in a negative fashion and imagine the potentials for higher risk-taking (without any proof). On the opposite end of the spectrum are participants whose friend groups or communities (gay or queer) were made up of members who were highly sexual, or who engaged in a lot of partying and drug use. Consequently, they tended to be less likely to moralise their own sexual activity or the sexual activity of others in a negative manner. Of course, part of why these men may be friends to begin with is because they share a similar interest in casual sex and drug use. Thus in some sense, being more proximate to gay and queer male communities or subcultures made many of the participants more tolerant to serostatus uncertainty, more tolerant to the uncertainties associated with gay male sexual practice.

It must be made clear that the argument being made here is *not* that membership in the gay community makes social actors greater risk takers, but that simply having supportive networks and friends who share similar values about sexuality and who accept serostatus uncertainty as a norm—as an unavoidable part of being a sexually active gay man— plays a role in how sex is moralised and serostatus uncertainty is interpreted. Meanwhile, those participants whose social circles tend to experience serostatus uncertainty less, tended to be more likely to be risk averse since serostatus uncertainty was less socially acceptable (or at least less acknowledged) among their peers. However, this argument should not be overstated. For example Kyle, who is well connected to many sexually active gay and queer men (though he dislikes the idea of the gay community), engages in lots of casual sex (and sometimes risker forms of sex) and has no moral position against having lots of sex. He does, however, suffer from tremendous anxiety about seroconversion and is extremely risk averse when it comes to having uncertainty about his serostatus (namely because of his immigration status). Alexander is another example of someone who is relevantly connected to the gay male community, but who can also be really risk averse.

> Alexander: And when people ask me why don't [I] partake in anal sex, I'm like, well, it's higher risk and I'm like, I can't really get AIDS. Besides the fact that I don't want to have to deal with this in my own future, I also have a [single] parent, a mother that is relying on me for her livelihood. She sacrificed her life for me. I have to take care of myself so that I can make sure I can take care of her. And I think that it's a type of familial duty that may be, umm, children from immigrant families can identify with more so than people whose parents were perhaps born here, Anglo or Franco White.

What is fascinating is that Alexander is not talking about barebacking or higher risk sex. He is actually questioning the risks associated with safer sex, with protected anal intercourse. While he understands that risk can be reduced by condom use, he is uncomfortable with the additional serostatus uncertainty that anal sex brings. For him, being as certain as possible that he is HIV-negative is imperative because he wants to ensure that he remains as healthy as possible, since it is his responsibility to take care of his single mother in her old age. Of course, whether a social actor has a single mother does not change the effectiveness of condoms. It does, however, alter how the uncertainty associated with anal sex is moralised—that is, what is at stake with a potential HIV diagnosis— and thus what constitutes responsible behaviour for the social actor. Alexander is not risk averse because he is anti-sex (indeed, he has a lot of it). Rather, his moralisation of serostatus uncertainty, and anal sex in particular, is related principally to his social role as a son from an immigrant family and not vis-à-vis his membership to the gay male community.

Alexander brings up another intriguing point, which is that the dominant cultural profile of many members of the gay community in Canada has historically been Anglo-Saxon (Chown & Starr, 2013). As Adam (2005) has argued, HIV prevention messaging has taken on a neoliberal rhetoric –with liberalism being a socio-economic ideology with Anglo-Saxon origins (Steger & Roy, 2010)—where social actors are asked to manage risk and navigate a sexualised market system in the pursuit of their own self-interests. However, those who come from non-Anglo families may not find this particular culture of market individualism and self-interest so easy to accept. Let's take this example from Karun who is speaking about confiding to a member of his ethnic-cultural community about his difficult experience managing serostatus uncertainty.

> Karun: But at the same time, I spoke to someone within the Indian community, an elder person in the Indian community who I'm sort of friendly with and I told him that this is what's happening to me, and he was very upset with me. That man was very upset with me and he told me, "Karun, how did you get into this situation?" He said, "Your parents have worked so hard to raise you. They've given you the best education, they've sent you to the best school, they've sent you to Canada and this is what you're doing after coming abroad, you're catching HIV?" He said like, "What's going to be left for you?"

Once again, we have a social actor who is making sense of the serostatus uncertainty associated with lower risk sex (in this instance, Karun was only having oral sex) and not barebacking. That his parents had sent him to Canada for school does not change the biomedical risk levels associated with oral sex. It does, however, change how the sex is moralised. Within a neoliberal (Anglo-Saxon) orientation to sexual risk-taking, Karun's choices are his to make alone. However, Karun is not just a gay man. He is also a son of an Indian family who expects that he will do everything in his power to remain healthy and start a new life in Canada. This is the principal community frame by which Karun is making sense of and moralising his serostatus uncertainty, which is quite antithetical to the moralisation of sexual risk-taking that can take place within Anglo-White gay and queer communities which often prioritize sexual expression and subversion (as I noted in my review of queer theory in chapter four).

These stories demonstrate the need to look at social actors intersectionally and realize that the moral compass guiding a social actor's actions is a product of *multiple* intersecting community norms and values and sometimes contradictory belief systems that clash boldly. The risk factor research I examined in chapter three has argued that there is a relationship between experiences of racial discrimination and increases in sexual risk-taking (Brennan et al., 2013; Stall et al., 2007). The argument here is not that cultural, ethnic or racialized otherness leads to sexual risk-taking *per se*, but that it alters risk disposition—it affects how one views the HIV prevention landscape. The cultural background of a social actor plays a role in how he moralises sex and whether he can accept serostatus uncertainty in his life. While being at-risk for HIV—being uncertain about one's HIV status and not necessarily having HIV or even having higher risk sex—is often a cultural norm within gay male communities, it is not necessarily an accepted or well understood norm outside of gay male communities. And gay male social actors who are managing their serostatus uncertainty must navigate these communities as well.

Nonetheless, the relationship between "Anglo-Saxon heritage" and neoliberal sexual decision-making should not be over-determined. Regardless of the cultural-ethnic background or immigration status of the participants in this study, one of their main concerns with becoming HIV-positive or even admitting to experiencing serostatus uncertainty was their parent's reaction.

> Tim: I've always thought about that, like when you're in this room waiting for your results and you kind of have to like, weigh both sides. I do, anyways. And I thought, what would I feel, like how about, I think I would be pretty upset, obviously. Umm, mostly because it would be, like, I would have to decide whether or not I'd want to tell my family and I think that would be kind of, it took my parents ten years just to get over the gayness and then to become like a, literally, like a living stereotype. "Oh! My son's gay, and now he's got HIV," which I'm sure my parents don't know the difference between HIV and AIDS. So it's probably all the same to them. So I'd just be like this walking stereotype of a son that they would have, so that's what's probably my biggest concern. Not so much about actually getting the disease and what I'd have to deal with afterwards. But oh my God! What would I have to tell my family?

Thus even among Anglo Canadian men, intersectionality remains key, because once again, these social actors are not just answerable to their peers or lovers within the gay male community, but quite often to their families and communities of origin as well. Due to the insular nature of HIV research, messaging and programming, so much work in Canada has gone into addressing at-risk communities about HIV. Less work has gone into educating the "general population" about HIV. This is noted in Tim's comments where he claims that his parents would most likely not know the difference between HIV and AIDS. As another case in point, the HIV

Stigma campaign discussed in chapter four was addressing HIV-negative gay men in gay male community settings about HIV related discrimination. Yet gay men are not just *gay* men and there is something particularly noteworthy about the fact that our governing practices consistently ask gay men to address serostatus uncertainty while living in a society where HIV ignorance and stigma remain the norm. In other words, HIV is likely to remain a stigmatised and highly feared condition among HIV-negative gay men, if it remains a stigmatised and highly maligned condition among the "non-high risk communities" that gay men also interact with daily.

In addition to the gay community serving as a moral compass to gauge sexual activity, community attachment does seem to play a role in sexual health literacy and the acceptance of new biomedical knowledge. The more proximate a participant was to the gay community—the number of gay friends and peers they had, their involvement in community events and gay culture, past involvement with LGBTQ groups, an interest in gay history and politics—the more they were likely to know about HIV prevention and emerging technologies like undetectable viral load. Furthermore, and quite importantly, having HIV-positive friends (and/or lovers), tended to play a significant, if not even a defining role in determining the sexual health literacy levels of the men interviewed. Those who claim to not personally know anyone who is HIV-positive often have the least amount of information on HIV, are often the most risk averse and are the least likely to accept new biomedical information about HIV transmission (I will discuss this more in the next chapter). When experiencing a severe instance of serostatus uncertainty, participants routinely reached out to gay friends, more sexually active friends, HIV-positive friends and friends with known expertise in HIV to make sense of their situation.

Of course, none of these statements can be generalized. There are also always exceptions in the data, which challenge easy simplifications. However, there is no doubt that proximity to gay male communities plays a role in shaping a social actor's moral compass when it comes to sexual risk-taking and shifts them either in the direction of risk tolerance or risk aversion. I could argue (or more accurately, speculate) that those more proximate to gay male communities and hyper-sexualised milieus tend to be both more knowledgeable about HIV prevention and also more risk tolerant (not greater risk takers *per se*, but more accepting of serostatus uncertainty). Those further removed from gay male milieus tend to be less knowledgeable and lean toward being more risk averse. However, the relationship between a social actor's proximity to a *particular* part of the gay male community and its effect on risk tolerance will also be affected by all of the social factors that affect risk aversion that I have discussed throughout this chapter and on how a social actor's subjectivity intersects with multiple communities that may moralise sexual health quite differently.

Returning back to our navigational metaphor, gay men may not be interpreting their place on the map solely from the vantage point of being gay men. Where they locate themselves on the map and how they navigate it will be guided by their different social roles and their involvement in various cultural communities. Thus a social actor's specific orientation to the gay community plays a role in developing his moral compass, in determining risk tolerance levels and thus his risk disposition. It will greatly determine how he comes to experience and moralise serostatus uncertainty and gay male sexual practice. However, since there exist such a range in membership and affinity levels toward gay male communities, as well as intersecting attachments to variable cultural and ethnic communities, it is perhaps impossible to make any definitive claims about how gay male community membership will affect the risk tolerance levels of a specific social actor.

Holt (2011) has uncovered similar dynamics in his research in Australia, arguing that gay men remain largely ambivalent to the notion of the "gay community" despite its significant import to HIV prevention research and education. He argues that "the assumption of a tidy relationship between gay identity, gay community affiliation and responsiveness to HIV education has always been questionable – it is unlikely that the uptake of safe sex practices was ever solely reliant on men feeling they were part of a gay community" (Holt, 2011, p.866). It is thus challenging to draw direct correlations between a social actor's relationship to the gay male community and his sexual practices and, in our case, his tolerance to serostatus uncertainty. Producing knowledge in and through the idea of the "gay community" may make sense from the perspective of researchers, especially those reliant on a CBR paradigm. But such a framework may not exactly capture the complexity of gay male social relations in an evolving cultural context. Nonetheless, the analysis offered in this dissertation does suggest that there may be some correlation between a proximity to the gay male community and a greater tolerance to serostatus uncertainty. Thus, similar to Holt, I contend that while the idea of the gay community certainly has its limits, it is not necessarily a concept that can be fully abandoned in our analysis or our approach to HIV prevention education.

Moreover, Holt argues that beyond the "gay community" we must examine the "personal communities of gay men." Drawing on Wellman, Carrington, and Hall (1988), he defines this as "the informal networks of friends, relatives, partners and colleagues with whom people feel close and connected, and with whom people feel a sense of belonging, solidarity and support" (p.860). Similar to the analysis I offer in this dissertation, Holt understands that gay men are not just *gay* men and do not just associate with other gay men. Thus to understand how the HIV epidemic affects gay men, we need to take a larger view of their social relations rather than zooming in exclusively on their identities as gay men. I am thus arguing here that beyond *sexual identity* this involves understanding the diverse *intersecting social roles* that gay men embody throughout their day, also taking into consideration their unique experiences navigating institutions, which comes to shape how they understand their social positions and attach meaning to experiences of serostatus uncertainty. It is the complex arrangement of these intersecting social roles that comes to determine a social actor's risk disposition.

Now that I have addressed this last main feature affecting risk disposition, I will conclude by drawing together all the elements from the previous three sections. However, first I will take a moment to reflect on the relationship between serostatus uncertainty and well-being.

Serostatus Uncertainty and Well-Being

The main measure of success in the HIV prevention field is whether we are reducing rates of HIV incidence and other STIs and, relatedly, whether we can encourage the uptake of prevention measures and decrease the amount of sexual risk-taking among MSM. What these epidemiological objectives can occlude, however, is the consistent challenges social actors face in their everyday lives to make these goals a reality. Just because a gay man has successfully prevented HIV infection, does not mean that this process has been easy, or that his overall well-being hasn't been greatly impacted.

In this chapter, I have been examining how HIV-negative gay men manage instances of serostatus uncertainty. In so doing, I have reflected on how consistently having to manage serostatus uncertainty has affected the well-being of HIV-negative gay men during the transition to the biomedical era of HIV prevention. The men who participated in this project have, at least until the interview, effectively prevented HIV infection. But at what cost to their happiness and to their overall integrity? At what cost to their mental, emotional and social health? Indeed, I have shown that continually having to manage serostatus uncertainty creates repeated challenges that can erode the quality of life for those who participated in this study—or at a minimum, has produced some extremely trying moments.

In the above pages, we have witnessed HIV-negative gay men who have suffered through extreme clinical levels of anxiety and depression related to their concerns over seroconversion, who have had relationships and romantic encounters tarnished by HIV risk (even when the virus was not actually present) and who have suffered through physically debilitating prevention measures such as PEP. Some of these men lacked the financial resources to pay for prevention measures, others worried about being deported if they were to seroconvert. Men in relationships struggled to negotiate the terms of monogamy and sometimes had to deal with painful infidelity. Some of these men struggled with social pressures to be more sexually experimental and others have chosen to abstain from sex or sexual experimentation out of the fear of seroconversion. When Karun was asked how he thought he would handle an HIV diagnosis, he proclaimed that the question alone terrified him. Ryan stated that he would probably kill himself. Terry became silent. And then through sobs he explained that he could finally return to the love of his life, an HIV-positive man, now that he would no longer have to be afraid of seroconversion. This is the reality of permanently living at-risk. HIV influences every single romantic and sexual decision these men make.

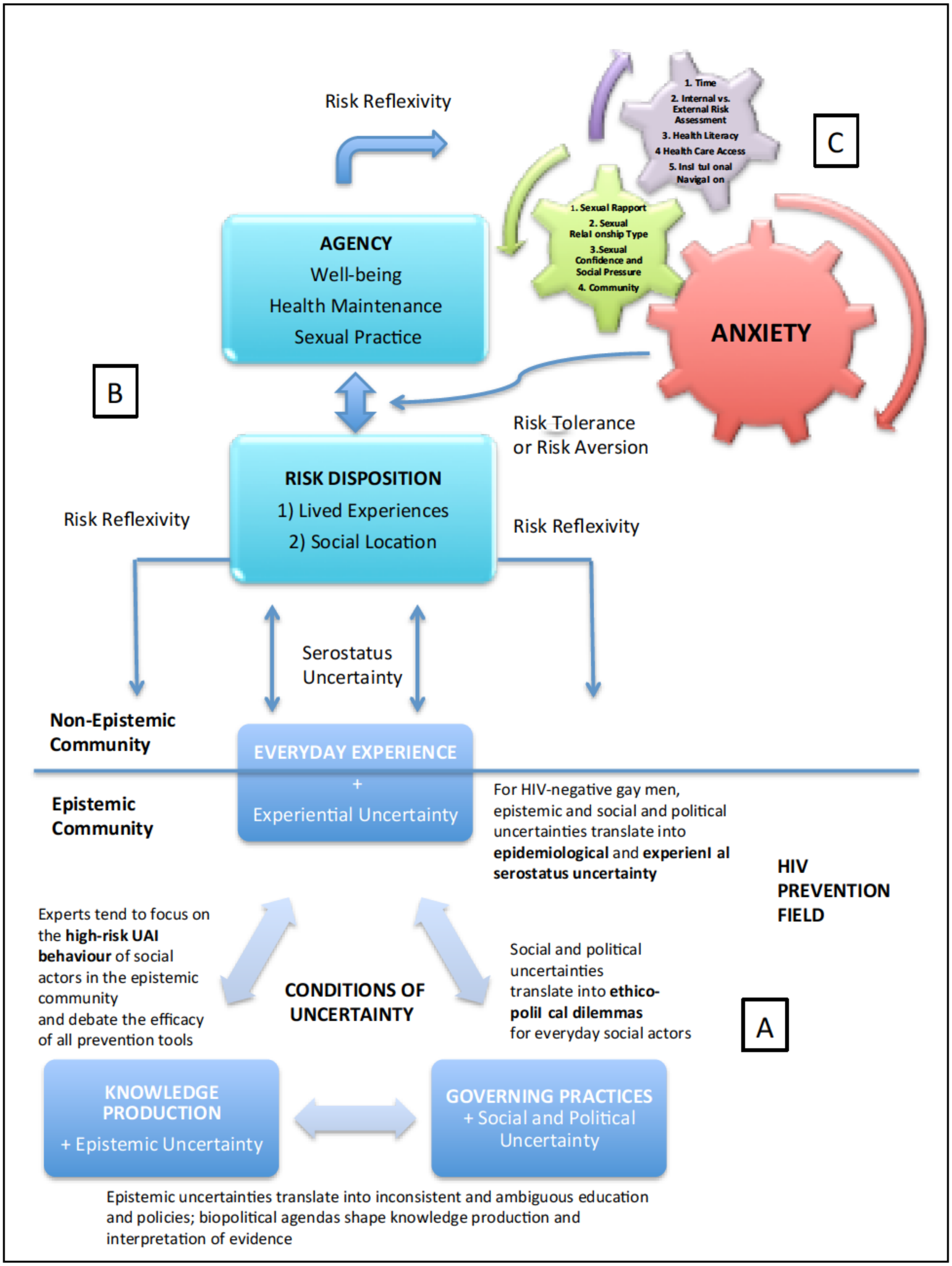
Arguing that HIV-negative gay men are greatly affected by the HIV epidemic, socially and psychologically, is not entirely original (Odets, 1995); but it's an argument that does bear repeating. Experiences of serostatus uncertainty can be absolutely corrosive to the well-being of HIV-negative gay men. Particularly difficult moments of serostatus uncertainty can permanently blemish how a social actor looks at his sexual relationships, making it a struggle for him to feel completely at ease and able to trust others. And during the transition to the biomedical era of HIV prevention, such experiences of serostatus uncertainty have been completely unavoidable among sexually active gay men—at a minimum there is always some residual risk. While some social actors develop a tolerance to this serostatus uncertainty, what the interview data primarily indicate is that even among the most tolerant and sexually confident of HIV-negative gay men, anxieties associated with serostatus uncertainty never dissipate and play a role in minimising the quality of life. For all of our advancements in the field, HIV remains a substantial burden weighing down on many gay men, HIV-negative and HIV-positive alike.

It is not necessary here to argue that such corrosion to one's well-being will inevitably lead to additional sexual risk-taking and more HIV incidence. I don't need to provide the above analysis with an epidemiological boost to make it relevant. Whether this relationship to additional sexual risk-taking is true or not for specific social actors does not alter the significant effect serostatus uncertainty has on the overall health and well-being of gay men, on HIV's overall capability to transform the life of those it hasn't even infected. Despite all of this, the above chapter has also demonstrated a social world where gay men consistently implement agency in the face of serostatus uncertainty. I shall conclude by summarising the key arguments behind this process.

Risk Disposition and Agency Under Conditions of Uncertainty

In this dissertation, I have been exploring various dimensions of uncertainty, demonstrating that the HIV prevention field has failed to achieve a stabilising point in its third decade. Figure 6.1 below summarises some of the key dimensions of this analysis, a representation of the map I introduced in part one to describe risk disposition.

Figure 6.1: Risk Disposition Theory and Conditions of Uncertainty



For HIV-negative gay men, epistemic and social and political uncertainties translate into **epidemiological** and **experiential serostatus uncertainty**

Experts tend to focus on the **high-risk UAI behaviour** of social actors in the epistemic community and debate the efficacy of all prevention tools

Social and political uncertainties translate into **ethico-political dilemmas** for everyday social actors

Epistemic uncertainties translate into inconsistent and ambiguous education and policies; biopolitical agendas shape knowledge production and interpretation of evidence

In section A of the diagram we see the workings of the HIV prevention field, the dynamic relationship between knowledge production, governing practices and everyday experience. Rather than achieving expert consensus, under conditions of uncertainty we have instead seen a proliferation of epistemic and social and political uncertainties and a lack of congruence among knowledge production and governing practices. For instance, in chapter three I discussed the conflicting and ambiguous knowledge, education and policies implemented on undetectable viral load. These uncertainties can then morph into the experiential domain and pose challenges for everyday social actors who have to navigate serostatus uncertainty in a pragmatic fashion.

Thus for HIV-negative gay men, the uncertainties associated with knowledge production and governing practices eventually translate into serostatus uncertainty, into either the abstract notion of being at-risk (epidemiological serostatus uncertainty) or the direct lived experience of being at-risk (experiential serostatus uncertainty). In this chapter, I have been focusing predominantly on experiential serostatus uncertainty to determine how HIV-negative gay men establish and re-establish their risk disposition and implement their agency over time, which is represented in section B of Figure 6.1.

By risk disposition, I am referring to a social actor's evolving relationship to HIV risk management that is a product of his social location and lived experiences, including all of his unique confrontations with the epidemic. It's the vantage point by which a social actor makes sense of the HIV epidemic and his place within it (noted by the risk reflexvity arrows in the diagram). It is through reflecting on one's risk disposition that a social actor comes to implement his agency, making decisions to keep or modify his health maintenance and sexual practices in ways that he believes best secures his well-being. These decisions then lead to additional lived experiences with serostatus uncertainty that then come to modify or solidify a social actor's risk disposition. Experiential serostatus uncertainty is not the only aspect affecting one's risk disposition. Abstract reflections on HIV risk management (epidemiological serostatus uncertainty, like blood donation policy), random cultural texts and social exchanges, and various moments of education all affect how a social actor thinks and responds to HIV risk management. Engaging with this dissertation as an interview participant or as a reader, for example, affects risk disposition. It affects the viewpoint, to some degree, by which HIV risk management and serostatus uncertainty are interpreted. (And, indeed, many interview participants described being very affected after engaging in the interview process.) However, I have argued that during moments of experiential serostatus uncertainty HIV-negative gay men tend to engage in *heightened* forms of risk reflexivity where they come to make sense of the evolving HIV landscape (i.e. section A of the diagram) and where they also come to determine their tolerance to serostatus uncertainty.

The dynamics affecting tolerance or aversion to serostatus uncertainty are noted in section C of Figure 6.1. During an at-risk moment these social conditions and dynamics produce or inhibit risk tolerance shaping how a social actor with a specific risk disposition implements his agency. A social actor is risk tolerant if he can manage serostatus uncertainty with relative ease and risk averse if he finds the management of serostatus uncertainty to be a burden. This assessment and management process can provoke strong anxiety in a social actor who struggles to manage serostatus uncertainty—a social actor who feels powerless in his ability to control the effects of the unknown, to competently confront these complex social conditions. For others, however, this anxiety is more palatable and serostatus uncertainty becomes a more mundane experience. In both instances, the felt degree of anxiety, and any other related fear based emotions that anxiety may blend into, must be managed. Social actors must make their decisions and act in the interest of avoiding or minimising the impact of future pain.

In this chapter, I have explored several intersecting factors that can affect tolerance to serostatus uncertainty, by generating social conditions that may either aggrandise or minimise anxiety among social actors. These dynamics are represented in section C of Figure 6.1, which demonstrates the intricate, shifting connections between various social factors that come to affect agency through tolerance or aversion to serostatus uncertainty. The entire process is a reflexive and evolving one. Social actors are continually reflecting on the social conditions that produce tolerance or aversion to serostatus uncertainty through anxiety, and adjusting their sexual practices to secure their well-being and avoid painful anxious experiences associated with serostatus uncertainty. In the language of in/capacity theory, anxiety thus serves as the bridge between agency and structure, shaping how social actors come to recognise serostatus uncertainty as a problem to manage.

The dynamics affecting tolerance or aversion to serostatus uncertainty that I explored in parts one and two of this chapter on health maintenance and institutional navigation are represented in the diagram in the top cogwheel of section C. The first element I discussed was time, with more social actors becoming more tolerant to experiential serostatus uncertainty as they move through adulthood. The second factor is whether a social actor assesses himself as being at-risk in the first place (thus demonstrating agency over his serostatus uncertainty) or whether he is prompted by external forces to consider himself to be at-risk (which can make him feel powerless in the face of serostatus uncertainty). The third factor is a social actor's sexual health literacy levels. More knowledge in and of itself does not always produce more risk tolerance (it can increase aversion, particularly among the more anxious). However, having access to knowledge and understanding risks *before* one is assessing and managing himself as being at-risk, can play a key role in determining how tolerant or averse a social actor will become and how he will manage an experience of serostatus uncertainty. The sixth factor involves the navigation of health care services. The easier this process is, the more comfortable and confident a social actor will be; unfortunately, this process is not always simple, especially for those moving across provinces or countries. Even the most popular health care services specifically targeted to gay men can cause repeated logistical challenges that make the management of serostatus uncertainty tedious, if not outright difficult. The more stressful the process of accessing health services, the more risk averse a social actor is likely to become. How easy or difficult it is to access PEP, including one's ability to pay for the high cost treatment and how difficult the experience of taking PEP is on the body, can play a fairly significant role in shaping the risk tolerance of a social actor. Related to these issues of health care access is a broader reflection on institutional navigation. How easy or difficult it is for a social actor to manage other governmental bureaucracies, especially immigration services, can also shape risk tolerance. Those seeking permanent residency tend to display some more aversion to serostatus uncertainty as they remain highly concerned with how an HIV-positive diagnosis might affect their citizenship applications.

In part three of this chapter, I explored various dimensions of sexual practice, a consideration of sex acts in context. The middle cogwheel in section C of Figure 6.1 represents this dynamic. The risk disposition of HIV-negative gay men is constantly being altered as they reflect and come to understand their own sexuality in relation to changing cultural norms and forms of sexual and intimate expression. A social actor's response to various sexual practices (that is, how he implements his agency through his sexual practices) may adjust in response to shifting social conditions that shape the *meaning* associated with different sexual exchanges.

I examined several major social factors affecting sexual practice. First, the more rapport, intimacy and trust a social actor has with his sexual partner(s) the more tolerant he will tend to be to any serostatus uncertainty associated with a particular sexual relationship or sexual experience. Serostatus uncertainty may remain a burden, but the type of sexual relationship and the specific nature a social interaction may allow him to moralise his behaviour more favourably and thus accept a window period navigating some doubt. Second, the more confident a social actor is with himself as a sexually active man, which to some degree means evaluating his sexual practices in relation to multiple competing sexual scripts on gay male sexuality, the more likely he is to be tolerant to the serostatus uncertainty associated with the sexual scripts and narratives that *he chooses* to enact. This may also mean developing a level of comfort or confidence in the sex a social actor chooses *not* to have in the interest of securing his well-being—whether this is to avoid serostatus uncertainty or simply because he is less interested in multiple sexual relations. And finally, a proximity to gay male community, as well as to hyper sexualised milieus, can play a key role in how gay men moralise serostatus uncertainty, sexual risk-taking and how they assess and accept new biomedical knowledge (a theme I will be exploring much more closely in the next chapter). One's unique location to gay male communities and, most importantly, to other cultural communities, shapes the viewpoint by which serostatus uncertainty and HIV risk management are interpreted. HIV-negative gay men make sense of HIV risk management not just as gay men, but also through the lens of multiple social roles and community affiliations.

As is clear from Figure 6.1, a social actor's risk disposition is not a stagnant entity, but an ongoing process based on a continual reflection on sex, health and institutions. It is a complicated and nuanced process involving multiple moving, intersecting parts that denies researchers the capability to make easy classifications and generalizations about HIV-negative gay men and risk. Gay men's relationship to HIV risk management, their risk disposition, is not reducible to their sexual risk-taking and an interest in unprotected anal intercourse with casual partners—that is part of the story, no doubt, but certainly not all of it. Their risk disposition is structured by multiple social interactions, including sexual and non-sexual events. A call from a public health nurse, filing for permanent residency, befriending an HIV-positive man, joining a group of polyamourous hipsters, or moving to a new city, can dramatically change how a social actor thinks and relates to HIV risk management and how serostatus uncertainty affects his well-being.

At a given moment, specific social conditions may make a social actor more accepting of some serostatus uncertainty and then a series of unfortunate events—that is, aggressive "HIV scares"—may make a social actor extremely risk averse. The severity of the "scare" can be initially rooted in the perceived biomedical risk associated with the sex act that produces the serostatus uncertainty. But as I have been at pains to demonstrate, it is the social conditions shaping the sexual exchange and subsequent access to health care that can structure a moment of experiential serostatus uncertainty into a "scare" or make it a more manageable phenomenon. A condom rupture can be a minor incident or a devastating disaster based entirely on social context.

As a result of these diverse social conditions, sometimes the anxiety associated with serostatus uncertainty is more easily manageable and sometimes it is more crippling. The severity of the emotional pain and the logistical effort associated with managing an instance of serostatus uncertainty will determine how a social actor responds to serostatus uncertainty and sexual relations in the future. Part of growing up as a gay man (or, in fact, a social actor from any higher risk milieu) requires continually reflecting on one's at-risk status and determining one's tolerance or aversion to serostatus uncertainty at a given moment. This process plays a role in future decision-making, including decisions to having riskier sex or abstain from sex entirely. Reflecting on one's risk disposition also plays a role in how social actors understand and respond to the various epistemic and social and political uncertainties associated with HIV prevention, as will become even clearer in the next chapter.

The type of reflexvity that I have been discussing in this chapter is the cornerstone of risk society theory. As gay men are implementing their self-identity, they must continually reflect on the serostatus uncertainty their sexual choices pose, while also responding to shifting knowledge and altering social institutions—that is, to reflect on section A of Figure 6.1. Everyday social actors are asked, in some sense, to think about the world sociologically, to examine their own behaviour in relationship to larger group dynamics and to come to some sort of evaluation on what risks and forms of self-identity may be morally justified. Indeed, the men arrived to the interviews relatively prepared to discuss their unique perspectives on gay male sexuality and HIV risk, arguably demonstrating how prevalent this form of self-reflexivity is for younger generations of gay men. Part of establishing one's self-identity in a risk society means being prepared to discuss and defend one's self-identity, to discuss and defend one's risk management decisions. For gay men, this means being capable of discussing our experiences and opinions on

HIV risk management and sexual practices, of sharing our risk dispositions.

Relatedly, this form of confessional work demonstrates aspects of governmentality or biopolitical risk governance (Foucault, 1978/1990). These men have internalized HIV risk management principles into their lives and have come to "conduct their conduct" by thinking of themselves as at-risk subjects—that is, at a minimum, they always consider their epidemiological serostatus uncertainty. Consequently these men are always potentially ready to reveal themselves to expert authorities (medical authorities, but also, in this instance, a graduate researcher) vis-à-vis discussing their sexual practice. Several participants discussed getting tested while on vacation or getting tested when there was no obvious biomedical reason to do so. The idea that proper biological citizenship means clarifying one's serostatus, even when it is very inconvenient to do so, is deeply ingrained in these men's sense of self. Failure to do so may be considered to be morally egregious by many (Geary, 2007).

And indeed, I have not been able to discuss the risk disposition of gay men without continually alluding to the moral dimensions of risk and uncertainty characteristic of cultural perspectives on risk. Following Douglas, it is clear that there can be no reference to a risk that does not imply blame and responsibility. All of the risk reflexvity arrows in Figure 6.1 are, in some sense, an evaluation of whether or not a specific social practice is morally good or bad. What actually constitutes moral conduct is not pre-determined based on objective empirical truth, but is a product of how the various dynamics I discussed in this chapter play out at a given moment in time. The moral dimensions of HIV risk management are always constructed in and through a subjective interpretation of the epidemic, through one's risk disposition. This is rooted in the subjective lived experiences navigating this epidemic as an at-risk subject and not necessarily in the scientific reality described in biomedical journals. Inclined to locate fault for an occurrence of serostatus uncertainty, sometimes social actors blamed others, like specific sexual partners who failed to disclose their HIV statuses (more on this in the next chapter). But most often, social actors blamed themselves for failing to manage risk effectively enough to prevent serostatus uncertainty and for putting themselves in harm's way (even though, they have effectively prevented HIV transmission). Risk disposition is thus fundamentally characterised by a moral appraisal. Navigating the map requires a moral compass, with the needle normally pointed directly at the self.

In other words, the lack of a stabilising point in the HIV prevention field produces social conditions where serostatus uncertainty remains an unavoidable and painful experience. However, at-risk gay men often evaluate their behaviour *as if* the HIV prevention field had achieved a stabilising point, *as if* it was clear how to completely eliminate serostatus uncertainty (that is, as if the dynamics expressed in section A of Figure 6.1 did not exist). Thus social actors are far more likely to blame themselves and other gay men for these experiences, rather than thinking about the limitations of knowledge production and governing practices. Indeed, quite strikingly, very few participants (less than five) were able to recall a single HIV prevention campaign that they found effective, demonstrating, at least among those less connected to the HIV epistemic community in Canada, a lack of awareness of the HIV prevention field's work. While some participants were more critical of the existing HIV prevention landscape (some offering critiques of education campaigns or policies, as I will discuss in the next chapter), overwhelming criticism was directed internally and to interpersonal exchanges, rather than toward the existing HIV response—a response most of my participants actually knew very little about.

To close, by exploring the experiential dimensions of the uncertainty triad, I have been arguing in this chapter that all HIV-negative gay men have a unique relationship to HIV risk management that comes to determine how they implement their agency and secure their well-being. During moments of experiential serostatus uncertainty, HIV-negative gay men come to read the evolving HIV landscape and their place within it. And while aspects of this risk reflexivity are present above, we still need to more closely examine how gay men are responding to some of the most significant changes to HIV knowledge and governing practices during the transition to the biomedical era of HIV prevention. That is, we need to explore HIV-negative gay men's reactions to the benefits of HIV treatment (i.e. ART) on prevention. Thus in the next chapter, I will continue this analysis of risk disposition to investigate how the epistemic and social and political uncertainties associated with biomedical prevention translate into complicated ethico-political dilemmas for men navigating serostatus uncertainty.

Beliefs are what divide people. Doubt unites them.

-Peter Ustinov

Chapter Seven

Beyond Epidemiological Risk Factors

HIV and the Social and Ethico-Political Dimensions of Sexual Practice

Throughout this dissertation, I have been arguing that in Canada experts have failed to reach a consensus on key HIV prevention issues during the transition to the biomedical era of HIV prevention, especially with regards to the risk reduction benefits of emerging biomedical technologies. Relatedly, I have been demonstrating the variable ways that young HIV-negative gay men have been affected by serostatus uncertainty in the third decade of this epidemic. Guided by the uncertainty triad that I developed through a close reading of critical social science literature on HIV and critical risk and uncertainty studies, I first evaluated mainstream scientific literature on gay men to see how HIV experts have been managing the epistemic uncertainties associated with research on the prevention benefits of ART, particularly the impact of undetectable viral load on HIV transmission. I paid particular attention to the ways in which risk factor research has problematized the behaviour of gay men in relation to new prevention tools, namely through the AIDS optimism and treatment optimism theses. These epidemiological hypotheses argue that gay men are more likely to engage in sexual risk-taking (unprotected anal intercourse in particular) if they believe that new HIV medications can turn an HIV infection into an easily manageable condition and that ART's effect on reducing viral load levels can eliminate possibilities for transmission during serovariant sexual relations.

From here, I proceeded to analyse critical social science literature on HIV to discuss the ways in which gay men have altered their sexual practices over the course of the epidemic in response to emerging biomedical technologies. Drawing on queer theory, community education examples and activist art, I also began to discuss the complex social and ethico-political dimensions of HIV prevention. I focused on how issues of serosorting (selecting sexual partners with the same HIV status as a way to minimise risk) may be considered to be a form of discrimination against HIV-positive men, a form of sexual practice that fosters HIV stigma.

Focused on the experiential dimensions of the uncertainty triad, I then moved on to examine how HIV-negative gay men experience serostatus uncertainty in their everyday lives during the transition to the biomedical era of HIV prevention and how consistently managing serostatus uncertainty affects their overall well-being. Through this analysis, I discussed how young gay men develop their risk disposition (a social actor's evolving relationship to HIV risk management that can be described through his risk reflexivity and risk tolerance levels) and how they implement agency in response to serostatus uncertainty. I explained how a series of overlapping factors come to create favourable or unfavourable social conditions for managing serostatus uncertainty that social actors then reflect on to determine the degree of serostatus uncertainty that they are willing to tolerant going forward. Risk tolerance is cultivated over time when a social actor feels more in control about his sexual health, when it is easier for him to navigate health services and governmental bureaucracy and when he has more confidence in his sexuality and rapport with his sexual partners. Moments where these intersecting social factors present more challenges for social actors can increase feelings of anxiety and risk aversion, and consequently corrode overall well-being.

In this chapter, I shall extend upon these ideas to investigate how some of the major debates in the HIV prevention field during the transition to the biomedical era of HIV prevention—namely AIDS optimism, treatment optimism and the ethics of HIV status disclosure (as both a more general ethical issue and a legal issue)—figure within the lives of the participants of this study. At the core of all of these issues is the perceived risk associated with serovariant sex and the ethico-political dimensions of serosorting. The various participants in this study shared different opinions on these issues, which were dependent on their particular risk disposition and tolerance to serostatus uncertainty.

Below I will argue that there are certainly currents of AIDS optimism and treatment optimism (that is, biomedical optimism) among some HIV-negative gay men and some men do carry strong opinions about HIV status disclosure, considering it to be absolutely imperative on the part of HIV-positive men. However, while these issues may affect a social actor's decision to serosort or not, among the participants of this study, forms of biomedical optimism or the legal obligation for HIV-positive men to disclose their serostatus are not generally used as justifications for having higher risk, condomless sex. Furthermore, among the research participants who are aware of newer biomedical advancements, many are actually quite apprehensive and critical, sometimes even avidly pessimistic, about the role of new biomedical advancements to mange serostatus uncertainty. There are also a significant number of participants who were entirely unaware of these advancements and their role in the management of HIV risk. I shall critically reflect on why this might be the case, first by examining the implications of AIDS optimism, then treatment optimism and then finally the ethico-political dimensions of HIV status disclosure. From here, I shall also briefly touch upon the issue of the criminalisation of HIV non-disclosure.

The principal point to consider throughout this chapter is that more than being an individual health issue, HIV remains a complicated social and ethico-political issue that is, primarily, about relationships (friendships, hookups, lovers and life partners). As discussed in the previous chapters, mainstream biomedical and public health research tend to examine the epidemic from the point of view of individual behaviour, with risk factor research aiming to correlate a social actor's demographics, attitudes and medical history with his propensity to engage in higher risk sex. Community organisations then take these points of view and the latest risk assessment research on prevention techniques to develop education campaigns modeled on a risk calculator approach. This turns gay men into neoliberal sexual actors (Adam, 2005), into social actors who must manage serostatus uncertainty by thinking about sexual health and well-being through a capitalist logic of self-interested risk assessment.

However, sexuality is, primarily, about social relations. Hence critical social scientists like Kippax have been arguing for the need to better understand the *sexual practices* of gay men—to understand the broader *intersubjective* and cultural contexts where sexual decision-making and action are occurring—in order get a more robust picture of the risk management choices of gay men that does not reduce them to self-interested risk calculators (Kippax & Race, 2003; Kippax & Stephenson, 2005). By focusing on sexual practice, we are not simply examining what these at-risk men are doing sexually (that is, their behaviours). Rather, we are closely investigating how they are moralising and debating the implications of their actions. We are investigating the broader conversations, debates and ruminations they are having that come to influence their perspectives on sexuality, health and HIV (Race, 2014). We are focusing on how HIV-negative gay men not only aim to assess risk "objectively" (that is, biomedically), but also how they assess serostatus uncertainty ethico-politically; that is, what *meaning* do *particular* sexual behaviours have at *particular* times for social actors with *particular* risk dispositions.

Thus in the following chapter, I will examine how at-risk social actors must simultaneously reflect on how their sexual decision-making affects their own health *and* how their sexual and intimate decision-making affects the health and well-being of others, including

HIV-positive men. Beyond a desire to remain HIV-negative, at-risk gay men must consider what is morally right and what is socially necessary during the transition to the biomedical era of HIV prevention. This can be a difficult exercise when a risk averse gay man wishes not to reinforce viral apartheid (socio-political divisions between HIV-negative and HIV-positive men) by perpetuating HIV stigma, but is conflicted by the uncertainties associated with contemporary risk management strategies.

In sum, during the transition to the biomedical era of HIV prevention we have seen a proliferation of epistemic and social and political uncertainties associated with emerging biomedical technologies. The lack of consensus among HIV prevention researchers and the limitations of our existing knowledge practices have led to a series of ambiguous and conflicting governing practices (education, communications, legal policies, etc.). In order to consider the epidemiological effects of such uncertainty, HIV prevention researchers have developed risk factor hypotheses that assume that gay men are more likely to minimise the epistemic uncertainties associated with biomedical research in the interest of having unprotected anal sex. While logical, these theories reduce the complexity of gay male social relations and sexual exchange—they eclipse the social elements of gay male sexual practice. In this chapter, I aim to rectify this erasure.

In so doing, I will investigate how the epistemic and social and political uncertainties that are generated as a result of biomedical technologies translate into complex experiential uncertainties at the everyday level. I will explore how the ambiguity of the risk reduction benefits of ART translates into pragmatic decisions about serostatus uncertainty and sexual risk negotiation among gay men. As a work of critical social science, this chapter draws on some of the key principles of institutional ethnography. It uses the lived experiences of social actors and the complexity of evolving sexual practices not frequently observed in the HIV prevention field, to question the limitations of ruling forms of knowledge and key ruling relations. Similarly, following Boltanski (2011), this chapter may also be conceived of as critical because of its emphasis on the everyday moral judgements of social actors in order to question hegemonic systems (in this case, mainstream HIV prevention science). Through this critical analysis, I will offer a more complete picture of the connection between knowledge production practices, governing practices and everyday experiences during the transition to the biomedical era of HIV prevention. I will expose the intricate connections between epistemic, social and political and experiential uncertainties that we can only observe when we enlarge our view of the social by focusing on social actors and social practices less prevalent in our ruling forms of HIV prevention knowledge.

AIDS Optimism, Serosorting and the HIV Stigma Cycle

In chapter three, I introduced the idea of AIDS optimism, a risk factor hypothesis which argues that because HIV has shifted from a certain death sentence to a chronic manageable condition, gay men are more likely to take sexual risks. I have already examined some important critiques against the AIDS optimism thesis in chapter three (Adam et al., 2005). However, the idea that younger gay men from the "Post-AIDS generation" may care less about HIV because of new treatments still tends to circulate (even among those men who participated in this study) and continues to play a role in epidemiological reporting on the epidemic in Canada (Lambert et al., 2009; Public Health Agency of Canada, 2011b; Remis et al., 2014). Therefore, it is necessary that I take a moment to reflect on whether or not these young social actors are truly AIDS optimistic.

All of the participants in this study were aware that HIV could be considered a "chronic manageable condition," though some had not heard of this term specifically. Most, particularly those without close friends who are HIV-positive, had very little idea of what it is actually like to live with the virus. However, all of the participants understood the general implications of the term "chronic manageable condition," agreed that an HIV diagnosis was not the death sentence that it once was and understood that there have been improvements to treatment. Certainly this helped to ease some anxiety over a potential diagnosis, especially for those managing experiential serostatus uncertainty and in the throes of an "HIV scare," as can be noted in these comments from Paul.

> Interviewer: How do you think you would handle an HIV-positive diagnosis?
>
> Paul: Um, to be very honest with you, I would look at it the same way I looked at [my] depression. Um, it is debilitating, yes, but manageable. It's something that I live with. It's there.

As another example, John suffered from extreme anxiety about seroconversion for years, which caused him to avoid getting tested for an extended period of time despite having unprotected anal sex with multiple partners of unknown serostatuses. However, after a close friend of his seroconverted. John found out more about what it is like to live with HIV and how it can be managed. This connection to someone who was HIV-positive personalized the epidemic and broke down some of the mystery and stigma attached to the virus. Seeing his HIV-positive friend persevere made John feel more comfortable with his serostatus uncertainty and he eventually began to get tested more regularly.

Thus in this instance, "AIDS optimism" actually helped a social actor to manage and potentially reduce risk (through testing) and was not used to increase or justify further sexual risk-taking as some epidemiologists have posited. Indeed, while John found the idea of HIV as a chronic manageable condition incredibly helpful, he still had realistic expectations of what it would be like to live with the virus.

> John: Yeah. Um, the idea of it being a manageable condition is the idea of like, taking like a set number of pills every day. Um, yes, the pills can be large, and yes, it's more than just like taking a vitamin or two. Um, but my kind of free-floating fear and anxiety, um, before I kind of got educated was really just, you get your diagnosis and then what's left of your life is this like, horrible wandering in the darkness, waiting for the end of the world, waiting for [the] inevitable.
>
> And so the idea of it being manageable, to me, is um, to me it kind of lights up that darkness because you get your pill regimen, you see your doctor regularly, uh you have agency over what's going on in your body in terms of knowledge, you know? You know what your T-cell count is. You know how to control different levels of things in your body. Um, you are on top of keeping your body in good physical shape.

Whereas John would have once seen an HIV-positive diagnosis as eroding his agency, the fact that HIV-positive persons can now have more control over their health makes him feel more in control and feel more capable of addressing serostatus uncertainty as an HIV-negative man. He has become more risk tolerant, because he feels more capable of managing the uncertainties associated with an HIV diagnosis.

What this indicates is that gay men can use the idea of HIV as a "chronic manageable condition" as an emotion management strategy of sorts, a form of "rationalisation" that helps to alleviate anxiety. That is, an at-risk subject can rationalise that if he did become HIV-positive, he would be able to survive. This makes the window period and waiting for test results more bearable. Knowing more about how to manage and live with an HIV infection makes serostatus uncertainty feel less troubling. However, this does not mean that at-risk social actors lack concern over HIV because of its manageability or that they do not continue to suffer from tremendous anxiety over seroconversion. If anything, it demonstrates the exact opposite. Young HIV-negative gay men do in fact continue to carry very strong fears about seroconversion that they must manage. The idea that HIV is a manageable condition is one such rationalisation process that can be used to manage this anxiety.

However, despite this hint of "AIDS optimism" (i.e. "HIV is unlikely to kill me"), no participant in this study discussed having unprotected anal sex because they thought that living with HIV would be easily manageable or an insignificant life change. No one is apathetic or ambivalent about what an HIV diagnosis would mean. All of those interviewed recognise HIV as a very serious medical condition. Some, such as Michael and Jeremy, did discuss how an HIV-positive diagnosis might actually be sexually liberating, because they would no longer have to be concerned about getting HIV and could potentially engage in condomless sex (with other HIV-positive men) in the future without worrying. However, these thoughts contradict some of the severe anxieties they expressed when dealing with serostatus uncertainty. Michael, for instance, has had moments of strongly felt anxiety after thinking about the potentials for transmission from mutual masturbation, since seminal fluid may have landed on the deep cuts found on his hands that he routinely has from work. This is not necessarily a completely illogical response. However, it is not the most probable mode of transmission and demonstrative of some risk aversion.

Many participants were very critical about how easy it is to manage an HIV infection. Take this passage from Denis as an example:

> Denis: I guess, as a little footnote, I know they say now it's not a death sentence; you can live quite a long time with HIV. But at the same time, um you know, when you go on the regimen of pills, whether it's three-a-day, or the one-pill-a-day treatment, right, it's not all hunky dory, right? You know, you don't just live with no side-effects. You know, being on HIV antiretrovirals are, you know, they have a lot of physical consequences to them, right? You know, they make you sick and, you know. And I think, like, that would really limit your dating pool. I think I would be ashamed to, like even having my family know, 'cause you know like, when you hear

> of HIV, you automatically assume like, you know, it's the gay disease, right? And, I don't really know how to phrase it, but I just feel that they would almost look at it as my fault, maybe.

Similarly, Nick feels that we simply do not have enough information on the longer-term effects of being on HIV medication for decades; a position which, indeed, is an appropriate assessment of our current biomedical research (Cahill & Valadéz, 2013). Living with HIV is not always easy, as I first discussed in chapter three (CATIE, 2009, 2013; Gagnon & Stuart, 2009; Perrson, 2004). There are many uncertainties associated with an HIV prognosis, with a potential for a lifetime of episodic disability. If a social actor is averse to uncertainty as an HIV-negative man, an HIV-positive diagnosis would mean having to confront health related uncertainties on a more consistent basis—which would be fairly difficult for the risk averse social actor, even those who can rationalise the manageability of an HIV infection. As noted in Denis' comments above, beyond the actual physical health concerns, participants were also very worried about the social stigma attached to an HIV diagnosis.

> Ryan: Um, no. I think it is because society makes it so [that HIV] is, you know, kind of one of the worst things you can have in life, you know? Um, it is incurable also: that is one thing. But I think… I think of HIV as being worse than other diseases.

And some feared that a diagnosis would be an incredibly isolating experience.

> Mario: Hmm, I think it's the fear of isolation from the world, people thinking they don't want to touch you, hold you, hug you.

Many of the participants felt that, while they would be able to physically survive living with HIV, the disease would greatly limit their ability to take other social risks (such as adventurous travel and sudden career changes) because they would have to be more cognisant of their health needs. The infectious nature of the disease frequently raised concerns about how HIV would affect future intimate relationships, as expressed by Ryan.

> Interviewer: What would be your main concern about living with HIV?
>
> Ryan: Uh, to not be able to have a relationship.

Since many of these HIV-negative gay men serosort as a way to reduce risk, they are very aware that living with HIV would mean having to routinely deal with facing sexual and romantic rejection. Indeed, serosorting is a key dimension of these social actors' risk disposition, a fundamental way in which they understand their relationship to HIV risk management. Experiences of serostatus uncertainty are considered to be more manageable if these HIV-negative social actors believe that they have not had sexual relations with HIV-positive men (regardless of whether or not this is actually true). Thus serosorting isn't just an available prevention tool. For many, it is an absolutely vital component of effective risk management, regardless of other contextual factors. Serosorting is prevention.

Thus serosorting is an important element for understanding HIV as a chronic manageable condition, because it fundamentally shapes how HIV-negative gay men interpret the *social implications* of living with HIV. Continually dealing with romantic and sexual rejection by HIV-negative men is one of the things that HIV-positive gay men must manage.

Importantly, those HIV-negative participants who serosort do not lack empathy for HIV-positive men or do not struggle to make sense of the ethics of serosorting. For example, here is a comment from Francis who is reflecting on his decision to not carry on a relationship with an HIV-positive man. While reading this passage, it is important to consider the other elements of his risk disposition discussed in chapter six, including his difficult experience on PEP and his fears surrounding his precarious immigration status.

> Francis: And then I thought, what I did was just like rejecting him. And I'd put myself in a [HIV-] positive person's shoes and who would have this constant dilemma of like, if I tell you that I'm positive, maybe you're going to freak out and reject me. If I don't tell you, knowing that I'm not contagious and I'm taking this treatment and I [pose] absolutely no risk. And if I don't tell you, I'm not going to be fully honest with you, but it's [not] the real problem because I'm not contagious, so...
>
> And I was starting to feel for those people. I was like, what would I do? Would I tell or would I lie? … Because I was like, this [HIV–positive] guy's being honest with me. He told me on his own [that he is positive], like he's the one who said I have to tell you something. He's being honest and my reaction was like rejecting him. And I had issues with that.

As another example, Nick is well aware that his preference for serosorting is somewhat hypocritical and reproduces HIV stigma. However, his risk disposition has been characterised by tremendous anxiety around serostatus uncertainty and an absolute reliance on serosorting practice.

> Nick: I think the biggest concern [i.e. with becoming HIV-positive] would be negotiating the stigma. And like, I'm a hypocrite in that regard. Like, I just won't sleep with someone who self-identifies as positive. I can't bring myself to do it. And I'm aware that that's what I would then be looking at in terms of my own dating and personal life and having to navigate that would suck.

Both Francis and Nick are aware of the risk reduction potentials of undetectable viral load (more on this below) and the higher risk potentials associated with undiagnosed men. Yet, due to their risk aversion, they both could not overcome the serostatus uncertainty associated with serovariant sex. Their risk disposition is fundamentally based on serosorting. There is no other relationship to HIV risk management, at least at the time of the interview, that they see as manageable or effective. Serostatus uncertainty after an instance of serovariant sex would, for these HIV-negative men, be experienced as nearly unbearable. The anxiety would be crippling considering their anxiety in instances of *seroconcordant* sexual relations has also regularly corroded their well-being. This does not mean, however, that these social actors do not struggle with their risk management choices, as they recognise the limitations of their decisions from both a biomedical *and* an ethico-political perspective. Indeed, part of what is producing their fear of serostatus uncertainty is *their* very own reaction to HIV-positive men, which they recognise as a form of stigma or social discrimination.

This is the *HIV stigma cycle*. The stigma, discrimination and social isolation that HIV-negative gay men perpetuate through their fear and sexual-intimate avoidance of HIV-positive men causes them to greatly fear their own seroconversions for fear of eventually being the target of such stigma and discrimination. This fear increases risk aversion, which then serves as a justification for serosorting, which then heightens the fear that living with HIV will be an isolating experience. Put differently, if a social actor serosorts to reduce risk, he knows from lived experience that becoming HIV-positive will mean having to deal with sexual and romantic rejection (from men like him). However, this only further confirms the belief that an HIV infection will lead to social isolation, thus offering him a rationale for why he must be risk averse and serosort.

Fundamentally, HIV-negative gay men’s perceptions of how easily an HIV infection can be managed includes their understanding of the social challenges of living with HIV, the potential for continually facing romantic and sexual rejection, in addition to biological uncertainty. Thus the "manageability" of an HIV infection is reduced by the inevitable stigma that will be faced after a diagnosis. Among the participants interviewed for this project, there tends to be a direct link between those who serosort and those less likely to accept HIV as an *easily* manageable condition. Those who do not serosort as much are more likely to consider living with the disease manageable from both a biological and a social perspective, though they do not necessarily deny the hardships of living with HIV.

Nonetheless, and quite importantly, participants of this study who are not serosorting and who have more optimistic beliefs about living with HIV are *not* abandoning the use of condoms in serovariant sexual relations just because they thought that HIV is easily manageable. We should not deny that there may be some social actors who do rationalise having unprotected anal sex because of the effectiveness of current treatments. However, this study contributes to critical perspectives on HIV prevention that suggest that AIDS optimism is not often a key motivation for sexual risk-taking among HIV-negative gay men despite the repeated claims made in major epidemiological and public health reporting that I discussed in chapter three. Rather than serving as a justification for unprotected anal sex, this study demonstrates that AIDS optimism can play a role in encouraging some HIV-negative gay men to get tested (which is a favourable outcome), to feel more risk tolerant and to be more comfortable with serovariant sex.

The benefits of ART in helping those infected with HIV lead longer, more fulfilling lives has fostered additional social and political uncertainties, namely that the manageability of the virus will lead to more HIV incidence. Research practices (i.e. the AIDS optimism thesis) and governing practices (i.e. "It's Never Just HIV" campaign explored in chapter three) aim to respond to these concerns, while simultaneously also replicating them, keeping "AIDS optimism" as a salient truth about gay men and risk-taking, despite unconvincing empirical evidence. In reality, HIV-negative gay men perceive the uncertainties associated with an HIV diagnosis with more reflexive nuance. These social actors recognise the benefits of ART, but still consider HIV to be an extraordinarily difficult health issue, one that continues to produce incredible anxiety. In the interest of managing serostatus uncertainty, many of these men will not only continue to use condoms, but they will also seek to serosort as a way to minimise risk. This produces internal conflict among HIV-negative gay men who recognise the ethico-political limitations of fostering HIV stigma and reifying viral apartheid. The AIDS optimism hypothesis, as an epidemiological theorem, simply does not capture these social complexities. The same is true for the treatment optimism theory, the next topic I shall explore.

Undetectable Viral Load, Treatment Optimism and Serosorting

As discussed in chapter three, the AIDS optimism thesis has a parallel hypothesis in the field: treatment optimism. Also stemming from risk factor research, treatment optimism correlates optimistic beliefs about the role of new HIV medications on HIV transmissibility with the likelihood of a social actor engaging in unprotected anal intercourse. Like the AIDS optimism thesis, the general concern among those in the HIV prevention field is that gay men will use new knowledge about undetectable viral load to justify having condomless anal intercourse (Rapid Response, 2014). This could ultimately lead to an increase in HIV incidence, as well as other STIs, including antibiotic resistant stains. Thus treatment optimism research is concerned that the adoption of information about the risk reduction potential of undetectable viral load into sexual practice can, somewhat ironically, lead to more risks to population health.

As I discussed in chapter three, HIV prevention experts have continually produced and cultivated uncertainty when it comes to the risk reduction benefits of undetectable viral load. Researchers have either minimised or aggrandised the epistemic uncertainties associated with existing research on this issue in the interest of achieving their particular biopolitical agendas. Governing practices have also remained fairly mixed as experts worry what effect these epistemic uncertainties might have on HIV incidence. Many community organisations in Canada have taken a fairly cautious approach to communicating the benefits of information on undetectable viral load. No doubt, during the transition to the biomedical era of HIV prevention, information targeted to gay men about undetectability has been very ambiguous. Under these conditions of uncertainty, HIV-negative gay men are supposed to be mindful that serosorting is not necessarily effective prevention, that untested men pose the most risk and that undetectability may reduce risk, while also being cognisant that the scientific data on these issues is not yet clear and that a reliance on undetectability may lead to increased HIV incidence. This epistemic and social and political uncertainty cultivated by the HIV prevention field is something that must be negotiated by gay men in their everyday lives.

Moreover, in the HIV prevention field, the general concern that emerging biomedical technologies will be used erroneously by gay men often extend beyond undetectable viral load debates to include other biomedical technologies like PrEP and PEP. All of these tools are undoubtedly helpful, but experts frequently worry about how gay men may be abusing them in the interest of having unprotected anal intercourse. In this section of this chapter, I will explore the participants' different reactions to biomedical technologies and undetectable viral load, starting with those with limited sexual health literacy.

Limited Sexual Health Literacy and Biomedical Prevention

Despite the concern that gay men will use new biomedical information to justify sexual risk-taking, among the participants interviewed for this study, there were quite varied reactions to the notion of undetectable viral load that provide clear challenges to the treatment optimism hypothesis. Indeed, in terms of awareness and acceptance of the concept of undetectability, there were several different reactions. The first type of reaction comes from those men who knew nothing about undetectable viral load.

> Interviewer: Do you know what that is?
> Anthony: Undetectable?
> Interviewer: …Viral load?
> Anthony: No.

There were several participants who had never heard of the term or other key biomedical terms in the field such as treatment as prevention, PEP or PrEP.

> Chris: What, what is [that]?
> Interviewer: PEP or PrEP?
> Chris: No, never heard that term before.

A limited understanding of the concept of undetectable viral load often meant generally lower levels of sexual health literacy across all issues. However, there were instances where participants were aware of some of these prevention tools like undetectability and PrEP, but not others like PEP (or vice versa). While this category of participants with limited sexual health literacy represented the minority of those interviewed, it was striking how little some of these participants knew about these "key" concepts, which are considered foundational to HIV prevention and gay male sexual health. For example, very few knew what treatment as prevention meant even if they were aware of undetectable viral load—though the idea of treatment as prevention has been a governing concept in the field in Canada for over a decade (Montaner et al., 2010).

This dynamic certainly points to the need for better HIV education among gay men. However, it also demonstrates how the assumption that gay men are highly literate when it comes to sexual health matters—what Race (2003) would describe as scientifically active men–is not necessarily an accurate portrayal of *all* gay men. Epistemic communities of research production and education that focus on the realities of those more tightly networked with ASOs or hyper-sexualised spaces like bathhouses where much HIV education work in Canada occurs, or with HIV-positive gay men and men in longer-term serovariant relations, do not represent the lives of all gay men. This is not an argument that HIV-negative men outside of ASO networks are unaware of HIV prevention techniques or are uninterested in new biomedical developments. However, what the data from this study indicate is that during the transition to the biomedical era of HIV prevention in Canada, as prevention education efforts have concentrated on higher risk individuals, some gay men who are less attached to certain gay male social and cultural spaces (particularly hyper-sexualised spaces like bathhouses) and who do not personally know any HIV-positive men (who are out about their serostatuses, at least) or who are not as closely affiliated with the HIV service industry, are less likely to be aware of newer HIV technologies and prevention debates.

For example, many of the participants knew very little about PEP. This is rather troubling when we consider that PEP has been available in Canada for over a decade. Interestingly, this also includes participants who are quite sexually active and well connected to sexual communities. For instance, Ben did not know what PEP was despite being active in the queer activist milieu and John had only just recently learned about PEP from a poster in a bathhouse. Moreover, very few participants knew what PrEP was at the time of the interview. The interviews happened in the fall of 2013, just before the media explosion on Truvada becoming approved for PrEP in the US. Research performed today would most likely demonstrate that gay men in Canada have more awareness about PrEP now—particularly because it has finally been approved by Health Canada in 2016. However, during the data collection for this project, PrEP remained more of a mystery to those outside of the HIV prevention field, as well as nearly impossible to access for those not in the right networks of HIV experts and medical professionals in the know.

It thus appears that all of these biomedical concepts—undetectability, treatment as prevention, viral load, PEP and PrEP—are specialised, insider concepts and tools that are debated and used by HIV experts engaged inside the HIV prevention field and that circulate around specific socio-sexual networks or epistemic communities for extended periods of time before becoming more common knowledge among the broader gay male populace. Of course, this would be the case for all biomedical interventions (indeed, experts are experts because they produce knowledge and technologies). However, what is unique about HIV, is that the assumption that those most at-risk, and gay men in particular, have such a high level of sexual health literacy and agency over the use of biomedical technologies in their sexual lives—the narrative that gay men consistently invent safer sex from the grassroots (Dowsett, 2009)— erases the fact that we have failed to provide basic education to some young gay men who are not so frequently linked up to certain socio-sexual networks and to the epistemic communities that we routinely draw on in our research practices. Thus, some gay men are uncertain about the benefits of new prevention technologies because they have not been informed about them in the first place. The limited literacy among these men demonstrates a clear gap in our education efforts.

This is where the critical capacity of IE helps us to better illuminate social problems. By examining social actors and social practices less present in the established literature, we are able to find alternative narratives about gay men and HIV risk management that simultaneously expose the social and political dimensions of this epidemic as well as the limitations of our current knowledge production practices. In the language of IE, this critical research practice allows us to describe significant “lines of fault”—that is, the disconnect between the knowledge that surfaces from everyday experience and the ruling forms of knowledge that are produced to coordinate the social world, such as through HIV education (McCoy, 2008 p. 705; Smith, 1987, 2005). HIV prevention research tends to focus more on those social actors who are scientifically active and who are thus more aware of emerging risk management tools and the debates that surround them. HIV education then gets built by commonly thinking in and through these men's narratives. However, this dissertation exposes a "line of fault" between the narratives of scientifically active gay men and the corresponding treatment optimism hypothesis, with the everyday experiences of gay men who are entirely unaware, uncertain or extremely confused by emerging HIV prevention knowledge. Indeed, as we shall now see, even those social actors with more awareness of these emerging biomedical tools are not necessarily convinced about their prevention benefits. This analysis will only continue to reaffirm the fact that during the transition to the biomedical era of HIV prevention, there have been significant gaps in educating and communicating clear and helpful knowledge about undetectable viral load and the risks of serovariant sexual relations to HIV-negative gay men.

Serosorting and Undetectable Viral Load

The second category of men interviewed refers to those who were more aware of undetectability, but were confused by its implications.

> Mario: What always has intrigued me, or is intriguing me lately, because I tried to go online dating last year before Martin came around, and people kept writing something called "undetectable." I didn't know what that was in the beginning. But I'm like, "so you have HIV?" I still don't quite understand why people say undetectable. Like, I don't understand that logic and where that stemmed from.

When undetectability was explained to Mario during the interview he argued that it would not change his discomfort with having serovariant sex. In particular, he argued that he would not be able to sustain an erection. Mario's risk disposition is fundamentally characterised by serosorting practices and no new piece of knowledge would shift that (at least not so easily). Others held similar opinions.

> Sebastian: I'd still be uncomfortable. Yeah. Even rationally knowing that like the risk is like, so reduced, it would still make me uncomfortable.

For some participants, there was an even higher degree of scepticism and a critique of those who may be too treatment optimistic. Here is a comment from Jonathan who walked away from a sexual encounter with a former fuck buddy after the fuck buddy informed him that he was now HIV-positive (a confession made only after Jonathan prodded).

> Jonathan: So, this really is why it's getting spread so much. Cause people don't really, you know what I'm saying, they don't let the sexual partner who doesn't have anything [i.e. who is HIV-negative] make the choice of taking the risk or not. Do you know what I'm saying? And that's like, practically cruel, you know. Yeah, it's undetectable, but undetectable for me is like, yeah you have it, cause you have it!

Jonathan's opinions here must be contextualised within his general risk aversion, which developed after his extremely negative experience with PEP that I first discussed in the last chapter. Like Mario, Jonathan's risk disposition is fundamentally characterised by serosorting practices and a strong desire to reduce another painful experience of serostatus uncertainty at all cost. That his fuck buddy would have continued to have had (safer) sex with him without disclosing his HIV status first, was viewed as a complete breakdown of trust. The fuck buddy relationship was permanently dissolved. Thus against the notion of treatment optimism, men like Jonathan display extreme treatment pessimism as they refuse to accept undetectable viral load information as part of a viable risk management strategy. Serovariant sex is a higher risk act no matter the other variables involved.

Among participants displaying more pessimistic attitudes, the social context by which they come to learn about undetectable viral load plays a significant role in how they interpret new information and if they choose to accept it. Social actors are always going to be reading the HIV landscape, including new information, from their current risk disposition, through their particular tolerance and more recent experiences of serostatus uncertainty. The "objective" truth of scientific data will be filtered through the "subjective" truth of a social actor's lived reality. For example, as mentioned in the last chapter, part of what makes a social actor more risk tolerant is his ability to control or implement agency in the face of serostatus uncertainty. Risk aversion can be amplified when serostatus uncertainty is seemingly thrust on a social actor from an external source, since the social actor feels less in control of the situation. Consequently, a social actor will be less willing to accept the uncertainties associated with the information they are receiving. Karun's narrative of finding out new information from a former hookup partner highlights this dynamic rather clearly.

> Karun: And later that evening, Andrew wrote back to me on the [hookup/dating] website saying that “Well, yes, I am HIV-positive. I am HIV-positive, but don’t worry, my load is undetectable.” That’s not a word I’d ever heard before. He said, “My viral load is undetectable so, and I didn’t do anything that would have put you at risk.” But as soon as I heard that he was HIV-positive, I was just shocked.

As described in the last chapter, during this period of time Karun was *extremely* risk averse due to his precarious immigration status, his lack of provincial health insurance, his recent experiences with STIs and his growing hostility toward casual sexual relations. These social conditions shaped his risk disposition, fundamentally determining how he came to interpret the serostatus uncertainty associated with this particular sexual exchange (oral sex with a casual partner that was found out to be serovariant in nature after the “risk” was taken). All serostatus uncertainty at this moment seemed too great for Karun to bear. By finding out that he had actually failed to serosort effectively, Karun was facing a new relationship to HIV risk management, a shift that felt disorienting and anxiety provoking. The issue here is not necessarily about higher risk sexual practice and a greater likelihood to seroconvert (Karun did not in fact contract HIV from this encounter). Rather, it is the sudden change in risk disposition and the limited agency in regulating this shift, that felt threatening to Karun’s well-being. Though Karun was capable of logically processing the information on undetectable viral load (he eventually spoke to service providers to discuss his concerns), he was unable to accept its prevention benefit to his own sexual health. Moreover, Karun was challenged by the fact that someone would not have disclosed to him that they were HIV-positive and thus a sense of betrayal also limited his acceptance of the concept of undetectability. Lacking a sense of agential power in this situation, Karun was unable to adopt undetectable viral load into his sexual practice on his own terms. This only further fuelled his reliance on serosorting and his growing fears of HIV-positive men.

This example demonstrates that there are gay men who are treatment optimistic to some capacity—like Andrew, the HIV-positive hookup in this situation—whose expectations around sexual health literacy and risk tolerance levels may clash with those who are less knowledgeable or who are more treatment pessimistic. These clashes between the hyper literate and less literate, between the more risk tolerant and the more risk averse, between those more optimistic and those more sceptical about the benefits of treatment on prevention, can create uncomfortable moments for all the social actors involved and can produce serophobic reactions, perpetuate social anxiety, sexual anxiety and social isolation—all factors which greatly erode the well-being of both HIV-negative and HIV-positive gay men. HIV transmission does not have to occur, or does not even have to be highly likely to occur, for there to be fairly significant social conflicts among gay men based on the negotiation of sexual risk. That said, there are some HIV-negative gay men who do incorporate undetectable viral load information into their sexual practices, as we shall now observe.

Serovariant Sex and Undetectable Viral Load

In opposition to more sceptical participants, there are those men interviewed who have heard about undetectable viral load, who do find it to be a helpful concept and who do factor it in to their sexual practices. In particular, information about undetectable viral load has made some participants more comfortable with serovariant sex.

> Paul: Yeah. I mean learning that an HIV-positive person who takes his medication and has an undetectable load viral load, learning that that person has a very low chance of transmitting the disease, makes it, you know, you sort of look at it from a different perspective. Then you're like, well, then these people are, they are no longer people who need to be ostracized from the sexual community.

The first time Paul had sex with an HIV-positive man who said he was undetectable he was unaware of what that meant and became extremely anxious the next day. However, after reaching out to a friend who was more knowledgeable about HIV prevention, he became more comfortable with the fact that condom use and undetectable viral load meant that the risks were sufficiently reduced. This connection to a friend who was a member of the HIV epistemic community greatly affected how Paul responded to the risks associated with serovariant sex in the context of undetectable viral load. This differs from Karun, who did not have a similar social contact.

However, despite stories like Paul, which demonstrate some "treatment optimism," no participants interviewed for this project discussed being comfortable with having *unprotected* anal sex as a result of information on undetectable viral load. This is a finding that directly contrasts to the treatment optimism hypothesis that correlates optimistic beliefs with increased sexual risk-taking. While this hypothesis *may* be true among the HIV-positive men researched for other projects (Rapid Response Service, 2014), for the HIV-negative men interviewed for this project, there was far more nuance in how undetectable viral load was adopted into sexual practice.

For example, Vincent researched the benefits of undetectability thoroughly and talked about the risks with his doctor before he started having serovariant sex *with* a condom. At the time of the interview, he had only knowingly had serovariant anal sex once with someone he trusted, which is something he felt that he needed to do as part of his sexual growth (a way to confront his fears of HIV and overcome internalised viral apartheid). He was somewhat proud of himself for developing this tolerance to serostatus uncertainty, though he admitted that he remained somewhat ambivalent about having more serovariant sexual relations in the future. Indeed, if we remember from the last chapter, every time Vincent gets a cold or flu he thinks he's been infected with HIV. Serovariant sex was more of a political act of self-growth than a permanent change in Vincent's risk disposition.

Similarly, Michael only has serovariant sex with HIV-positive men with undetectable viral loads who are close friends and those whom he knows take care of their health and have a concern for his well-being. With casual partners, he tends to serosort and relies on lower or negligible risk forms of sex (i.e. oral sex and mutual masturbation). These examples demonstrate once again how HIV prevention is not just a product of individual self-interest, but is a product of the relational, the social connections built between friends and lovers. Conversely, Ben is comfortable with having sex with HIV-positive men regardless of the nature of their relationship, but he requires the use of condoms for anal intercourse even if his HIV-positive partners have undetectable viral loads. He is not, however, concerned about the risks from unprotected oral sex. For Tim, the viral load status of his HIV-positive partners is irrelevant since he always uses condoms for anal intercourse and considers that to be effective prevention.

What distinguishes these men with more "treatment optimistic" beliefs to those above who are more sceptical of the prevention benefits of treatment is not a complete absence of suspicion about undetectable viral load information, but a higher tolerance to serostatus uncertainty and, relatedly, a significantly stronger level of confidence in their sexual choices. Quite importantly, these men who tend to be more "treatment optimistic" are comfortable with the risk reduction potential associated with condoms, finding the residual risk that may remain after *protected* anal intercourse to be tolerable. Serostatus uncertainty persists, which is why these men continue to get tested (and occasionally have anxiety about their serostatuses). However, it is a level of serostatus uncertainty that they can tolerate. In contrast, those men that are more sceptical about the prevention benefits of HIV treatment, and who routinely serosort, cannot accept the serostatus uncertainty that they attach to serovariant sex and consequently cannot accept information on undetectable viral load. Serovariance is a psychic wall that they just cannot climb. Their entire risk disposition is based on serosorting.

Furthermore, these men who are more "treatment optimistic" and who do not always serosort were initiating sex and serovariant sexual relations on their own terms and were generally coming to particular sexual encounters with a prior understanding of undetectable viral load, thus allowing them to be more comfortable with the associated serostatus uncertainty. They were more risk tolerant because they had more agency over the generation of serostatus uncertainty in their lives. Unlike some of the men with more sceptical opinions, those less reliant on serosorting also seemed to display less ambivalence about their sexual practices and had more comfort with casual sexual relations in general. While I cannot make generalized claims about all gay men from this study, what is evident from the data collected is that there may be a relationship between the sexual confidence level of a social actor and his ability to accept new biomedical knowledge about sexual health risk. Congruently, it is also clear that those who may be resisting incorporating undetectable viral load into their sexual practices are feeling increasing social pressure to do, as we shall now investigate.

Social Pressure and Undetectable Viral Load

As I first described in the last chapter, sexual confidence relates to a social actor's ability to fulfill, modify and manage competing cultural scripts on sexuality and intimacy with relative ease. Confidence may also be aided by a social actor's relationship to socio-sexual communities that allow him to moralise his sexual practices and associated serostatus uncertainty, regardless of what he is or is not doing, more positively. The more ambivalent a social actor is about his sexual and intimate practices, the more uncertain or less confident he is about himself as a sexual being and as a member of a socio-sexual community, the more ambivalent and uncertain he will tend to be about the benefits of undetectable viral load, which is often communicated with significant degrees of uncertainty. There is a relationship between accepting biomedical uncertainties and accepting sexual uncertainties, between accepting biomedical risks and accepting sexual risks.

To offer an example of this dynamic, let us take this story from Fred who, if we remember from the last chapter, discussed being conflicted by social pressures to be more sexual. His risk disposition has been fundamentally categorised by an ambivalent relationship to promiscuity. Here, Fred is discussing his decision to serosort.

> Fred: Someone, someone who wanted to have a hookup, and it was specifically a hookup. I've been communicating online on dudesnude.
>
> And he said, "I have HIV."
>
> And I sat down like, "Do I want to do this? Do I?"
>
> I wasn't willing to do it.
>
> Um, and, it would be hard if I was in that situation where, like, someone I knew where I was close to and they were really emotionally involved or something and I saw that they were getting hurt by it. And it was like, do I take the risk or do I be supposedly irrationally, like, I actually feel almost kind of social pressure that if a person then is at viral load at zero [i.e. undetectable] then I'm supposed to have sex with them because my anxiety is irrational and I'm not supposed to be participating in this stigma or something like that.

It is interesting here that Fred uses the concept of social pressure that he first applied to sexual expectations to be hyper sexual (see last chapter for review) to the idea of undetectable viral load. This demonstrates that there is a "treatment optimism sexual script" in circulation: the idea that good, well-informed, politically conscious gay and queer HIV-negative men do not stigmatise against HIV-positive men and thus fully accept the risk reduction potential of undetectable viral load. They don't reinforce viral apartheid through serosorting. Or, at the very least, they consider how their sexual rejection of HIV-positive men produces stigma and is, ethico-politically, problematic behaviour. We saw several examples of this type of messaging in chapter four coming directly from the HIV prevention field, such as the community-based HIV Stigma campaign and Arsenault's artwork critiquing the anxieties of HIV-negative men who serosort. Following Flowers (2001) and Dean (2009), we know that debates over the ethico-political dynamics of serosorting among gay men are not new. Yet, the increasing amounts of information on undetectability and its associated epistemic uncertainties during the transition to the biomedical era of HIV prevention, arguably amplify and further convolute the situation for many at-risk social actors, as we can see from Fred's comments.

Fred twice refers to his reaction to serosort as being irrational, meaning that he feels like he is not computing biomedical knowledge accurately. By having or acting on his anxiety he considers himself to not be managing his emotions in a socially preferred manner, which under the banner of the HIV prevention field generally means "accurately" computing biomedical risks and embracing serostatus uncertainty. It means acting as if such strongly felt anxiety did not exist. He needs to be a good gay or biological citizen by being a good risk calculator, subtracting all other emotional experiences out of the equation for optimal results. Following Gould, the emotional habitus governing gay male culture during the transition to the biomedical era of prevention is one that often encourages gay men to be confident and rational when it comes to matters of HIV prevention and to see anxiety and uncertainty as problematic emotional states to be overcome (or simply ignored) in pursuit of the greater interests of the gay community. Artwork like Arsenault's and the HIV Stigma campaign function as emotional pedagogy strategies that teach gay men that certain emotional reactions to serovariant sex are superior to others. Thus by acting on his anxiety in this situation, Fred feels like he is not responding to HIV prevention in a socially and politically preferred manner.

However, if we return back to the scientific literature, education documents, community reports, activist art and various policies around undetectable viral load that I examined in chapters three and four, we can see that the doubts that Fred has over undetectable viral load mirror the doubts produced by the HIV prevention field. Fred's experiential uncertainties mirror the field's unresolved epistemic and social and political uncertainties during the transition to the biomedical era of HIV prevention. Thus Fred's doubts are not based on a lack of understanding, but a fundamental lack of certainty in the HIV prevention field. Fred's emotional suffering and confusion is a *direct* product of the conditions of uncertainty. Nowhere at that time would Fred have been able to find official (state funded/approved) education material in Canada that would inform him that undetectable viral load meant negligible risk. (The progressive document on viral load produced by *L'Institut National de Santé Publique du Québec* that I discussed in chapter three was disseminated after the situation Fred is describing, and would most likely not be read by those who aren't researchers or service providers.) Instead, the field would have informed him that serovariant sex is a risk, undetectable viral load may reduce risk, treatment optimism may increase risk, and yet, somewhat paradoxically, serosorting may be an unethical practice. These incompatible ideas then have to be sorted out and processed by the social actor who has to accept the degree of serostatus uncertainty that serovariant sexual practices pose. In Fred's case, he was too risk averse to do so.

Fred's story here is another example of how someone less tapped into the HIV epistemic community may still be affected by its uncertainties. Fred may not be an expert on HIV and undetectable viral load, but when this issue was brought up to him in the context of a potential hook-up, he was able to look up information online and decide for himself what risks were present. He was then able to make his decision based on the (uncertain) information he could find. Just because Fred is (at the time of the interview at least) unlikely to go to a gay bathhouse, or go to an ASO, does not mean that he is unlikely to encounter HIV-positive men through his dating and sex life and that he is unlikely to deal with the ethico-political dimensions associated with serosorting in the context of shifting perceptions on undetectable viral load.

Interestingly though, in Fred's narrative the target of criticism is Fred himself and not the lack of consensus that makes up the HIV prevention field in Canada. The proliferation of epistemic and social and political uncertainties surrounding the risk reduction of undetectable viral load end up funnelling down into complex moments of experiential uncertainty. Faced with the prospect of having to manage a window period confronting serostatus uncertainty, social actors like Fred rely on their current risk disposition to make their decisions to serosort or not. However, failure to go through with serovariant sex leaves these social actors feeling guilty for the sexual rejection of HIV-positive men (which campaigns like HIV Stigma and queer artwork purposely amplify in the interest of social and political critique). HIV-negative gay men can then come to blame themselves for failing to live up to the contradictory standards that make up good gay and biological citizenship, rather than faulting the HIV prevention field for failing to deliver clarity or consistency on key issues.

My main argument here is that if HIV-negative gay men feel strong anxiety when facing a situation of serovariant sexual relations, and choose to manage this anxiety by relying on serosorting, this is *directly* because of the conditions of uncertainty produced by knowledge production and governing practices. Epistemic and social and political uncertainties directly foster anxiety by amplifying epidemiological serostatus uncertainty and complicating the parameters of effective risk management. HIV-negative gay men may feel like they lack the capacity to address future harm, because the field has consistently made the terms of controlling such harm ambiguous. The field fosters the very anxiety that HIV-negative gay men are sometimes demeaned for acting on. To be absolutely clear, there is no excuse for an HIV-negative gay man to act in a violent, crude, hostile or socially-degrading manner to another man just because he is HIV-positive. There is no justification for serophobia on any grounds. Yet serosorting, viral apartheid and HIV stigma, are not solely a product of HIV-negative gay men with questionable social etiquette. They are a product of the uncertain social conditions produced by the HIV prevention field. HIV stigma is a consequence of the field having failed to achieve a stabilising point and is not the principal fault of HIV-negative gay men trying to manage their anxieties under social conditions that purposely foster such anxieties in the interest of regulating gay men as at-risk subjects.

Moreover, as mentioned in the last chapter on risk disposition and agency, part of how social actors moralise and manage serostatus uncertainty is accomplished by reflecting on the sexual context. The sexual context fundamentally shapes acceptance of the uncertainties associated with biomedical information, especially if that information is novel and plagued by epistemic uncertainty. Fred was unable to have serovariant sex in the context of a casual hookup, because the relationship did not seem worth the serostatus uncertainty—it wasn't worth a window period riddled with anxiety. However, he realizes that this could shift in a context of a more serious, intimate relationship, where he would be more likely to consider the feelings of the other partner. The narratives we have encountered in this dissertation so far, of Francis who could not go through with a serovariant relationship with a casual partner that he was only minimally interested in, or Terry and David who accepted the risks of a serovariant relationship when they were in love with their HIV-positive partners, are further examples of this dynamic. All these examples signify the necessity of understanding HIV prevention through sexual practice instead of individual behaviour, of examining how specific social relations at specific moments in time affect interpretations of HIV risk management.

Furthermore, Fred's comments also display some resistance to the idea that he has to be "politically correct" with the sex he has in order to fulfill some ethico-political script on gay male sexual practice. Though somewhat networked with gay and queer men, and aware of political discourse on sexual risk during the transition to the biomedical era of HIV prevention, Fred remains generally disconnected from the mainstream gay community and queer culture. He thus does not feel the need to adopt dominant sexual politics into his own life. Fred is not full of shame for being a sexual gay man, but that does not mean that he is full of the confidence needed to be a hypersexual and risk tolerant gay man. This is a key argument. For embedded in the messaging of the HIV prevention field that we examined in chapter four, particularly the more community-based, grassroots, queer and activist modalities, there is an implicit argument that if you cannot accept some serostatus uncertainty, you are not truly accepting yourself as a gay man. In the same way that there is a value judgment from public health expertise on those who take "too many" risks, there is also a value judgment on those who do not take "enough" risks. Since gay or queer male subjectivity and gay male community have been associated with sexual risk-taking (not just in relation to HIV, but as a broader form of resistance to heteronormativity and homonormativity) to deny serostatus uncertainty in one's life as a gay man is to deny one's gayness and to reject the project of subversive gay male community formation (Crimp, 2002; Dean, 2009; Halperin, 2007; Warner, 1999). While we should not exaggerate this dynamic, it is necessary to highlight that HIV-negative gay men are shamed implicitly and explicitly for either being too tolerant or too averse to risk, for being too sexual or not sexual enough.

In this particular situation, Fred was hyper risk reflexive and developed his risk disposition. Managing his anxiety he implemented agency in the face of biomedical and social uncertainty in the interest of securing his well-being. He determined his sexual and intimate needs, evaluated competing claims and ethico-political expectations on undetectability and serosorting, acknowledged his comfort with serostatus uncertainty and established his tolerance to risk. Though a degree of ambivalence remains—an uncertainty over whether his actions are indeed "rational" or "moral"—he decided not to accept undetectability as a risk reduction tool for this particular situation. Thus whether or not others agree or disagree with his choices—and indeed, others *can* and *will* disagree with his actions and beliefs—he has demonstrated agency in the face of serostatus uncertainty.

Examples like Fred's put into question the validity and generalizability of the treatment optimism thesis found in risk surveillance and risk factor research and demonstrate the social complexity of risk management practices on the ground. While there may be a current of treatment optimism within the gay male population, there is also a current of treatment pessimism. When "optimists" clash with "pessimists," we can see the potential for social conflicts and moral dilemmas. Among the HIV-negative gay men interviewed for this project, including those with more optimistic attitudes, the dilemmas do not focus around the need to bareback—the main fascination of the HIV prevention field—but whether or not to engage in serovariant relations. While debating the risk reduction benefits and ethics of serosorting is not new to gay male milieus, emerging information on biomedical technologies like undetectability have dramatically changed the nature of the debate, adding more complexity. In Canada, the topics of disclosure and criminalisation have also structured the moral implications of serosorting. These will be the final HIV-related debates I shall explore.

Viral Apartheid: Serosorting and Status Disclosure

As I have discussed so far, during the transition to the biomedical era of HIV prevention the manageability of living with HIV and the risk reduction potential of undetectable viral load have been causing HIV-negative gay men to reconsider the implications of serosorting. Indeed, it is impossible to talk about managing serostatus uncertainty without reference to young HIV-negative gay men's dilemmas over serosorting practices.

> Anthony: I've thought about [dating an HIV-positive man] a lot, and I think ideally I would say yes. But I think, realistically, probably not. I think I would be way too neurotic and concerned, worried and... I don't know. I think I would eventually, I think I would probably, totally be too cowardly to.

Anthony's description of himself as neurotic, worried and cowardly once again demonstrates that there is some ethico-political and cultural value to overcoming viral apartheid. Chris also expresses similar sentiments.

> Chris: I don't know. I've thought about that [i.e. serovariant relations] a few times. I would like to say yes, but truly I don't know how I would be in that situation. And that makes me think that I wouldn't necessarily get into that situation. I don't know. Like, yeah, the fact that I want to but I don't know makes me think that I wouldn't. And then I kind of feel like a terrible person for that, but...
>
> Interviewer: Why do you feel like a terrible person?
>
> Chris: I don't know. I could be depriving myself and someone else of a relationship that could be, potentially be, really really good just because of this one thing which…

> I can’t really overlook it. I can’t ignore it.

Importantly, both Anthony and Chris have limited knowledge about undetectable viral load and what it is like to live with HIV. Yet, even without high levels of sexual health literacy—that is, even without them knowing much about how risk can be drastically reduced in a serovariant relationship—they still frame the ability to engage in a serovariant relationship as more ideal and harshly critique their reluctance to engage in one (i.e. “I kind of feel like a terrible person”). Once again, this indicates that biomedical assessment of risk is not the only element structuring risk management decisions, as social actors also incorporate the social and moral context into their thought processes. Nonetheless, since both of these social actors have had very difficult experiences with serostatus uncertainty, their risk aversion has made it impossible for them to accept the uncertainties associated with a serovariant relationship even though they describe this acceptance as morally preferable. Thus they serosort, but they feel remorseful or uneasy about their choice. However, some participants who serosort are far less ambivalent.

> Sebastian: I mean, [serosorting] is discriminatory. But it’s discriminatory in the way that not everyone who hits on you, you’re gonna sleep with for various reasons. It could be their race. It could be their height. It could be their weight. It could be the way they look. It could be various things. It could be their eye colour. It could be anything you could think of and, um, I mean, yes, it’s discriminatory, but it’s discriminatory with a somewhat kind of... like, there’s a rationale behind it. It’s not something completely irrational.

Thus Sebastian recognises that his serosorting is a form of discrimination but considers it valid because there is a logical basis to his choice that is rooted in biomedical risk assessment. He also touches on the interesting point that dating is actually full of discrimination and rejection for a variety of issues. Our preferences in our sexual partners cannot be so easily overcome for the sake of political correctness, as also noted by Fred’s comments above. Nick offers near identical argumentation, but also highlights where the social expectations to engage in serovariant sexual relations may be coming from.

> Nick: Some people, especially in the more lefty-activist communities look on my "Hmm, HIV, let's not have sex," as like really not cool and prejudiced. And they'll be like, “that's a value you need to change,” sort of thing. They'll be like that, for any number of reasons, it's discriminatory. It would be the same as saying, “I don't sleep

> with Asian people," which you think is horrible and racist. This isn't any different. And so, like, you need to check your privilege or the stereotypical bullshit you're buying into and address that.
>
> Interviewer: And, what's your response to kind of, [to] that?
>
> Nick: I mean, I'm not saying it's [a good one], but, "Bite me." Like, I get the argument. I do. And I admit, as I discussed earlier, that it is prejudiced. But it's also where I am. And I don't feel the need to justify that or to change that really.

For Sebastian and Nick, the biomedical assessment of risk, the fact that there is some degree of serostatus uncertainty associated with serovariant sex, serves as a non-ambivalent justification for the sexual rejection of HIV-positive men. They make no apologies for making decisions based on their risk aversion—they recognize that there are ethico-political limitations to their arguments, but they stand firm with their decisions (albeit with some defensiveness).

However, in order for HIV-negative men like Sebastian and Nick to successfully serosort, they must first know who is in fact HIV-positive. This requires that HIV-positive men disclose their HIV status before having sexual relations. HIV status disclosure can occur in several ways. An HIV-positive man can communicate his status in person (either explicitly claiming to be HIV-positive or making some reference which infers he is positive) or via his online dating and hookup profiles. He can also include his viral load stats as well as the types of prevention practices he employs on his online profile. As we saw from Matthew's story at the bathhouse in the last chapter, some HIV-positive men will also rely on the environment to disclose for them, with the assumption being that HIV-negative social actors should know where encountering HIV-positive men is more likely to occur (Adam, 2005). Men like Sebastian, Nick and Karun who "screen" (i.e. serosort) tend to look for serostatus information online and will ignore or reject men who list themselves as HIV-positive. In order to serosort, Denis once created a fake online hookup profile pretending to be an HIV-positive man on a website that only allowed HIV-positive men to see who else was positive. Sebastian and Paul both discussed asking intricate questions about safer sex, drug use and barebacking practices to gauge whether or not a potential hookup is lying about his serostatus or his general risk-taking behaviours. These social actors reject men who demonstrate an interest in unprotected anal sex with hookups or heavy drug use or who are caught lying about any matter. As described in the last chapter, Paul completely rejects men that he sees as being connected with the Gay Village scene, which he associates with higher risk.

If an HIV-negative social actor uses serosorting as a risk management practice his obvious preference is going to be for HIV-positive men to disclose their serostatus before the two have any sex. If an HIV-positive man does not disclose his status or lies about his HIV status, this can cause tension and prompt an HIV-negative man who prefers to serosort to have a very difficult experience managing serostatus uncertainty even if other risk management practices like condoms have been used.

> Sebastian: I tend to screen, uh, and I'm sure I'll get into it later, but I found out about cases where people, afterwards I found out, have not been honest [about their HIV statuses]. So that's been super uh, I don't know, frustrating, 'cause I guess you take as many precautions as you can, but then people actively lie to you. So, yeah. So I think, like, I know what I do, and I know that it's just like, it's an added risk.

However, even if an HIV-negative social actor expects that his sexual partners will honestly disclose their HIV-positive status or HIV testing history, this does not necessarily mean that he will automatically take a higher risk when someone claims to be HIV-negative.

> Marcel: I guess I never felt like I could completely trust someone. I guess there was always an element of risk about it. But normally you would want, I would want to trust that someone would disclose it [i.e. that they are HIV-positive]. But then at the same time, I know you can't really trust people you don't know.

Among the participants of this study who serosort, those who had unprotected anal sex with either casual or longer-term partners knew that there were risks involved. No one had a naïve understanding that disclosure in and of itself was a sound prevention measure.

On the reverse end of the spectrum, some participants recognised that disclosure of HIV status is not a necessary part of effective prevention and thus do not require or expect their partners to disclose.

> Kyle: It's not necessary. I don't, I mean, I'm the one when I meet somebody I think it [i.e. an HIV infection] is a possibility, so I act accordingly. I don't, I'm not angry at somebody who doesn't tell me their HIV status because they don't have to. And if you tell me I find, I appreciate it extremely cause it is a proof of confidence and also it is a [testimony] for what they are experiencing. So, I think, I don't know. Sometimes it can even be a way of bonding with me.

Jeremy expressed similar sentiments.

> Jeremy: At some point, if [he] told me "I'm HIV-positive," well I would trust him. At least then it would be like, yeah. Because you know it, and the honesty of saying it, so there's not, you know, there's like, more [security].

The different opinions about disclosure between men like Sebastian and Nick versus men like Kyle and Jeremy are based on the fact that Sebastian and Nick prefer to serosort and thus rely on disclosure as part of their risk management practices. Meanwhile, Kyle and Jeremy do not serosort, so disclosure is less relevant. What is fascinating about Kyle and Jeremy's comments, however, is that even though they do not require disclosure, they do feel that HIV status disclosure helps to build rapport and establish trust. Indeed, even for those who do not (always) serosort, disclosure of HIV status may be important not because of risk management practices *per se*, but because of the intimacy and trust that is formed.

> Vincent: Yeah. Nothing is as important as trust for me. I really feel like, I know it is difficult and hard and there is a lot of rejection involved, but if I ask you, which I always do, if you are HIV-positive or not and you don't give me a straight answer, I'll usually kick you out if I know.... And I know that HIV [activist] groups are really like proactive and trying to eliminate who knows their identity, but I think that's wrong. I think we should change people's mentality towards how they are accepted, yes. But it is still a life threatening decision I have the choice to make.

In Vincent's case, he does see serovariant sex as posing a higher risk than seroconcordant relations and thus wants to know the serostatuses of his partners. This does not mean that he will sexually reject all HIV-positive men, but that he will modify his sexual practices so that he will feel more comfortable living with the associated serostatus uncertainty over the course of the window period. He has engaged in *protected* anal sex with HIV-positive men, but this was in the context of a trusting relationship with someone that made him comfortable with that experience. Once again, the sexual and intimate context, the type of social relations men are seeking, fundamentally shapes interpretation of risk and the experience of serostatus uncertainty.

Here is another example about the importance of trust from Stephen, who prefers (but does not require) HIV status disclosure.

> Stephen: Trust is important, because, I mean A, it's not like I'm going to go on their word if they tell me that they are [HIV-] negative and okay, now I cannot use a condom. It's not like that.
>
> But it's, trust in the sense that I am trying, I'm working on how to give myself [to others] without feeling like I'm being taken advantage of, or that I'm giving myself in ways that I don't really want to, but because I'm trying to get something else. That to me feels more less safe. Cause it leads in a direction that has more to do with low self-esteem and these kind of things, which then leads, I think, to being more risky and to drinking. And it's just a dark path that I don't need to go down anymore.

Stephen has struggled greatly in the past with alcohol addiction, which led him to very high risk scenarios that caused him tremendous shame. While he wants to continue to have an active sex life, he also wishes to ensure that he is making decisions that respect his long-term health and well-being. His past experiences with addiction and mental health issues play a fundamental role in his risk disposition and how he attaches meaning to sexual experiences and moments of serostatus uncertainty. He is aware that there are always risks involved with sex, that serovariant sex does not always pose a high risk and that people may not accurately know their HIV status. However, being able to trust that someone will consider his well-being and will be honest with him about their sexual health status makes dealing with the experience of serostatus uncertainty more tolerable. It helps him to feel respected and thus preserves his self-esteem. Preserving this self-esteem is also necessary to help him avoid making riskier choices with his health (related to both sex and alcohol use) in the future, as he places more value on his life and well-being. Nonetheless, though disclosure is preferred, it is not necessary. Thus while those who serosort expect HIV-positive men to disclose and have to trust that their sexual partners will be honest about their prior sexual risk-taking, those who do not serosort do not expect disclosure, but welcome disclosure as a way to establish trust and bonding.

Nonetheless, among those who do not (always) serosort or consider serosorting necessary for the management of risk, the acceptance of non-disclosure can shift if they perceive a higher degree of risk. Here is Sam discussing his reaction to HIV-positive men who do not disclose their serostatus to HIV-negative men and do not use condoms.

> Sam: My reaction is what I just tried to contain. Okay. So, my reaction was, "Fuck you." Like kind of, "Go away. Go away." Because if you know that you're HIV-positive and you don't use a condom and/or you don't let the person know that they are putting themselves at-risk of contracting it themselves, whether or not that means

> the same thing it did in the eighties and the nineties, that's extremely irresponsible.
>
> And I think, actually, [it] is a violation of the whole notion of informed consent. You can only give informed consent if you know what it is you're consenting to. And if you're consenting to having sex with someone who is HIV-positive, that's one thing. If you don't know that person's HIV-positive and they haven't told you, and you're being exposed to it, that's unethical, in my opinion.

Sam's comments bring to the surface the ethics of non-disclosure when there is a higher risk of transmission (i.e. unprotected anal intercourse and/or a detectable viral load). While an HIV-positive man can make assumptions that their sexual partners will be "in the know," not all HIV-negative gay men will pick up these cues and may feel strongly that disclosure is, ethically, an absolutely necessary practice in higher risk contexts (Adam, 2005, 2006). That Sam brings up the notion of informed consent brings us closer to the idea of HIV status disclosure as a criminal issue, the last HIV ethico-political debate I will explore.

Viral Apartheid: Criminalisation of HIV Non-Disclosure

As I have demonstrated in this chapter, opinions on the topic of HIV status disclosure range considerably across the participants of this study, with most expecting disclosure, some preferring but not expecting disclosure and a minor group that does not require disclosure. All of these opinions are based on social actors reflecting on biomedical risks, risk management strategies employed, risk tolerance levels, the ethics of sexual rejection and perpetuating the HIV stigma cycle. However, beyond these matters, HIV status disclosure has become a legal issue and a rather pressing one during the transition to the biomedical era of HIV prevention in Canada (Mykhalovskiy, 2011).

Like all the ethico-political issues explored thus far, the criminalisation of HIV non-disclosure received mixed reactions from participants of this study. First, and most illuminating, is the fact that most of the participants have no clear understanding of the laws around HIV status disclosure, with some having no idea that it was even a legal issue. Some have a vague sense that disclosure is legally necessary, but very few knew the specifics. Furthermore, while some participants are cognisant and supportive of HIV nondisclosure laws, no one is relying on the criminal law to aid in their risk management decisions. The argument that HIV-negative gay men will expect HIV-positive partners to disclose because of the law *may* have some merit to it (O’Byrne, 2011; O’Byrne et al., 2013). But the argument that HIV-negative gay men will be far more likely to have unprotected anal intercourse with a casual partner because they expect that their partners will be legally obligated to disclose is possibly an over-determined argument (Mykhalovskiy, 2011). Furthermore, no one expressed not getting tested for HIV because they explicitly fear having to live with the legal ramifications associated with HIV disclosure. They are concerned about stigma, but they did not usually mention criminalisation as a source of such stigma.

These last two findings contradict some of the arguments routinely made by activists and scholars critiquing the criminalisation of HIV nondisclosure from a public health perspective. These experts suggest that the criminalisation of HIV nondisclosure may lead to heightened forms of sexual risk-taking and the avoidance of HIV testing (O’Byrne, 2011; O'Byrne et al, 2013; Mykhalovskiy, 2011). I can concede, once again, that this may be true among some social actors. However, like the biomedical optimism hypotheses I analysed above, it is clear that any generalizations of gay male sexual practice, even those made in the service of necessary activism, is bound to have some limitations. Sexual practice on the ground is far more complex.

There are three general positions on the criminalisation of HIV non-disclosure among those interviewed: (hyper) supportive, ambivalent and (hyper) critical. Those who are supportive of the criminalisation of HIV nondisclosure are those who are the most risk averse and who tend to be uncomfortable with serovariant sex, which they classify as automatically risky.

> Mario: Because I just feel that if you are putting somebody at-risk, okay, there is still a risk, no matter how minimal, of a potential life-threatening disease that is not curable, you need to inform them of that and let them make the decision.

Mario knew very little about the specifics of HIV non-disclosure laws, but actually disagrees that risks are reduced enough when both condoms are used and when an HIV-positive person has an undetectable viral load (the latter of which he had only a vague understanding of). To Mario, all serovariant sex is a risk and HIV status needs to be clearly communicated. Jonathan, who is extremely risk averse after his PEP experience, also favours criminalisation despite knowing very little about the policy. These types of participants are hyper-supporters of criminalisation who are not considering the risk reduction benefits of undetectable viral load. They see disclosure as a very obvious moral and legal issue, with there being no excuse for an HIV-positive person not to disclose under any sexual circumstance.

Conversely, other supporters of the criminalisation of HIV non-disclosure have higher levels of sexual health and legal literacy and are incorporating this knowledge into their opinions. Nick knew far more about the legal nuances of the criminalisation of HIV non-disclosure and agreed with the court decisions in *R v. Mabior* and *R v. DC* (see chapter two for more details). He strongly disagreed with activists who claimed that condoms are sufficient enough to reduce risk (i.e. since condoms break) or that undetectable viral load is sufficient to reduce risk (i.e. since viral load can spike). Non-disclosure could only be justified to Nick when both of these parameters have been met. However, even under these conditions Nick, being so risk averse, would still serosort.

Nonetheless, despite some of these men supporting the criminalisation of HIV non-disclosure, they had not considered pressing charges against any sexual partners. All of them are aware that there is some degree of risk associated with their sexual practices. And while HIV-positive men are obviously the ones who suffer the most under these laws, this process of pressing charges would also be quite burdensome for those at-risk. In other words, those who are supportive of criminalisation in some instances, are not necessarily relying on criminalisation to do their serosorting for them or thinking about pressing charges as an easy option over adopting safer sex practices that they are comfortable with. Yet, it is possible that motivations for pressing charges may increase if seroconversion were to occur.

Most of the participants for this study are highly ambivalent when it came to the criminalisation of non-disclosure. This group of men includes both risk averse and risk tolerant men, with most preferring to serosort. However, in addition to evaluating the issue from a biomedical risk perspective (given their available sexual health literacy levels) these men also tend to evaluate it from an ethico-political perspective and see clear limitations to there being laws around disclosure.

> Richard: I mean, it would really make it easier for the society to just know who's HIV-positive and like know [who] to like, stay away from, but at the same time, you don't want to like…
>
> I'm not for it, because I don't want to like ostracize anybody. Because being a gay man, I feel like I've been suppressed in a way that I am a minority in society. I'm a

> double minority 'cause, like, I'm fucking brown and I'm gay. And so, if I were to like be pro-ostracizing people who are HIV-positive—because that's what it is, you're ostracizing these people because they're HIV-positive—if I were to be pro that, I think I would just feel like such a big-assed motherfuckin' hypocrite. So, no.

Richard, who had rather low sexual health literacy and did not know anything about the criminalisation of HIV non-disclosure, is basing his opinion on this issue by reflecting on his identity position as a "double minority." He is not reflecting on the issue through a biomedical risk calculation lens, but is factoring in the social and political dimensions associated with oppressing HIV-positive men. He is ambivalent, because he sees some advantages to serosorting and has serosorted in the past. However, he sees this practice as unethical and its manifestation as a legal issue as outright oppression. Alexander is another ambivalent participant who expects disclosure and prefers to serosort. However, while he agrees that criminalisation makes sense in some contexts, he is concerned about the harshness of the penalties.

> Alexander: Like aggravated sexual assault, I mean, that's fucked![28]

Fred also remains undecided about the issue. He sees some clear benefits to having legal regulation around disclosure, but he is also sceptical about how the laws may be used.

> Fred: Um, I'm undecided. I mean [I'm] obviously disturbed by these situations where, uh, I'm disturbed by the abstract idea of someone trying to get other people infected. Obviously that can get used and misused to pass problematic laws. Um, I don't know what the right balance is because I haven't really read up on it and I haven't come up to a conclusion. But I'm open to the idea, to like, uh, I'm open to like the idea that there's two extremes [to] this criminalisation issue.

During his interview, Fred also explicitly mentioned individuals working in radical movements who are very angry with current criminalisation laws. Nick and Vincent also referenced these activist groups. This returns us back to the idea of the moral compass and community location

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[28] Aggravated sexual assault is one of the charges that an HIV-positive person may face as a result of HIV status non-disclosure. It is one of the most severe charges available under the Criminal Code and can lead to a sentence of life imprisonment. HIV-positive persons can also be charged for first-degree murder (see chapter two for review).

discussed in the last chapter. Indeed, what is rather clear from the interview data is that the more distance social actors have from politically active gay and queer groups, the less knowledgeable they tend to be about the criminalisation of HIV non-disclosure and the more supportive they tend to be of the law. Let's take this example from Ben, who is connected to an activist queer milieu and who is hyper critical of the criminalisation of non-disclosure.

> Ben: Anyways, I don't agree with the criminalisation of it. It's a complicated issue that I feel like there are so many professionals dealing with that it's kinda like, I don't know my opinion and how it really matters. But I don't really appreciate the fact that like there's like laws involved.
>
> Like I said, I'm about to suck someone's cock. It's right there in front of my face and then all of a sudden, Ottawa is right in between. You know. It's kinda like, there's a weird like, in my head, I'm very visual, and like all of a sudden Parliament comes in the room. Boom! Like, okay. Like, what do I do now? You know? It's just not appreciated.

Ben is referring here to a specific instance when an HIV-positive man disclosed his HIV status before the two engaged in oral sex. Ben lost some respect for this hookup because he thought he was doing it solely because he felt legally obligated to and not because there was an interpersonal or health related reason for doing so. Ben's critical reaction to HIV status disclosure contrasts rather significantly to most of the participants above who prefer and usually expect disclosure. His reaction indicates that he is processing this issue more from a political standpoint—he does not want the government dictating his sexual practices—than from a biomedical risk viewpoint.

We should, however, be wary of making generalizations that some men in more queer and political spaces are automatically anti-criminalisation and those with fewer connections are automatically pro-criminalisation. For instance, Michael is also very involved in queer activist spaces and while he is not supportive of criminalisation, he does believe that disclosure can sometimes be the ethical thing to do. He argues that some HIV activists and artists erroneously assume that everyone is "in the know" when it comes to HIV prevention practices and issues of disclosure, but this is not the case, especially for those less involved in queer spaces.

It is impossible to say from the data collected whether social networks shape the moral compass and risk tolerance levels of its members, or whether social membership in particular milieus is predicated on having compatible political opinions on matters like criminalisation and risk tolerance levels to begin with. Most likely, it is a bit of both. Social actors are influenced by their peers and compatible interests and political beliefs make it easier for social actors to become acquainted. However, despite my inability to make generalized claims about who will be supportive or more critical of criminalisation, what is clear from the data is that social actors are processing this issue as a moral and political one, more than just as a matter of prevention. The actual biomedical risks involved do matter to these HIV-negative gay men, but their ability to accept a certain degree of risk or to find all risk inexcusable is based on their unique moral compass.

The Social and Ethico-Political Dimensions of Uncertainty: Conclusion

In this dissertation, I have been exploring the intricate relationship between knowledge production, governing practices and everyday experiences during the transition to the biomedical era of HIV prevention. I have argued that the field of HIV prevention has failed to achieve a stabilising point in its third decade and we have instead seen a proliferation of epistemic and social and political uncertainties associated with HIV risk management. The last two chapters have examined the effects of this on everyday experience, focusing on the nuances of experiential serostatus uncertainty. In this chapter, I have examined how some of the key debates in the field, namely the prevention benefits of HIV medications and the risks associated with serovariant sex, affect HIV-negative gay men in their everyday lives, men who try their best to adjust their sexual practices and secure their well-being in the interest of avoiding painful experiences of serostatus uncertainty. Rather than seeing a tendency toward sexual risk-taking, I have instead uncovered a diversity of information on sexual practice and sexual negotiation that sheds new critical light on our understanding of HIV risk management practices on the ground.

As a work of critical social science this chapter, motivated by institutional ethnographic research on HIV, has drawn on the lived experiences of social actors and social practices less present in the established literature to question the limits of ruling forms of knowledge and ruling governing practices within the field of HIV prevention science. By paying close attention to sexual practice, in this chapter I have offered more nuanced portrayals of risk management that complicate those narratives produced by epidemiological science that are based on an individual's motivations for having unprotected anal sex. In contrast to reductive theories on sexual risk-taking, in this chapter I have reintroduced the social back into our understanding of gay male sexual relations. I have reflected on the diverse ways that gay men are being affected by new biomedical advancements and have shown that the social context by which social actors become introduced to new biomedical technologies and their specific risk dispositions (their relationship to HIV risk management at a particular moment in time), plays a significant role in how they come to accept or reject newer information on HIV prevention.

Rather than viewing HIV prevention strictly as a set of behaviours and individual preferences, in this chapter I have examined the ways in which social relations and social context shift interpretations of risk, shaping how social actors respond to emerging biomedical technologies and how they moralise their sexual practices. And instead of focusing on gay men's attitudes and beliefs as a potential set of "risk factors," I have paid attention to how gay men's changing attitudes and beliefs create ethico-political dilemmas that must be negotiated. Gay men are not simply "risk calculators." They are also lovers, partners and friends trying to determine how best to act toward each other under conditions of uncertainty.

Throughout this chapter, I have demonstrated how the manageability of an HIV infection, the risk reduction potential of undetectable viral load, serosorting and HIV status disclosure have received mixed reactions from the participants of this study. A comfort with serovariant sexual and intimate relations lies at the heart of all of these debates. Among the participants interviewed, these issues tend not to be framed around a social actor's interest in having unprotected anal sex, but whether he is comfortable, in the first place, with engaging in serovariant sexual relations (including all forms of sexual activity, from mutual masturbation, to oral sex to anal sex), and if so, under what specific contexts.

The data demonstrates that a social actor is unlikely to alter his risk disposition drastically on a sudden whim. One does not easily ignore their lived experiences and social location in the interest of anal pleasures. Shifts in sexual practice take time and are usually implemented with great consideration. While emerging biomedical technologies are offering new opportunities for young HIV-negative gay men to manage HIV risk, from this study it is clear that these social actors do not quickly or easily alter their sexual practices given new information. New information is always processed through the risk disposition of a social actor. In particular, many at-risk HIV-negative gay men still rely heavily on serosorting as part of their risk management practices regardless of information on undetectable viral load or heightened risks associated with the undiagnosed. The fear of a particular social relation—that is, a serovariant sexual relationship—shapes how they interpret new prevention knowledge rather than the reverse.

HIV-negative gay men serosorting has always been a contentious issue within the gay and queer male community, since it directly discriminates against HIV-positive gay men and reproduces the stigma cycle (Dean, 2009; Flowers, 2001). Yet, prior to the transition to the biomedical era of HIV prevention, serosorting could arguably be justified under biomedical grounds since there wasn't enough scientific evidence available linking undetectable viral load with a reduced risk of HIV transmission. Serosorting was never great politically, but for many, it made sense pragmatically and medically (even factoring in condom use). However, emerging scientific evidence during the transition to the biomedical era of HIV prevention has complicated this position by demonstrating that it *may* be possible that serovariant sex in the context of undetectable viral load is lower risk than sex with other self-identified HIV-negative men who may in fact be positive. However, since there has been so much epistemic uncertainty associated with this evidence (as outlined in chapter three), particularly concerning its applicability for gay men, this situation has been nothing short of contentious among HIV experts.

It is not possible for me to argue here that serosorting is a more common sexual practice among young HIV-negative gay men today (the post-AIDS generation) than it has been for previous generations of gay men. However, what I can argue is that many of the gay men interviewed for this project did not *knowingly* have close relationships with HIV-positive men and that having a significant friendship with an HIV-positive man, by altering a social actor's risk disposition, can astronomically change a social actor's views on the necessity of serosorting. For many of these young HIV-negative gay men, the actuality of HIV infection has always been something greatly feared, but also something greatly unfamiliar—something that occurs to *other* men. Following Douglas, this otherness is what makes HIV so dreaded and seemingly morally dubious. To many of these young men, even meeting and befriending someone who is HIV-positive may be a strikingly novel experience (possibly unsettlingly for some with extreme risk aversion), let alone having sex with someone who is HIV-positive. This dynamic is substantially different than earlier generations of HIV-negative gay men (at least those living in cosmopolitan centres) who would have directly known more people living with the virus during the initial decades when incidence was accelerating rapidly (Dowsett, 2017; Halkitis, 2014; Rofes, 1998). While these previous generations of gay men no doubt also greatly feared HIV infection, the close intimate bonds with HIV-positive men and the collective struggle to end the epidemic would have also structured their risk dispositions and thus their opinions on serosorting.

Again, I cannot argue that older generations have been relying on serosorting less than younger generations. However, I can argue that HIV becoming less of a visible and pressing political issue does shape the risk disposition of young social actors, making many of them more risk averse by making HIV less recognisable (but no less feared). Thus ironically, political discourse aiming to protect the rights of HIV-positive men to not have to disclose their HIV status may actually foster a preference for serosorting by risk averse men. The less HIV-positive men are vocal about their HIV statuses, the more HIV remains something hidden and unfamiliar to young HIV-negative men. Alternatively, more disclosure could lead to more visibility and an awareness of HIV that is structured by friendly social relations, which may in fact reduce stigma and preferences for serosorting. This is a fact that was explicitly discussed by numerous participants in this study, many of whom feel that their risk tolerance has been greatly cultivated by their close relationships with HIV-positive men, either in sexual or platonic relationships. It was those with fewer close bonds to HIV-positive men that were the most risk averse and the most reliant on serosorting. Thus many participants believe that the disclosure of HIV status is necessary to end HIV stigma. HIV non-disclosure, as well as the social conflict that may arise when an HIV-negative social actor finds out that a former partner did not disclose his status, only further contributes to the HIV stigma cycle. By openly disclosing one's HIV-positive status, one may risk sexual rejection in a specific circumstance. However, they may be opening the doors to a broader acceptance of serovariant relations among HIV-negative men through the establishment of trust and friendship.

Of course, the situation remains quite complex. During the transition to the biomedical era of HIV prevention, serosorting *started* to become faulty on *both* ethico-political and epidemiological grounds; a shift that is noted in the HIV Stigma campaign examined in chapter four. However, the convergence of political interests to end discrimination caused by serosorting and the availability of convincing biomedical knowledge on the risk reduction associated with undetectable viral load was not yet complete. We have not reached a stabilising point on these issues. The risk associated with serovariant sex among gay men still remained fairly ambiguous and has been communicated with great caution by numerous HIV researchers and community organisations in Canada (see chapters three and four). Thus the young HIV-negative gay men interviewed for this project have had to confront serosorting as a complex ethico-political issue, given uncertain and rapidly changing social and political as well as biomedical arguments about the risks associated with serovariant sex.

Beyond biomedically assessing the uncertainties associated with serovariant relations, the participants of this study evaluated sexual and intimate scenarios from an ethico-political standpoint. They aimed to morally gauge whether their behaviour was right or wrong considering their understanding of current risk management strategies and their risk disposition, which has been forged by their unique experiences navigating this epidemic (see chapter six for review). There is a general sense among many of those interviewed that serosorting is morally wrong, or at the very least, ethico-politically limited—that it *is* a form of discrimination. However, among the more risk averse, even a relatively comprehensive understanding of both the biomedical and ethico-political implications of serosorting is not enough to allow them to easily overcome their fears of serovariant sex. For some of these HIV-negative gay men, serovariant sex has just been understood to be a high risk practice for so long that no logical explanation could make them change their minds. Sexually rejecting HIV-positive men is a key element of their risk disposition and how they are capable of managing anxiety when addressing their serostatus uncertainty. For the more risk tolerant, however, new biomedical advancements have allowed them to comfortably align their risk management practices with their political interest in reducing HIV stigma or their general interest in finding more sexual partners.

Throughout this chapter, I have also demonstrated a wide array of opinions on AIDS optimism, treatment optimism and the ethics of disclosure, which complicate some of the narratives found in risk surveillance and risk factor research that I first introduced in chapter three. Indeed, by examining the nuances of sexual practices and the complexity of sexual negotiation, I have called into question the validity and generalizability of AIDS optimism and treatment optimism research. I have demonstrated how biomedical optimism is not entirely pervasive among HIV-negative gay men and it does not always lead to heightened forms of sexual risk-taking. These findings could only be developed through a research practice that extended investigation into social practices and social actors less prevalent in the established literature—thus looking at dynamics beyond unprotected anal intercourse and men more removed from established epistemic communities. Focusing on high risk barebackers only tells us part of the story.

While there are currents of AIDS optimism and treatment optimism within the gay male population (many social actors do believe that HIV can be a managed condition and that HIV medications can reduce the transmissibility of the virus), this does not necessarily mean that those with optimistic attitudes are always engaging in higher risk sexual practices like unprotected anal sex. And just as much as there are those with optimistic beliefs, there are also those who are exceedingly sceptical about the benefits of biomedicine, especially on prevention. While we should not doubt that there are social actors who may use their biomedical optimism to justify having unprotected anal sex, this is most likely occurring among milieus where risk tolerance is quite high and sexual risk-taking is already common place (barebackers in bathhouses, for example) (Latapie, 2012; Race, 2001, 2003)

However, this study would suggest that among a more diverse group of HIV-negative gay men who are less linked up to the epistemic communities governing HIV prevention knowledge production in Canada, awareness of new biomedical technologies does not automatically lead to the abandonment of condoms for anal sex, and that among many of those at-risk, there is great apprehension about the role of new biomedical technologies. By closely analysing narratives of young HIV-negative gay men negotiating risk in their everyday lives, this chapter has argued that not all gay men are treatment optimistic. Some lack an adequate understanding of undetectable viral load and others consider all serovariant sex to be high risk. Men who are reliant on serosorting as a form of risk management tend to be extremely sceptical of undetectable viral load and resistant to changing their sexual practice. Serosorting is key to their risk disposition.

Some gay men do incorporate undetectable viral load into their sexual-decision making. However, these men are not abandoning condoms and tend to engage in serovariant relations after they have developed some rapport with their HIV-positive partners. Beyond critiquing the validity and generalizability of the treatment optimism hypothesis, in this chapter I have also exposed the complex layers of risk negotiation that gay men face in a climate of changing opinions on effective prevention strategies. I have demonstrated how decisions to serosort remain complex and sometimes divisive, with social actors recognising that serosorting can foster HIV stigma and that it discriminates against HIV-positive men. Despite this, the risk aversion of some social actors makes them incapable of considering serovariant sex safe.

These findings mirror some of the research that I reviewed in chapter three, namely the illuminating work of Prestage et al. (2012) who have argued that some gay men cannot consider condomless sex safe under any circumstance and some cannot consider any form of sex truly safe enough. This dissertation adds to this conversation by demonstrating that beyond risk reduction decision-making practices, these issues create very complex and challenging ethico-political dimensions that at-risk subjects must negotiate. Differences in opinion and expectations around risk management strategies can lead to conflict among social actors with different tolerances to risk.

What makes the biomedical optimism research somewhat insidious is that it implicitly suggests that many gay men may lack the reflexivity necessary to interpret the benefits of new biomedical knowledge and that they will simply rush to use available information to justify further sexual risk-taking. This type of thinking can then serve as a justification to minimise prevention education that would unambiguously highlight the benefits of undetectable viral load. However, one of the principal contributions of this chapter to HIV prevention science is the finding that HIV-negative gay men are far from uncritically adopting information on undetectability into their sexual practice and that many, particularly those who serosort, are in fact *resisting* incorporating this knowledge into their sexual practice. Consequently, producing more sexual health education on the prevention benefits of undetectable viral load (for both service providers and at-risk gay men) is unlikely to automatically lead to mass increases in treatment optimistic sexual risk-taking. It could, however, help to reduce HIV stigma and anxieties associated with serovariant sexual relations.

Moreover, while some studies that I have reviewed in the above chapters have demonstrated that there are HIV-negative gay men who do incorporate undetectable viral load information into their decision to have unprotected anal sex, such decisions may come only after very careful considerations of risk and social context (Grace et al., 2013). However, referring more generally to higher risk sex with casual partners, viral load information probably does not remain the principal motivating factor behind these decisions. Most likely treatment optimism exists as but one element among a range of psychosocial and material forces, which produce vulnerability that promotes sexual risk-taking among some gay men (Adam, 2016; Stall, Friedman, & Catania, 2007). Thus what makes the treatment optimism hypothesis potentially problematic, is that in focusing our attention on how individual social actors may be computing biomedical knowledge “incorrectly,” it pushes aside considerations of the social and structural components that are driving the epidemic (Adam, 2011). Arguably, addressing these social components should be a priority over researching the prevalence of treatment optimism any further.

Perhaps the reason why the AIDS optimism and treatment optimism hypotheses have endured in the field for so long despite equivocal evidence is because they are simplified understandings of the relationship between sex and biomedicine that are easy to collect in larger scale surveys, easy to analyse and easy to communicate to health professionals. We can either see the correlation between optimistic beliefs and increased sexual risk-taking or we do not. However, drawing on the tradition of critical social science on HIV, the examples brought forth in this chapter demonstrate that the relationship between sex and biomedicine is far more complex in everyday life, as a myriad of intersecting factors contribute to whether or not a social actor is willing to accept the prevention benefits of undetectable viral load. Moreover, when thinking about sex and biomedicine, social actors are not just considering the transmission of HIV. They must also factor in the social and ethico-political implications of their choices and consider how serosorting may reproduce HIV stigma. While recognising that these research findings may resist easy translation into prevention education and health policy, they do provide a counter narrative to over-simplified understandings of gay male sexuality that are promoted by epidemiological science through theories like treatment optimism. However, while theories like treatment optimism are easier to understand and communicate, arguably their benefits are limited if they do not reflect the diverse realities of those who are dealing with serostatus uncertainty in their everyday lives.

The last major issues I explored in this chapter were serostatus disclosure, and briefly, the criminalisation of HIV status non-disclosure. Once again, I demonstrated how participants carry a range of opinions on these matters, with those who prefer to serosort demonstrating a preference for disclosure and a more accepting attitude toward the criminalisation of non-disclosure and those more comfortable with serovariant relations tending not to require disclosure. Again, we see that is not possible to characterise young HIV-negative gay men so easily, in this case, as being pro-criminalisation. Indeed, among the participants studied, no one was relying on the legal obligation to disclose to justify having unprotected anal intercourse. Nevertheless, many participants do expect HIV-positive men to clearly disclose their HIV status before having sex of any kind.

The dynamics explored in this chapter may also be explained through some of the main ideas on biological citizenship posited by Rose (2005, 2007). The more we come to learn about the body at the molecular level, the more ethical dilemmas start to emerge. As Flowers (2001) has argued, more HIV risk management technologies lead to a diversification of risk and an increased pinpointing of blame. The more we have come to learn about the prevention benefits of ART and viral load counts, the more we have to reconsider the risk and safety of serovariant relationships. However, not only is the biomedical research on these issues ambiguous for gay men, but the actual pragmatic dimensions of testing viral load (of daily monitoring one's health at the molecular level) may make translation into sexual practices difficult. What if the viral load of a sexual partner temporarily spikes between medical appointments? What if an HIV-positive partner can never achieve an undetectable viral load? What about the dangers of co-infections? How can we act as ethical social actors when we can't see or even physically feel health risks?

Thus through HIV prevention science we are witnessing an expansion of our view of the human body at the microscopic level, but in so doing, we are also expanding the ethical dimensions of what we do with the human body. Consequently, we see diverse biological citizenship claims from HIV-negative gay men, either in support for the criminalisation of HIV nondisclosure or calling for a decrease in its application. In both instances, gay men are negotiating with the state and with other gay men on somatic terms, evaluating the moral and political dimensions of serovariant relations at the molecular level. In the absence of the stabilising point, what actually constitutes the right course of action, for either an individual social actor or a social institution, may remain fairly unclear and contentious. Social actors must make their biological citizenships in the face of tremendous doubt, factoring in details from the population level to the microscope activity of our blood cells.

To summarise, at-risk social actors are constantly moralising their sexual and intimate behaviour, trying to determine if they are indeed acting in a responsible manner and if they are treating others with a fair degree of respect. This can be a challenging process for the risk averse social actor whose risk disposition, his particular social location and experiences with the epidemic, makes it very difficult for him to accept serostatus uncertainty at a particular moment in his life. In certain instances, this could lead to social conflict when two social actors with very different risk tolerance levels and understandings of contemporary risk management practices, come to a sexual or romantic situation with different expectations.

The data collected indicates a trend toward biomedical optimism among some HIV-negative gay men, as many participants in this study seem to be encouraged by the developments in HIV treatments, and in particular, treatment's impact on prevention. This is allowing these social actors to become more comfortable with the idea of having serovariant sex. Nonetheless, unlike the concerns voiced in the epidemiological literature reviewed in chapter three, biomedical optimism does not appear to automatically lead to the abandonment of condoms and there still exists a large portion of HIV-negative gay men who are actively pessimistic about new treatments and who remain unsure about serovariant relations, even if they do see serosorting as morally flawed and producing stigma. What is clear from the narratives of the participants of this study, is that as they grow up, they continue to reflect on their sexual experiences, gain new knowledge and build new perspectives on the epidemic. Thus opinions about biomedical optimism, serosorting, disclosure and criminalisation shift as social actors understand and moralise these issues differently based on their evolving risk dispositions.

In closing, the lack of consensus among HIV experts in the third decade of the epidemic has created additional complexities for the management of HIV risk and the experience of serostatus uncertainty in everyday life. Most of these prevention issues are not new to this decade, but are issues that have simply been further convoluted by a series of contradictory scientific evidence and governing practices. Consequently, epistemic and social and political uncertainties have challenged and shifted the nature of both epidemiological and experiential serostatus uncertainty. HIV-negative gay men, operating from their unique risk dispositions at a particular moment in time, must make sense of these complexities while managing serostatus uncertainty in a way that best fosters their well-being. The process is difficult for many. Many of the men interviewed remain somewhat ambivalent over the safety and fairness of their risk management choices. During moments of serostatus uncertainty, such ambivalence can blend into painful moments of anxiety. The risk disposition of HIV-negative gay men is never secure in the absence of a stabilising point. Continual adjustments to their risk management practices and social conflicts related to risk negotiation can be disorienting and challenging. When it comes to sexual practice, making sense of what is responsible and morally superior behaviour is not always an easy or straightforward process for HIV-negative gay men, especially when risk management practices are communicated with so much uncertainty and room for interpretation. Nonetheless, against great epistemic and social and political uncertainties, young HIV-negative gay men continue to implement their agency in response to being at-risk, which periodically means confronting the ethics of safer sex and the ambiguity of risk management practices.

Out beyond ideas of wrongdoing
and right doing there is a field.
I'll meet you there.

When the soul lies down in that grass
the world is too full to talk about.

-Rumi

Conclusion

HIV and the Uncertain Future

The preceding pages have been a critical reflection on how everyday people cope with uncertainty and how scientists, institutions and community advocates cultivate and manage doubt, using it as a tool to govern the conduct of citizens in order to achieve diverse biopolitical ends. Everyday, young gay men (and women) find themselves in medical offices awaiting the results of an HIV test. The vast majority will test negative. Yet, this moment of clarity may be short lived. Most of these young men will find themselves, once again, uncertain about their HIV statuses and will eventually have to return back for another test. For each social actor, this cycle will continue until his sexual life yields no risk for HIV infection—which, for many, may be never. Reflecting on this cycle, on gay men's experiences of testing and re-testing, of moving from no risk to (some) risk, of shifting from certainty to uncertainty, has been one of the principal goals of the above chapters.

Throughout this dissertation, I have been demonstrating how the HIV prevention field in Canada has failed to achieve a stabilising point in its third decade. Experts have failed to achieve a consensus on the efficacy and effectiveness of long-standing and emerging prevention tools. Consequently, we have witnessed a proliferation of epistemic and social and political uncertainties. New knowledge is continually produced that complicates our understandings of HIV prevention, but that often lacks appropriate validity and generalizability. Various governing practices have been implemented to respond to this new knowledge, but have done so in conflicting or ambiguous ways, making it impossible for everyday social actors to know how, in the language of governmentality theory, they should conduct their conduct.

There is no doubt that those working in the HIV prevention field have achieved truly incredible things during the transition to the biomedical era of HIV prevention. However, the continual production of uncertainty has posed unique challenges for those who must practise HIV prevention in their everyday lives. Indeed, recently emerging knowledge production and governing practices have actually not been able to eliminate the experience of serostatus uncertainty. In fact, they have actually only amplified these experiences by breathing doubt into every prevention practice and often characterising HIV-negative identified gay men as the highest sources of risk. Thus at the individual and interpersonal levels, HIV risk management has also been marred by great uncertainty. Despite all of our advancements in the field, serostatus uncertainty has remained inescapable and has become even more ethico-politically complex for HIV-negative gay men.

A significant portion of this dissertation has thus focused on this experiential uncertainty, on the continued experience of serostatus uncertainty. This analysis has granted us insight into the lived experiences of social actors, but has also provided us with new critical knowledge that has been used to make sense of knowledge production practices and governing practices in the HIV prevention field. Through this critical reflection, I have argued that young HIV-negative gay men regularly face great uncertainty in relation to HIV prevention practices and that this has a great influence on their well-being. Among these social actors, the fear of seroconversion remains an omnipresent concern. This fear comes to determine, at least in part, how these men participate in (gay) social life and how these men come to moralise and politicise sexual conduct. Consequently, I have argued that serostatus uncertainty operates as a powerful analytic lens to make sense of the social and political dimensions of this epidemic among gay men.

As a work of critical social science motivated by institutional ethnography, this project has drawn on the lived experiences of everyday social actors to question ruling forms of knowledge in the HIV prevention field. To follow the language of Boltanski (2011), my goal has been to understand the discontent of everyday social actors as a way to highlight how current conditions are unacceptable. A significant quantity of established epidemiological and social scientific literature on gay men and HIV prevention focuses on understanding motivations and justifications for sexual risk-taking. *Why do gay men have unprotected anal intercourse or bareback when they know that it can lead to HIV infection? What factors contribute to increases in sexual risk-taking?* In contrast, I recognise that among the sexually active, (some) risk is (nearly) unavoidable and HIV-negative gay men must routinely deal with moments of serostatus uncertainty, with not knowing for certain whether or not they remain HIV-negative. Thus rather than focusing on understanding rationales for having unprotected anal sex, in this dissertation I have explored how gay men manage serostatus uncertainty in their lives. *What is it like to live one's sexual and romantic life with serostatus uncertainty as a constant consideration? What is it like to routinely go through long periods of time not knowing your HIV status*? Emphasis on exploring the experience of serostatus uncertainty over understanding rationales for having unprotected anal intercourse is one of this dissertation's main contributions to the field of critical social science on HIV.

There are five main ways in which this dissertation offers original contributions to critical social science perspectives on HIV, to HIV prevention science and to research on gay men's sexual health more generally. By original contributions, I am referring here to ideas that are either novel to the field of HIV prevention science or ideas that represent innovative extensions from the existing literature. HIV prevention science is vast and many of the ideas put forth in this dissertation are clearly indebted to the exceptional work of critical social scientists working in the field of gay men's sexual health, as well as critical theorists from across the social sciences and humanities. It is necessary to recognise this project more as a productive dialogue with this work, rather than as a radical departure from the established critical literature.

The first main original contribution is the methodological framework of this project, which is rooted in a merger of critical social science perspectives on HIV and critical risk and uncertainty studies. The analysis of the interplay between uncertainty management activities (knowledge production, governing practices and everyday experience) and the use of the uncertainty triad (epistemic, social and political and experiential uncertainties) as an analytic tool, marks an original contribution to critical social science on HIV. The second original contribution is a focus on the production, cultivation and management of epistemic and social and political uncertainty in the HIV prevention field in Canada during the transition to the biomedical era of HIV prevention. The third creative contribution surrounds the recruitment strategy and data collection methods for the interview portion of this project. The fourth and primary original contribution of this dissertation is the development of risk disposition theory, which has been produced by closely analysing experiences of serostatus uncertainty over focusing on justifications for unprotected anal intercourse. The final major contribution is a focus on the social and ethico-political dimensions of HIV risk negotiation among HIV-negative gay men in Canada during the transition to the biomedical era of HIV prevention, with a particular emphasis on the role of serosorting. I will now summarise each of these key contributions.

(1) Methodological Framework

In this section, I will chart out three original methodological features that came to guide data collection and analysis for this dissertation.

i. Transition to the Biomedical Era of HIV Prevention

I began this investigation by first situating this project temporally, focusing on gay men and HIV risk management practices from (roughly) 2004-2014, a period I termed as the transition to the biomedical era of HIV prevention. The transition to the biomedical era of prevention has been characterised by an anticipative disposition toward biomedicine's role in HIV prevention practice, along with great a deal of uncertainty and debate over the future of biomedically-based HIV prevention practices. During the transition to the biomedical era of HIV prevention, biomedical technologies could *begin* to supplement behavioural approaches to prevention (e.g. condom use), but could not replace them entirely.

In the introduction to this dissertation, I listed several major characteristics of the transition to the biomedical era of HIV prevention. The three most pertinent features include HIV shifting from a death sentence to a chronic manageable condition, with continued improvements to treatment and care throughout the 2000s. The second main feature includes the accumulation of biomedical research arguing that HIV-positive persons with undetectable viral loads that have been managed by HIV treatments have a reduced risk of transmitting the virus to their sexual partners. By affecting the risk associated with serovariant sexual relations and the undiagnosed, information on viral load has radically but incongruously altered perceptions about HIV risk management. Indeed, the transition to the biomedical era of HIV prevention can best be understood as a period marked by the simultaneous increase in optimism and incredible uncertainty and scepticism on the risk reduction of undetectability. The third characteristic is the more direct role of medications in prevention practice by HIV-negative persons, mainly through the use of PEP (post-exposure prophylaxis) and more recently PrEP (pre-exposure prophylaxis). I note, however, that PrEP remained inaccessible to most gay men until *after* the time period under exploration in this dissertation. In fact, it still remains quite inaccessible in Canada today.

The transition to the biomedical era of HIV prevention is an original concept. Arguably, it is a logical extension from Flowers' (2001) *technological phase*, whose theoretical explorations on risk management are confined to before 2000. The transition to the biomedical era of HIV prevention has been useful in this dissertation to help contextualise the various dynamics under discussion within a particular historical period. As a broad *transitory* phase, the concept has also been useful for helping us to contextualise the stories of the gay men interviewed within a *shifting* landscape. So for example, I didn't just collect information on what research participants thought about undetectable viral load, but I contextualised these opinions and experiences associated with undetectability within a historical frame that saw the HIV prevention field, internationally and nationally, offer dramatically different perspectives about this prevention issue. Understanding how gay men have potentially been shifting their sexual practices in relation to how the HIV prevention field has been simultaneously shifting (though often slowly, contradictorily and reluctantly) its stance on biomedical technologies, has been crucial to offering original insights in this dissertation.

ii. Critical Social Science on HIV

After introducing the transition to the biomedical era of HIV prevention, I then moved on to describe the parameters of this project through the scholarly paradigm of critical social science on HIV, a branch of the more general field of HIV prevention science. I argued that critical social science on HIV prevention contains four interrelated characteristics. First, it utilises critical social theory and methodological frameworks from the social sciences and humanities to ask questions about power and politics. Second, it is a reflexive exercise that investigates how the HIV field supports certain knowledge production practices and truth claims at the expense of others. The concept of the field is drawn here from Epstein's work on HIV science, to refer to domains of action where social actors compete to produce knowledge and implement expertise. I also drew on Holt's (2014) use of epistemic community in this dissertation, which similarly refers to a network of professionals and individuals with acknowledged expertise and competence in a subject, who are responsible for producing research and implementing policy for a particular issue like HIV.

Third, critical social science on HIV routinely critiques the hegemony of ruling forms of knowledge in the field, namely biomedical and public health research practices which have a tendency to flatten out the social with their emphasis on individual behaviour and reductive theories based on the health belief model. And fourth, in order to offer contrasting narratives to biomedical and public health research, critical social scientists tend to produce more nuanced accounts of gay male sexuality or sexual practice. Stemming from the work of Kippax and her colleagues, sexual practice refers to an understanding of sex acts in context—understanding how particular individuals in particular locations at particular moments in time come to respond to sexual decision making in particular ways (Kippax & Race, 2003; Kippax & Stephenson, 2005). Drawing on a study of HIV prevention practices among bisexual men and women that utilises an institutional ethnography framework (Namaste et al., 2012), I presented one approach to critical social science on HIV as a form of critical inquiry that draws on the everyday experiences of social actors, particularly those less included in the established literature, to question ruling forms of knowledge (such as epidemiological science) within the HIV prevention field. From this critical methodological position, social scientists not only review established research. They also observe examples of ruling relations, which are texts, documents, policy reports and education campaigns that utilise research findings to coordinate the social. Though not the main analytic frame, throughout this dissertation I have routinely returned back to some of the main principles of institutional ethnography to organise data collection and analysis, in order to supplement some of the theoretical and methodological interests of critical studies on risk and uncertainty.

There is a long tradition of researchers employing critical or non-mainstream methods to health research in the HIV prevention field and discussing the benefits of critical social scientific and humanities approaches to health research (Mykhalovskiy & Rosengarten, 2009a, 2009b; Kippax, 2012). In Canada, the emergence of "critical social science" as the reigning term to describe critical perspectives on HIV can best be attributed to a meeting held at the OHTN in 2008, which resulted in the document "Critical Work: Invigorating Critical Social Science & Humanities Research on HIV/AIDS in Ontario." For here, the term critical social science became routinely applied at a series of symposia in Canada over the following years.[29]

Nonetheless, thinking in and through the concept of critical social science on HIV to guide a project's methods and purpose is an original contribution. This dissertation is not just an example of critical work. It is an explicit use of the critical social science research paradigm to organise the collection and analysis of research findings from its very foundations. A lot of the established literature that I reviewed under the label of "critical social science," does not directly name itself as a work of critical social science, even when it explicitly distances itself from

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[29] Some symposia and panel examples include: "Using Critical Social Science Theory to Inform Research and Practice" (Ontario HIV Treatment Network, 2011); "New Directions for Critical Perspectives on HIV" (Canadian Association for AIDS Research Auxiliary Event, Concordia University, 2012); and "Beyond Failure: Thinking Critically About HIV Prevention, Research and Services" (Symposium, Concordia University, 2013).

mainstream approaches to health research. However, in this dissertation I have systemically used critical social science to guide the methodological components of this project, using it to ultimately make sense of the epistemological dimensions of the HIV prevention field in Canada by offering critical literature reviews of both mainstream and critical work on HIV and gay men. The interdisciplinary review of critical scholarship on gay men and HIV risk serves as another significant contribution of this dissertation, particularly since this review includes analysis of both social scientific and humanities texts. Others have certainly commented, both directly and indirectly, on the general field of critical literature on gay men and HIV prevention (Adam, 2011; Kippax, 2012; Kippax & Race, 2003; Mykhalovskiy & Rosengarten, 2009b). Yet, arguably chapter four represents a more comprehensive view of these discussions, including a consideration of some of the limitations of critical inquiry (e.g. focus on barebacking) and how the critical field also aggrandises epistemic uncertainties to achieve particular biopolitical ends (e.g. Adam, 2011).

To be clear, this dissertation does not take credit for the concept of critical social science on HIV or claim that its approach to studying HIV is entirely original. The above project is clearly indebted to established critical work—particularly the innovative analysis of Adam, Epstein, Flowers, Kippax, Mykhalovskiy, Namaste, Odets and Race. It does, however, offer itself as an explicit and innovative exemplar of critical social science. It provides fairly clear methodological steps for those interested in conducting their own critical project on HIV or those just interested in reviewing the HIV prevention landscape from a critical lens.

iii. Critical Risk and Uncertainty Studies: The Uncertainty Triad

Keeping the goals of critical social science on HIV prevention in mind, I began chapter one with a review of theoretical literature on risk and uncertainty. I defined risk as the probabilistic exercise of making sense of uncertainty. And I defined uncertainty as the limitations of our knowledge, an awareness of that which we do not fully know and the experience of being doubtful. Risk and uncertainty are parallel concepts. When a social actor is at-risk, he is uncertain if an adverse event will be realised. However, whereas the concept of risk implies that we have a solid understanding of the probabilities for favourable and adverse events occurring, uncertainty implies that we are not fully aware or clear on these probabilities. This is why in this dissertation, I more regularly employ the concept of serostatus uncertainty instead of the more common term at-risk. With this original conceptualisation, I have aimed to complicate the relationship between a social actor and HIV prevention, arguing that it isn't necessarily a social actor's failure to compute risks accurately that leads to ambiguity over his HIV-negativity. Rather, the rules of effective risk management remain largely contested, thus making serostatus uncertainty a near inevitability. Social actors often experience serostatus uncertainty, or being at-risk, not because they fail to manage risk, but because the elements that make up HIV prevention are uncertain.

I further divided the general category of uncertainty into three modalities to correspond to the three main domains of uncertainty management: knowledge production, governing practices and everyday experience. Epistemic uncertainty relates to the limited validity and generalizability of our knowledge that is a result of the inadequacies of our scientific research methods and diagnostic tools. Social and political uncertainty refers to the broader group effects and social justice issues that are a product of the governing practices implemented to deal with the threats of the unknown and the existence of epistemic uncertainty. Experiential uncertainty refers to social actors' pragmatic confrontations with the unknown. These three modalities of uncertainty make up the uncertainty triad, which is another original contribution to critical social science on HIV, as well as to critical risk and uncertainty studies.

Drawing on risk society theory, I then termed a stabilising point as a phenomenon where there is a general alignment among knowledge production practices, governing practices and everyday experience. Uncertainty may not be eliminated, but there is general congruence among the social practices in each of these domains and consensus among experts on how to best manage uncertainty. Social actors no longer have to rapidly adjust their social practices given new knowledge about these social practices. New information may emerge over time, however, the process is no longer paradigm shifting. The absence of a stabilising point means that there is a continual production of uncertainty in each of these domains, leading to the revaluation of social practices in the two domains. The key argument of this dissertation is that the HIV prevention field has not achieved a stabilising point during the transition to the biomedical era of HIV prevention. Consequently, we have examined a proliferation of epistemic and social and political uncertainties and their effects on experiential uncertainty, namely through serostatus uncertainty. We have witnessed how a lack of a stabilising point consistently challenges social actors who are asked to adjust their social practices in light of newly emerging, but highly contested and uncertain knowledge.

After introducing these original concepts and frames, I then moved on to review different schools of critical thought on risk and uncertainty, paying particular attention to how they discuss the interactions between knowledge production, governing practices and everyday experience. Risk society theory argues that managing risk and uncertainty are central to the development of contemporary social institutions and self-identity. Practices of risk reflexivity (renegotiation of social practices given new knowledge about these practices) are at the cornerstone of risk society theory and have been incorporated directly into the original methodological concepts and analytic frames just described. Cultural theory on risk proposes that all risks have moral and political dimensions. Those who are considered to pose the highest degree of risk to a community are considered threatening and are stigmatised accordingly. Consequently, ideas about appropriate levels of risk-taking must always be contextualised within the community whose norms and values come to determine what is and what is not considered to be culturally acceptable. Governmentality and biopolitical theory focus on how social actors are turned into at-risk subjects, into social actors who are understood, monitored and governed in relation to a particular threat and who are thus expected to self-regulate in response to this threat. Under neoliberal governmentality, social actors are expected to routinely monitor and manage health risks, not just for their personal benefit, but also for the interests of the entire population. Prevention of illness is a moral imperative for the responsible biological citizen in the neoliberal era. And finally, work that focuses on the experiential dimensions of risk and uncertainty emphasizes how such experiences may produce anxiety and vulnerability as social actors come to feel incapable of addressing unknown and adverse events in the future. Understanding how social actors implement agency in response to risk and uncertainty requires us to go beyond understanding how social actors logically process risk related information. We need to examine how they are affected by confrontations with the unknown and how emotional reactions are themselves moralised and politicised—how various emotion management strategies and emotional pedagogy strategies position some reactions to HIV risk as being more favourable than others. I examined specific examples in this dissertation where the emotional reaction of at-risk social actors or the emotion management practices of HIV education campaigns were problematized and considered morally dubious.

From this review of critical theoretical literature, I developed an original analytic framework premised on the three spheres of uncertainty management activity and the uncertainty triad. Knowledge production: What types of knowledge are being produced about HIV risk management? How is epistemic uncertainty associated with this knowledge being addressed? Governing practices: What governing practices are being implemented to respond to HIV risk and serostatus uncertainty and to emerging information about prevention practices? How are the social and political uncertainties associated with these governing practices being handled? How are social institutions moralising and politicising shifting sexual practices? Everyday experience: How are social actors experiencing HIV risk in their everyday lives? How are social actors adjusting their sexual practices in response HIV risk? How do social actors perceive themselves as being at-risk for HIV?

These questions helped to organise the review of the scientific literature and to develop an original empirical project that could contribute to the field of critical social science on HIV. Of course, many HIV scholars have used concepts and theories from critical risk and uncertainty studies to make sense of HIV prevention practices (Adam 2005, 2006; Flowers, 2001; Girard, 2013). However, this dissertation offers creative uses of these ideas by drawing on all four of the major schools of thought on risk and uncertainty and using risk and uncertainty theory to specifically develop questions to guide a critical review of the established literature and to set up the parameters for an empirical project. The development of the uncertainty triad as an analytic frame to investigate knowledge production, governing practices and everyday experience, along with the concomitant concepts of the stabilising point and conditions of uncertainty are also all original extensions of this literature. Consistently thinking in and through the uncertainty triad was essential to the development of many of the original arguments produced in this dissertation, as it allowed me to explain how uncertainty manifests in unique ways across various domains of risk and uncertainty management. This allowed me to observe not only the nuances of activity within each domain of uncertainty management, but to also note and question the incongruencies and tensions across these domains. Arguing that uncertainty exists in the HIV prevention field is one thing. Through the uncertainty triad, I took this argument further by explaining how specific types of uncertainty associated with specific social practices, influence other domains of social practice. Furthermore, thinking in and through the lack of a stabilising point allowed me to develop a research project that did not simply focus on why gay men fail to adopt risk management practices correctly, but instead to focus on how HIV-negative gay men build their agency under conditions of uncertainty.

Moreover, in my analysis I regularly drew on the sociology of emotions to add an extra analytic layer to the above investigations and to chart, in the language of in/capacity theory, how emotions serve as the bridge between agency and structure. While many sociologists in the HIV prevention field make passing reference to emotions (Adam 2005, 2006), they don't always explore the sociological role of emotions in the management of HIV risk in much detail (with Gould being an obvious exception, though her interest is more on activist movements than prevention *per se*). However, by drawing on in/capacity theory and additional sociological work on emotions and risk, a close examination of anxiety remained at the very foundation of the development of my original theory on risk disposition and HIV-negative gay men. I also drew on these emotion frameworks to critically investigate the emotion management strategies of various emotional campaigns, adding insight into the ways in which we govern gay men as at-risk subjects. Though not principally positioned as a work in the sociology of emotions, arguably this dissertation adds further nuances about emotional life and the management of anxiety to existing sociological investigations of HIV prevention, as well as to social scientific investigations into knowledge, health and sexuality more broadly.

In sum, I began this dissertation by first situating it temporally within the transition to the biomedical era of HIV prevention, then by outlining the characteristics and general approach of a critical social science project on HIV. Subsequently, I used theories and concepts from critical studies on risk and uncertainty to develop the uncertainty triad, thus setting up the foundations for an original literature review and empirical exploration. Each of these steps has clear resonance with the established literature on HIV prevention and gay men. Yet, taken as a whole, the broad methodological framework of this dissertation represents an innovative use of multiple intersecting conceptual frameworks that have been leveraged to develop an original empirical investigation on HIV-negative gay men and HIV in Canada.

(2) Production and Cultivation of Uncertainty in the Transition to the Biomedical Era of HIV Prevention

After outlining some of the key biological and behavioural components of HIV prevention practice in chapter two, I then moved on in chapter three to review several branches of ruling forms of knowledge in the HIV prevention field: (1) risk surveillance and assessment research, which quantifies, qualifies and monitors risks and prevention strategies within a population and (2) risk factor research, which seeks to determine underlying causes or motivations for risk-taking in a population. Structuring a critical literature review via these different forms of risk related research is another original contribution to the field of critical social science, which generally reviews all forms of epidemiological and public health research as one type. Implementing this structure has allowed me to make more pointed arguments about exactly how mainstream health research aggrandises or minimises uncertainties in different fashions. From this review, I argued that biomedical and public health research has routinely produced epistemic uncertainty and has actively cultivated doubt about long-standing HIV prevention practices during the transition to the biomedical era of HIV prevention. Those who have to manage serostatus uncertainty in their everyday lives must make sense of this uncertainty and the conflicting messages communicated by the HIV prevention field.

Epistemic uncertainty is an inevitable by-product of all scientific inquiry—the more we know about some things, the more doubts, speculations and contradictions will arise. Uncertainty has thus been a product of HIV prevention science since the very beginning of this epidemic, often with some experts minimising the epistemic uncertainty associated with particular evidence in order to achieve specific biopolitical goals such as accelerating access to lifesaving drugs (Epstein, 1996). The objective of this dissertation, however, has been to focus on how experts have either minimised or amplified epistemic uncertainty in order to problematize particular behaviours, populations and health related policies. The critical emphasis of chapter three, as well as many arguments discussed in chapter four (my review of critical perspectives on HIV prevention), is not just that there is epistemic uncertainty in HIV prevention science (which would be true of any health research field). Rather, I examined how HIV experts have used this uncertainty during the transition to the biomedical era of HIV prevention to achieve different biopolitical goals. In other words, following the uncertainty triad, in chapters three and four I examined the intricate relationship between knowledge production and governing practices, between epistemic and social and political uncertainties.

Uncertainty is cultivated when epidemiological statistics are used to “beat-up” the epidemic, which creates a greater sense of urgency that makes seroconversion seem almost inevitable among sexually active gay men. Beating up the epidemic doesn’t produce uncertainty explicitly, it more accurately minimises the epistemic uncertainties of epidemiological data sets in order to create a dire picture that magnifies social and political uncertainties. In so doing, it helps to increase the degree of social and political severity we attach to emerging scientific claims, such as information on undetectable viral load. Beating up the epidemic also means inflating the prevalence and dangers associated with serostatus uncertainty, the experience of being at-risk. I discussed numerous examples, such as the HIV Stigma campaign, which purposely drew on epidemiological statistics to frame serostatus uncertainty as the key culprit behind new infections in Canada. Under newer epidemiological models like the Treatment as Prevention paradigm or the Treatment Cascade epidemiological model, serostatus uncertainty has routinely been framed as a great danger to population health. The importance of knowing your HIV status has been central to HIV prevention education messaging since the 1980s. Yet, more knowledge about the risks associated with acute infection and the risk reduction associated with managed viral loads, has added further credence to the belief that untested men (men who would normally self-identify as HIV-negative) are the major sources of HIV incidence. Furthermore, epidemiologists have continued to question the risks associated with all sex acts between men as well as the risk reduction benefits of all prevention practices, including condom use. Oral sex can be framed as a negligible, low or moderate risk act depending on which education manual or research report one examines. Condoms can be our best tool against the spread of HIV or most instances of HIV transmission can occur during instances of protected anal intercourse. There is no real consensus under these conditions of uncertainty.

A prime example of the production and cultivation of uncertainty in HIV research relates to debates on undetectable viral load. In fact, many of the arguments presented throughout this dissertation hinge extensively on the epistemic uncertainty associated with undetectable viral load research, making the risk reduction associated with undetectable viral load one of the defining matters of the third decade of this epidemic. As a significant subject of risk, viral load information has drastically altered how we think about at-risk subjects. It is an issue that has fundamentally influenced all three domains of the uncertainty triad.

During the transition to the biomedical era of HIV prevention, more biomedical research was produced about the risk reduction benefits of undetectable viral load, particularly in relation to heterosexual sexual relations. While these biomedical findings were encouraging, there were still significant gaps in the available clinical studies—that is, epistemic uncertainty—making it impossible to confirm that the risks of HIV transmission are reduced to negligible levels in the context of serovariant homosexual relations where the HIV-positive partner has achieved an undetectable viral load. Consequently, researchers and community leaders often worried that gay men would use these new findings to justify having unprotected anal sex, a hypothesis known in the field as treatment optimism. Epidemiologists and social scientists have measured treatment optimism in surveys by correlating attitudes about the prevention benefits of HIV treatment with proclivities toward having unprotected anal sex. The results have tended to be mixed or unconvincing. Nonetheless, the treatment optimism hypothesis has endured and is often used to explain increases in HIV incidence rates among MSM in the 2000s.

In the meantime, community organisations and activists in Canada produced various documents, or governing practices, which either critiqued an over reliance on undetectable viral load in sexual practice or alternatively critiqued a reliance on serosorting, thus (directly or indirectly) critiquing gay men who were not incorporating information about undetectable viral load into their risk management decisions. Legal policy over HIV non-disclosure has also been adjusted to factor in undetectable viral load in a fashion that simultaneously acknowledges its risk reduction capacity, but that also remains sceptical of its effectiveness as a standalone prevention measure in the context of serovariant (heterosexual) sex. Some HIV activists believe this policy adjustment is unfair toward HIV-positive people and an unreasonable interpretation of available scientific evidence, arguing that achieving an undetectable viral load is tantamount to posing negligible risk. In sum, epistemic uncertainty associated with undetectability has raised challenges for the implementation of effective governing practices, thus producing a series of social and political uncertainties.

The pertinent issue in this dissertation is not just that we lacked unequivocal scientific knowledge about the prevention benefits associated with undetectability during the transition to the biomedical era of HIV prevention. Adam (2011) has already critiqued the limits of the

Treatment as Prevention model on multiple fronts, including the fact that the available scientific evidence was not convincing enough to associate undetectable viral load with negligible risk of transmission among gay men. Rather, the focus of this dissertation has been on how this epistemic uncertainty has ended up producing a mixed array of education messaging, policy and advocacy practice about serovariant sex. Moreover, the epistemic uncertainty associated with undetectable viral load ended up producing even more risk factor theories about why gay men have unprotected anal intercourse.

When Flowers (2001) wrote about the technological phase of HIV risk management at the end of the 90s, he already argued that undetectable viral load was challenging conventional opinions about HIV prevention and serovariant sexual relations. However, what makes the transition to the biomedical era of HIV prevention somewhat different from the technological phase, is the substantial increase in evidence and biomedical theories on the association between undetectable viral load and prevention such as the Treatment as Prevention model. In the technological phase, this association was more of a speculation based on limited biomedical evidence; though, importantly, some gay men were already incorporating this information into their sexual practices (Race, 2003). However, during the transition to the biomedical era of HIV prevention, the risk reduction of undetectable viral load became a more accepted belief among prevention experts, but one whose validity and potential adverse repercussions on population health were constantly being questioned.

To put it somewhat differently, an outsider to the field of HIV prevention may be mistaken in believing that by around 2011, three decades into the HIV epidemic in North America, there would have been clear consensus (or some consensus) among HIV experts on what constitutes effective HIV prevention practices among gay men. Yet, as I argued in chapter three, this has hardly been the case—things have been unquestionably uncertain. The HIV prevention field had failed to achieve a stabilising point. While researchers have produced more evidence about the risk reduction benefits on everything from oral sex, to condom use, to undetectability, to PEP and PrEP, they have also produced more epistemic and social and political uncertainty, consistently allocating and aggrandising risk to all sex acts between men. This undoubtedly posed challenges for the implementation of effective governing practices that needed to respond to this changing knowledge and to shifting social practices. The end result has been a mix of ambiguous and contradictory approaches to risk management that end up raising complicated ethico-political questions for everyday social actors.

The HIV prevention field in Canada, for all of its wonderful prevention resources for service providers and at-risk clients, has simply not reached a consensus on key prevention issues. During the transition to the biomedical era of HIV prevention, one may ask a simple question: what is safer sex? Under conditions of uncertainty, the vexatious response to this question: it depends on whom you ask.

(3) Recruitment Strategy, Data Collection and Analysis

After reviewing critical literature on gay male sexual practice, I then moved on to develop an original research project examining how HIV-negative gay men are affected by serostatus uncertainty during the transition to the biomedical era of HIV prevention. This empirical project was built by reviewing the foundational elements of critical social science perspectives on HIV (and institutional ethnographic methods in particular), critical studies on risk and uncertainty (with the experiential domain of the uncertainty triad in mind) and a close reflection on some of the gaps present in HIV prevention science (particularly the critical subfield on gay men and HIV prevention reviewed in chapter four). Thinking in and through all of these key domains was necessary to produce an original empirical project.

To achieve this, I recruited young (aged 18-35) HIV-negative or serostatus unknown men who are gay or queer identified and who have had one or more experiences where they were unsure about their HIV statuses, for whatever reason. This project is certainly not the first to focus on younger gay men. However, it does offer original insight into how the Post-AIDS generation, those born during or after the AIDS crises years (Dowsett, 2017; Halkitis, 2014; Rofes, 1998), has been affected by serostatus uncertainty. It certainly offers a critique against any of those who would consider younger gay men to be either ambivalent or apathetic to the thought of living with HIV.

Following the tenets of institutional ethnography, my objective behind setting these recruitment criteria was to enlarge our view of the social by drawing on social actors and social practices less discussed in the established literature. In order to avoid tapping exclusively into established epistemic communities, participants were recruited who had not previously participated in an in-depth, in person research interview about HIV/AIDS and who had not had regular or active involvement in an AIDS Service organisation (ASO) prior to the interview. Participants could not currently be volunteers for an ASO or be HIV service providers or have had a substantial history with an ASO.

This recruitment strategy is original on several levels. Primarily, a focus on gay men less connected to major HIV epistemic communities represents an original observation of HIV knowledge production practices, particularly in Canada. Most research on gay men and HIV in Canada relies heavily on recruiting through gay based venues, hyper sexualised spaces like bathhouses (where a significant bulk of HIV prevention education and outreach occurs) and through ASOs. Under the Community-Based Research (CBR) paradigm, researchers are actually expected to work directly with ASOs in order to develop research questions and recruit research participants. In this context, the questions we ask are framed through the needs of the established HIV prevention field. We tend to speak to those men who are likely to be more knowledgeable about HIV and who have more direct experiences with the field. However, this dissertation focuses on HIV-negative gay men less tapped into the established epistemic community, thus avoiding speaking solely to those who can be considered to be “HIV experts” or those more “in the know.”

This recruitment process has allowed me to observe differences between the theories developed by active members of the established HIV prevention field (ideas that make it into research articles, community education and activist art) with the realities of a more diverse group of HIV-negative gay men. For example, much discussion has occurred in the field over whether gay men are using undetectable viral load information to justify having unprotected anal intercourse, which obscures the fact that many gay men less tapped into the HIV prevention field have a very minimal awareness of undetectable viral load. A significant portion of the men interviewed are also unaware of PEP, PrEP and treatment as prevention. That these men are not aware of PEP is particularly distressing considering that this tool has been available for gay men in Canada for over a decade.

The recruitment strategy also offers original contributions, particularly to critical social science perspectives on HIV in Canada, by focusing on HIV-negative gay men who are not all necessarily highly active sexual risk takers. Some of the men interviewed considered themselves to be at-risk even though they were abstaining from sex or were only practising safer sex. Those who were abstaining from sex are experiencing what I classified in chapter six as epidemiological serostatus uncertainty. They remain convinced that they are probabilistically more likely to contract HIV simply because they are gay men (or "MSM") and not because of any particular actualised sexual risk act *per se*. Or, they have had more direct experiences with serostatus uncertainty in the past, that is, an "HIV scare," which has permanently shaped their risk disposition. So while they may not be active risk takers in the present, they have still been very affected by serostatus uncertainty. In either case, this expanded view of social practices has allowed me to question the validity and generalizability of ruling forms of knowledge in the field and the governing practices that are based on this knowledge.

Adam (2005, 2006, 2011) has offered us exceptional insight into the world of gay men and risk management in Canada. However, many of his most influential ideas are built on reflecting closely on the experiences of HIV-positive gay men and men who bareback, often in spaces like bathhouses. While these perspectives are important to capture, they do not speak to the diversity of experiences of managing HIV risk among gay men. For example, this dissertation focused on social conflict between HIV-negative gay men as a result of condom breaks, HIV-negative men whose fears associated with oral sex were compounded as a result of immigration policy and HIV-negative men who were confronting social pressures to have more sex or engage in anal sex. These experiences are ignored if we only focus on analysing those those who bareback, who have lots of casual sex, or when we focus exclusively on the realties of HIV-positive men.

Finally, the data collection and data analysis process for this project drew on Interpretative Phenomenological Analysis (IPA), which has been used elsewhere to examine the experiences of gay men and HIV risk (Flowers et al., 1997). Yet, the use of case studies as an analytic tool represents a unique approach to IPA. The interplay between generating an explanatory framework based on a close analysis of the case studies and available research and theory about gay men and HIV risk helped me to produce the original insights on risk disposition that I shall now summarise.

(4) Risk Disposition: Risk Tolerance, Serostatus Uncertainty and Agency

In my review of social scientific research on gay men and HIV, I argued that a significant bulk of the established scholarship—including both mainstream and critical perspectives—has been interested in understanding motivations for sexual risk-taking. In particular, social scientists have inquired as to why gay men who are aware of HIV continue to have unprotected anal sex that may put them at-risk. Mainstream biomedical and public health research has correlated a host of factors such as anxiety, depression, life stress, age, ethno-racial background, income, promiscuity levels, viewing bareback porn, obesity, drug use, AIDS optimism and treatment optimism, with increased proclivities to bareback. Findings from these studies tend to demonstrate that gay men with more psychological vulnerabilities who are further socially marginalised and experiencing compounding life stressors are more likely to take sexual risks; though it often appears that sexual risk-taking cannot be so exclusively tied to any one particular risk factor such as anxiety, depression or low self-esteem. What is clear from this research, however, is that researchers tend to believe that there must be something wrong in a social actor's life that would lead him into having unprotected anal intercourse that would put him at-risk for HIV infection.

Meanwhile, critical scholars analysing sexual practice have challenged the notion that unprotected anal intercourse must always be considered to be a high risk sex act. By examining sexual practice, they have looked at a variety of contextual factors that allow gay men to still practice effective HIV prevention while engaging in unprotected anal sex. For instance, negotiated safety research has demonstrated how seroconcordant partners can have unprotected anal sex with each other and still reduce risk by using condoms with sexual partners outside of the primary relationship. Queer humanities scholars have also highlighted the political dimensions of barebacking, focussing on how this sex act can serve as a form of resistance against heteronormative/homonormative ideals and highlighting how sexual risk-taking and hedonism are integral to the development of queer male subject formation. In short, between risk factor research and critical perspectives on HIV, we have a fairly rich and complex literature about why gay men have condomless anal sex.

In order to offer new contributions to critical social science on HIV, I decided not to focus my analysis exclusively on why gay men have unprotected anal sex. Instead, following the precepts of risk and uncertainty studies outlined in chapter one, my goal was to determine the *diverse* ways that HIV-negative gay men have been affected by HIV risk management and how they have navigated various experiences of serostatus uncertainty over the course of their lives. Of course, sexual risk-taking is a part of this process, since a social actor usually has to take some sexual risk in order to be uncertain about his serostatus. However, the emphasis of my analysis was not on examining unprotected anal sex alone. Rather, my principal goal was to understand how HIV-negative gay men, regardless of their levels of risk-taking, have been coping with serostatus uncertainty during the transition to the biomedical era of HIV prevention. If, according to biomedical and public health expertise, some risk is attached to most sex acts between men (including activities like oral sex and protected anal intercourse), I felt it necessary to understand how social actors cope with the variable experiences of serostatus uncertainty that are inevitable among the sexually active.

Thus over the course of 33 interviews, I listened to HIV-negative gay men speak about their romantic and sexual lives, paying close attention to all those moments when serostatus uncertainty was a pertinent issue. This included discussions with men with histories of sexual risk-taking, moderate levels of sexual risk-taking and no levels of sexual risk-taking (abstinence). For this study, listening to men avoiding sexual relations was just as important as listening to men having a lot of higher risk sex. Indeed, through this analysis I demonstrated that some men struggle more with the residual risk associated with safer sex or lower risk sexual practices than with dealing with higher risk sexual practices where the risks are less ambiguous. For example, beyond unprotected anal intercourse, many participants struggle to make sense of the risks associated with oral sex even when the HIV-positive partner has an undetectable viral load.

Through this analysis, I argued that HIV-negative gay men have been greatly affected by experiences of serostatus uncertainty during the transition to the biomedical era of HIV prevention and that this significantly impacts their well-being. Even though these social actors have been successful at preventing HIV infection, the frequent psychological, social, physical and material challenges associated with continually negotiating HIV risk and managing serostatus uncertainty can greatly affect their level of contentment and quality of life. This has a significant impact on their longer-term physical, mental, emotional, spiritual and sexual health, as well as their sense of social connectedness. This is substantially different than arguing that poor mental health states may lead to increases in sexual risk-taking, as per risk factor research.

Rather, my focus has been on examining how the epistemic and social and political uncertainties as well as logistical challenges associated with HIV risk management can often lead to very trying experiences of serostatus uncertainty that can fuel anxiety, erode one's quality of life and lead to social conflict and isolation.

To make sense of the narratives of the research participants, I offered the idea of risk disposition, another key original contribution of this dissertation. This idea is laid out visually in Figure 6.1 offered in the conclusion to chapter six. Risk disposition refers to a social actor's unique and evolving relationship to HIV risk management, which is a product of his specific social location (at a specific time) and his lived experiences navigating the epidemic. Every gay man has his own story when it comes to HIV, his own risk disposition. Understanding this unique orientation helps us to understand how specific gay men are being affected by the epidemic, how they are engaging with available knowledge and services, and how they are interacting with each other as at-risk subjects. In other words, it informs us of how gay men implement agency and secure their well-being in the context of an epidemic that has failed to achieve a stabilising point.

In order to describe the risk disposition of a social actor, we can look to his practices of risk reflexivity and to his risk tolerance levels. With risk reflexivity we are examining how the social actor is making sense of the current HIV landscape and how his social location and social practices may be producing some serostatus uncertainty. With risk tolerance we are examining how a social actor evaluates his current level of serostatus uncertainty and whether he may wish to alter his health maintenance and sexual practices in the interest of reducing the anxiety associated with serostatus uncertainty. Experiential moments of serostatus uncertainty—what some term "HIV scares"—are thus key moments in HIV-negative men's lives where they engage in hyper levels of risk reflexivity and determine their risk tolerance.

From here, I argued that favourable social conditions for assessing and managing serostatus uncertainty encourage risk tolerance and unfavourable social conditions encourage risk aversion. Risk tolerance and risk aversion is a core feature of how HIV-negative gay men come to implement their agency in the face of great uncertainty and how they secure their well-being. By risk tolerance, I am referring specifically in this dissertation to a social actor's ability to manage serostatus uncertainty with comparative ease and not to a social actor's preference for having higher risk sex. By risk aversion, I am referring to a social actor's struggles managing experiences of serostatus uncertainty and not to a social actor’s distaste for having unprotected anal sex. Risk tolerant social actors can practise effective prevention and risk averse actors can take sexual risks. It’s their response to the experience of serostatus uncertainty that follows from their sex acts which differentiates them. Thus my focus is not just exclusively on HIV-negative gay men’s fears associated with seroconverting, but on their fears and struggles coping through moments of serostatus uncertainty. Some social actors find these at-risk moments to be more tolerable than others and the main goal of chapter six was to sociologically explain why this is the case.

I began this analysis by arguing that all HIV-negative gay men experience some degree of anxiety in relation to their serostatus, a fear that they lack the agential capacity to deal with future adverse events. Social conditions that produce feelings of anxiety, which increase a felt sense of powerlessness to address the unknown, lead to increased risk aversion. Meanwhile, social conditions that reduce anxiety by increasing a social actor’s sense of agency or control, thus fostering a felt sense of powerfulness, lead to risk tolerance. I then moved on to examine these social conditions.

The first issue I explored was time. Social actors tend to become more risk tolerant as they move throughout adulthood and experiences of serostatus uncertainty and HIV testing becomes somewhat more mundane, an unwelcome yet familiar experience. The second factor I explored was the difference between internal and external assessment. Risk tolerance is encouraged when a social actor assesses himself as being at-risk and risk aversion is produced when a social actor is prompted by external forces to consider himself to be at-risk. The more agential capacity a social actor has over risk assessment and risk management practices, the more likely he will be tolerant to serostatus uncertainty. The third factor affecting risk tolerance is sexual health literacy. More knowledge can help a social actor feel in control over his risk management practices and his serostatus uncertainty. However, increased knowledge does not always lead to increased levels of risk tolerance (especially for the very anxious). Having access to up-to-date prevention knowledge *prior* to situations where one feels that they are at-risk, can play a significant role in how one experiences a moment of serostatus uncertainty. Social actors currently in the throes of panic are more likely to aggrandise levels of serostatus uncertainty and be more sceptical of newer prevention knowledge like undetectable viral load.

I then paid attention to social actor’s experiences navigating health services and governmental bureaucracy. The more challenging or stressful it is for a social actor to navigate health services, the more risk averse he will tend to be. Many HIV-negative gay men have routines in place to get tested for HIV and can easily access sexual health services in their cities. However, when HIV-negative gay men move to new cities or provinces, it can be difficult to immediately establish the best way to get HIV and STI services. Those seeking PEP prescriptions may also have difficulty, principally due to the exorbitant costs in some regions or because of policy loopholes. The side-effects associated with PEP prescriptions offered during the transition to the biomedical era of HIV prevention were often so severe that they increased risk aversion (and serophobia) for many social actors, even if only temporarily. And finally, I examined how navigating governmental institutions or policies can also affect risk tolerance levels. In particular, those men applying for permanent residency status tend to display more risk aversion since they fear that an HIV-positive diagnosis will threaten their citizenship process. This examination of the logistical and institutional components of HIV risk management represents a significant original contribution to critical social science perspectives on HIV in Canada. It moves us away from examining gay men principally through their sexual behaviour, to examine how a broad range of lived experiences impacts a social actor's relationship to HIV risk management—that is, his risk disposition.

I then moved on to examine the role of sexual practice and its relationship to establishing the risk disposition of a social actor. Sexual experiences greatly affect how all gay men orient themselves to HIV risk management, with negative sexual experiences often cultivating strong risk aversion. The moral dimensions of gay male sexual practice often serve as the primary lens by which those at-risk come to make sense of serostatus uncertainty and HIV prevention practices, including the benefits of newer biomedical technologies. There is no sexual or intimate relationship between gay men—even between HIV-negative men—that is immune from having to address HIV risk in some capacity. Fundamentally, certainty over one's sexual choices makes serostatus uncertainty more tolerable. Uncertainty over one's sexual choices makes serostatus uncertainty less tolerable.

I argued that risk tolerance is associated with increased levels of rapport, intimacy and trust between sexual partners—often when these elements are removed from a sexual situation, the remaining degree of serostatus uncertainty tends to be moralised and experienced more negatively, thus leading to risk aversion. Relatedly, risk tolerance tends to be associated with increased levels of sexual confidence. The more self-assured an HIV-negative gay man is that his romantic and sexual life is measuring up to prevailing cultural scripts on gay male sexuality, the more comfortable he will be with the serostatus uncertainty associated with his sexual practices. However, the more ambivalent he is about his sexual practices and sexual identity, the more likely he will be averse to the serostatus uncertainty associated with the sex he is having. A significant original contribution of this dissertation is a reflection on how young gay men feel conflicting social pressures to either be more promiscuous or more monogamous. Some of these social pressures also extend to having more anal sex or being more comfortable with serovariant sexual relations. The sexual and prevention decisions social actors make are not just products of their personal preferences, but represent confrontations with competing cultural scripts.

And finally, a social actor's orientation to various fractions of the gay male community also plays a role in shaping his risk disposition vis-à-vis his tolerance to serostatus uncertainty. I argued that social actors more affiliated with fractions of the gay male community where sexual risk-taking is considered the norm can moralise serostatus uncertainty more positively (regardless of sexual risks taken) and thus develop risk tolerance. Put differently, among certain groups of gay men, the experience of serostatus uncertainty is considered to be a more mundane part of gay male life. Risk aversion tends to be produced when social actors are more likely to consider their ties to non-gay communities and cultures where the experience of serostatus uncertainty is not the norm or is not as openly acknowledged. This analysis supports the need to investigate social actors intersectionally and not just as gay men who are members of a homogenous gay male community (see too, Holt 2011). The unique social position of a social actor not only influences his propensity for sexual risk-taking (as per risk factor research). It fundamentally impacts his perception of risk and his moralisation of serostatus uncertainty. Thus we need to recognize that the moral compass guiding a social actor's sexual practices is comprised of multiple intersecting community norms and values systems (religion, class, race, sexuality) which may contradict each other. Gay men are not just *gay* men, lovers and hookups. They are also brothers and sons that are often just as accountable to their biological families as to a gay or queer male sexual politic.

To summarise, experiencing serostatus uncertainty is an inevitable part of life for sexually active HIV-negative gay men. Even when risks are low, it is often necessary to get tested to confirm that one indeed remains HIV-negative. And at a minimum, all HIV-negative gay men are governed, through policies such as the blood donation ban, to think of themselves as epidemiologically being at-risk—group membership alone produces serostatus uncertainty. At first getting tested for HIV can be a terrifying experience, but over the course of time it becomes somewhat more familiar. A social actor who has an established testing routine and who can easily access health services, who makes the decision to get tested on his own accord, who is learned about HIV prevention, who is confident in his sexuality (his skills, his body, his identity, his relationships, etc.) and whose peer group shares similar experiences with serostatus uncertainty, is likely to be more comfortable periodically not knowing for certain whether he is HIV-negative. He may have unprotected anal intercourse, he may only have protected anal intercourse, he may only have oral sex or he may only have sex with people he believes to be HIV-negative. Regardless of the prevention practices he puts in place, this social actor has reached a level of acceptance and comfort living with some degree of serostatus uncertainty. He will still experience some anxiety related to serostatus uncertainty, but all of these factors come together to increase his sense of agential capacity and to make the management of this anxiety easier.

On the reverse end of the spectrum, an HIV-negative gay man who has not established a testing routine, who has difficulties accessing services (due to limited finances, no family physician, difficult health service office hours, lack of a provincial health card, etc.), who has less awareness about HIV prevention issues, who tends to learn the most when he is deep within an "HIV scare," who is still unsure about his sexuality and place within the gay community, and who feels cheated somehow by his sexual partners, will be more likely to find experiences of serostatus uncertainty unbearable. This is especially the case for the social actor who has to go on PEP or who is applying for permanent residency status. This social actor may or may not take heightened sexual risks. Regardless of whether or not he uses condoms, has anal sex or sticks to oral sex, he will struggle with the associated levels of serostatus uncertainty. All of these factors have come to make him feel less in control of his life, thus increasing anxiety. In the throes of panic and a deep existential crisis, he will tend to moralise his sexual behaviour negatively, regardless of whether or not he took biomedically significant risks. However, as he comes to better understand his risk aversion, he may adjust his health maintenance and sexual practices accordingly in order to avoid anxious periods of serostatus uncertainty in the future. For example, he may choose to not have sex for a period of time when he simply cannot think about being at-risk for HIV. Thus, while multiple factors may have worked together to erode his sense of agency and increase a sense of powerlessness, by understanding his risk aversion and operating from his dislike of serostatus uncertainty, he may enact his agency, eventually obtaining a sense of control over his health and sexuality and securing his overall well-being.

This is a key argument of the dissertation. One's comfort with serostatus uncertainty, whether an individual is risk tolerant or risk averse, plays a role in how this social actor enacts his agency, how he responds to HIV prevention matters and the uncertainties associated with the field. For example, men who recognised that they were risk averse determined that they were not comfortable with serovariant sexual relations, regardless of new biomedical information on undetectability. They then went on to base their opinions about the ethics of disclosure and HIV criminalisation from their particular risk dispositions. I shall now review my original findings on these ethico-political dimensions.

(5) The Social and Ethico-Political Dimensions of HIV Prevention and Critiques of Risk Factor Hypotheses

The next major original contribution of this dissertation is a sustained reflection on the social and ethico-political dimensions of biomedical prevention technologies, serosorting and HIV status disclosure during the transition to the biomedical era of HIV prevention. Following the uncertainty triad, the uncertainties associated with knowledge production and governing practices generated by the HIV prevention field end up funnelling into complex ethico-political dilemmas for everyday social actors. HIV-negative gay men must not only think about how their sexual practices may be putting themselves and their sexual partners at-risk. They must also consider the moral and political effects of their sexual choices under conditions of uncertainty. In particular, HIV-negative gay men have to routinely consider the ethics of serosorting and how selecting only other HIV-negative men to have sex with reproduces HIV stigma.

I referred to this process as the *HIV stigma cycle*, another original contribution of this dissertation. HIV-negative gay men fear that an HIV-positive diagnosis will mean a future of sexual and romantic rejection. In order to avoid social isolation in the future, some of these men may serosort as a way to manage serostatus uncertainty. However, by serosorting, they only reinforce their own beliefs that seroconverting would mean facing a life of sexual rejection, which only further justifies their preference for serosorting. Men who have strong preferences for serosorting are aware that their actions are discriminatory and some wish that they could overcome their fears of serovariant sex. Yet, these risk averse men are caught in the HIV stigma cycle and simply find the serostatus uncertainty associated with serovariant sex, regardless of any preventative measure taken, to be too anxiety provoking. Serosorting is a fundamental component of these social actors' risk disposition.

Like most things related to HIV prevention, in the absence of a stabilising point the situation is even more complex. As a result of emerging research on undetectable viral load, the ethico-political dimensions of serosorting have become even more contentious during the transition to the biomedical era of HIV prevention. Indeed, this contention, I've argued, is one of the defining characteristics of this period of the epidemic. In chapter four, I reviewed examples of governing practices, community education and activist art that strongly critique serosorting, arguing that it reproduces HIV stigma and reinforces viral apartheid (social hierarchies between negative and positive men). Critics of serosorting also argue that this prevention practice is unnecessary and ultimately ineffective, since condoms are highly effective, a managed viral load can reduce risk and it is actually those who are undiagnosed (at-risk HIV-negative identified men) that pose the most risk to others and not HIV-positive identified men (on medication). Of course, this opinion belies the many epistemic uncertainties associated with biomedical research on undetectable viral load and contradicts some of the official communication about undetectable viral load directed to gay men and sexual health service providers during the transition to the biomedical era of HIV prevention. It also denies the epidemiological research which frequently posits *protected* anal sex as a key source of new infections due to condom slippage and breakage and oral sex as posing much more than just a marginal risk at the population level.

Moreover, during the transition to the biomedical era of HIV prevention, the criminalisation of HIV non-disclosure became a more heated debated in Canada due to increased convictions and charges (though mostly against heterosexual men and women). Two Supreme Court decisions now make HIV status disclosure a legal requirement in all instances of serovariant sex unless condoms are used during (vaginal) intercourse and the HIV-positive partner has an undetectable viral load. This legal policy thus contradicts the activist argument that in the context of serovariant sexual relations, risks are negligible when an HIV-positive person has achieved an undetectable viral load (though biomedical science had yet to unequivocally confirm this fact in the context of homosexual sexual relations). Consequently, the criminalisation of non-disclosure started a heated debate in the HIV prevention field over the necessity of HIV status disclosure in the third decade of the epidemic.

Thus on the one hand, during the transition to the biomedical era of HIV prevention, HIV-negative gay men have been warned about the limits of relying on undetectable viral load information, the fallibility of condoms, the dangers of oral sex and the risks associated with serovariant sex. On the other hand, HIV-negative gay men with a preference for serosorting have had their moral and political integrity questioned, and sometimes rather publicly and harshly, by community organisations and activists. The ethico-political tensions associated with serosorting are not new (Flower, 2001). However, during the transition to the biomedical era of HIV prevention in Canada, the simultaneous influx of biomedical research on treatment as prevention and a discrediting of treatment as prevention based on the epistemic uncertainty associated with the available research has created a distinctively challenging landscape to navigate, creating contradictory versions of what qualifies as responsible biological gay male citizenship.

Indeed, following Rose (2005, 2007) and Flowers (2001), the more we have learned about the body and risks to its integrity, the more opportunities and tools we have at our disposable to remain healthy. Yet, with the advancement of this uncertain knowledge, more ethical challenges emerge as to how best to utilise this knowledge in everyday life. How *exactly* are we supposed to make sense of the heightened risks associated with the undiagnosed, the potential for viral blips, drug resistant strains of HIV, and HIV-positive men who may not always be adherent to their treatment schedules, in ways that are compatible with preventing HIV and that are fair to those living with the virus? It is one thing to accept the risk reduction associated with undetectable viral load hypothetically and another to actually apply it to one's sexual practices. It is one thing to consider serosorting morally dubious at the abstract level and another to actually apply this opinion in everyday life. It is one thing to be critical of the criminalisation of HIV non-disclosure at the broader biopolitical level and another to dismiss the fact that, given the uncertainty of the evidence, one may be inclined to believe that HIV status disclosure may be the ethical (if not legal) thing to do. In short, for HIV-negative gay men, being a responsible biological citizen during the transition to the biomedical era of HIV prevention has not been easy. Under conditions of uncertainty, it could seem almost impossible.

Many of the HIV-negative gay men interviewed for this project struggle to make sense of all of these conflicting issues. Some went as far as to argue that they feel social pressure to accept the risk reduction associated with undetectable viral load and to stop serosorting because of its political limitations. Emotional reactions to serovariant sex such as anxiety are considered problematic as HIV-negative gay men are expected to "rationally" compute new risk knowledge and make their sexual choices in the interest of ending HIV related discrimination. An inability to accept this new knowledge and to find serovariant sexual relations safe, can thus lead to feelings of guilt and shame. Nonetheless, risk averse HIV-negative gay men tend to rely strongly on serosorting and refuse to alter their stance on purely ethico-political grounds. Further, no one interviewed for this study relies on the criminalisation of HIV non-disclosure to do their serosorting for them, or considered the criminalisation of HIV non-disclosure to be a clear-cut issue. And despite the availability of numerous risk factor studies on biomedical optimism, no one interviewed is relying on undetectable viral load information to justify having unprotected anal intercourse.

Indeed, in chapter seven I also offered critiques against the validity and generalizability of key risk factor hypotheses, ruling forms of HIV prevention knowledge. I argued that risk factor research that focuses exclusively on the relationship between treatment optimism and barebacking can flatten out the social, ignoring the diverse ways in which undetectable viral load is affecting HIV-negative gay men and influencing their well-being. There are currents of AIDS optimism and treatment optimism among gay men. Some of the men interviewed in this study do view HIV as a more chronic manageable condition (AIDS optimism) and others do believe in the risk reduction potential associated with undetectable viral load (treatment optimism). However, no participant is having unprotected anal sex as a result of these two beliefs. Those who do incorporate undetectable viral load information into their prevention practice have become more comfortable with serovariant sex only if condoms are used—and even then, many of these men appear to be quite ambivalent about the risks associated with serovariant sex. Moreover, men with more sceptical beliefs about the prevention benefits of HIV treatments and those who lacked an operational understanding of the relationship between treatment and prevention tended to be more predominant in the research sample than those with optimistic beliefs. Thus one of the principle contributions of this dissertation to critical social science on HIV is the finding that HIV-negative gay men are far from uncritically adopting information on undetectability into their sexual practice and that many, particularly those who serosort, are actively resisting incorporating this knowledge into their sexual practice.

The analysis presented in chapter seven clearly demonstrates how the HIV prevention field has failed to achieve a stabilising point in its third decade, by exposing the effects of a proliferation of epistemic and social and political uncertainties. At the everyday level, these translate into experiential uncertainty, into difficult moments of serostatus uncertainty. Social actors are being asked to adjust their social practices in accordance with emerging knowledge, but the parameters of such adjustments remain unclear and are loaded with ethical considerations. Meanwhile, researchers and community experts continually reflect on the social practices of gay men, particularly focusing on proclivities to have unprotected anal sex, in order to make sense of and contextualise emerging biomedical and epidemiological findings. However, such a narrow view obstructs key dimensions of social life, obfuscating how the field itself is generating conflicting prevention messages for young gay men, thus producing conditions of uncertainty.

Given this tremendous proliferation of uncertainty, everyday social actors must do their best to align their sexual practices with their tolerance to serostatus uncertainty. They do so by reflecting on their own risk disposition, by acknowledging the benefits of biomedical technologies through their own unique social locations and lived experiences. To be sure, new biomedical technologies have the capacity to drastically shift the risk disposition of a social actor over time. However, evidence from this study demonstrates that many young HIV-negative gay men are far less likely to *rapidly* shift their relationship to HIV risk management because of new biomedical information, rather than interpret new information through their existing relationship to HIV. A social actor’s risk disposition plays a defining role in how he will respond to new information. However, as his risk disposition changes over time through his lived experiences, so too will his reactions to emerging information.

In short, HIV prevention is not just a health issue affecting individuals, it is a social and ethico-political issue affecting communities of gay men. However, sometimes an individual social actor’s interests are at odds with those of his community. This project has demonstrated that many HIV-negative gay men do not want to stigmatise HIV any further and very much wish to apply the most accurate and up-to-date pieces of prevention knowledge to their sexual practices. Most of the HIV-negative gay men interviewed think HIV disclosure is a moral obligation, even if they are very critical of its legal implications. Yet, for risk averse social actors who struggle to manage through experiences of serostatus uncertainty, the conflicting messages about the safety associated with serovariant sex (or their lack of awareness over undetectability) makes it exceedingly difficult for them to prioritize HIV stigma reduction over their desire to reduce risk in a way which feels the most intuitive to them—not serosorting is counterintuitive to their risk disposition. For many of these HIV-negative gay men, serovariant sexual relations have just been positioned as being high risk for too long. Even though they know that there are still risks when they are serosorting, selecting to have sex only with men who identify as HIV-negative provides them a degree of solace that they can hold onto during the window period. The actual level of risk reduction may be superficial, but the consolation they feel when they believe that they have effectively serosorted, is not. While emerging prevention knowledge about undetectability is challenging this perception, it will most likely take many more years and a great deal of official state sponsored education and outreach work before most risk averse gay men are convinced about the prevention benefits of undetectability.

HIV and the Uncertain Future

Fortunately, in Canada we have moved beyond the crisis years of this epidemic. However, the challenges of addressing HIV risk management issues and serostatus uncertainty in everyday life remain substantial for young HIV-negative gay men. The central thesis of this dissertation is that during the transition to the biomedical era of HIV prevention, the HIV prevention field has failed to achieve a stabilising point and consequently young HIV-negative gay men have consistently faced great uncertainty in relation to HIV prevention practices. These social actors are continually governed and affected by serostatus uncertainty, by experiences of being at-risk for HIV that greatly impact their general well-being and how they come to enact their agency in response to this socially convoluted and politically volatile epidemic.

In my review of the HIV prevention landscape, I have critically reflected on how scientists, institutions and community advocates have cultivated doubt in order to govern gay men as at-risk subjects, as social actors who are meant to consistently self-regulate in response to the threat of HIV in a context where HIV prevention knowledge is shifting rapidly, contradictorily and controversially. While this dynamic has been the case since the very beginning of the HIV epidemic, the previous chapters have outlined the nuances of the epistemic and social and political uncertainties that make up the HIV prevention field in its third decade and how these often translate into very difficult moments of experiential serostatus uncertainty. In short, I explored the everyday burdens experienced by HIV-negative gay men in Canada as they aim to manage the threat of HIV under conditions of uncertainty.

Thus behind the epidemiological goal of reducing HIV transmission rates, there are stories of gay men who, though successful at preventing HIV, have struggled regularly and sometimes considerably, to remain HIV-negative. These stories have been the centre of my attention. HIV risk remains a consistent, lingering presence in the lives of young HIV-negative gay men that greatly affects their well-being, whether the probability of infection is high or infinitesimal. Indeed, similar to other scholars (Girard, 2013), I have demonstrated that it isn't necessarily the management of sizeable amounts of risk that can cause great distress, but the near constant negotiation of the residual risk associated with safer sex or lower risk sexual practices that can burden social actors trying their best to prevent HIV and live sexually fulfilling lives.

In the preceding chapters, I have demonstrated how social conditions can make the experience of serostatus uncertainty easier or more difficult to manage, aggrandising or alleviating anxiety and consequently affecting the well-being of gay men. Reflecting on these experiences, on how challenging or manageable it is to navigate moments of being at-risk, comes to play a prodigious role in how HIV-negative gay men make sense of HIV prevention and their sexual practices going forward. It comes to determine, at a fundamental level, their risk disposition. If a social actor has struggled greatly with experiences of serostatus uncertainty, he is likely to become less tolerant to serostatus uncertainty and his future sexual practices and opinions about the social and ethical-political dimensions of HIV prevention will reflect his apprehension and anxiety. If a social actor has been able to manage experiences of being at-risk with relative ease, he will likely become more risk tolerant over time and his future sexual practices and opinions about the ethico-political debates surrounding HIV (such as serostatus disclosure) will reflect his comfort dealing with the residual levels of risk associated with safer sex practices. In short, every social actor will make his HIV risk management choices and develop opinions about gay male sexual conduct based on his sexual desires, his knowledge of HIV prevention and his prior experiences managing serostatus uncertainty. Every social actor has his own risk disposition, his own story about HIV.

As a work of critical social science on HIV, in this dissertation I have also taken the experiences of HIV-negative gay men to question ruling forms of knowledge in the HIV prevention field, namely mainstream biomedical and public health research. I have underscored how the HIV prevention field continually produces and cultivates uncertainty, focusing its attention on specific networks of gay men to generate new knowledge and often flattening out the social nuances of HIV prevention practices with its continued emphasis on understanding individual rationales for unprotected anal intercourse. During the transition to the biomedical era of HIV prevention, the issue is not just that the HIV prevention field has not always been in consensus about what constitutes effective HIV prevention. Rather, this lack of consensus has turned itself into a barrage of mixed messaging that makes it rather difficult to determine how best to proceed to avoid not just HIV infection, but also the experience of serostatus uncertainty. At a very essential level, it makes it fairly difficult to negotiate HIV risk with sexual partners of both unknown and HIV-positive statuses. HIV-negative men are simultaneously supposed to consider the ethico-political limitations of serosorting and the additional risks associated with undiagnosed men, while also being sceptical of the risk reduction benefits associated with undetectable viral load. We are, as politically minded community members, supposed to be critical of the criminalisation of HIV non-disclosure, while keeping in mind that condoms break and undetectability is not a sure thing. We are, more and more, to believe that HIV is a chronic manageable condition, while also keeping in mind the true severity and potentially debilitating nature of the disease. We are supposed to rely on risk calculation charts that tell us that our sexual choices have put us at low risk, while also recognising that serostatus uncertainty now makes us a potentially high source of risk to others. The HIV prevention field—its research, education, advocacy and services—is simply full of paradoxes.

Nonetheless, the goal of this dissertation has not been to completely undermine the valuable contributions of biomedical and public health expertise, or to blame the HIV prevention field for ignoring or insufficiently supporting HIV-negative gay men, or for routinely creating conditions that can actually promote sexual risk-taking, as Adam (2005, 2006) has argued. For instance, I disagree with Adam that mainstream prevention education that implicitly or explicitly promotes partner reduction will lead to riskier sex among HIV-negative gay men who think monogamy is tantamount to safety. Some of the men interviewed for this project were monogamous because they valued monogamy and were well aware of the risks associated with infidelity and the necessity of ensuring the serostatus of HIV-negative partners before engaging in unprotected anal sex. We cannot blame public health for instances where gay men seroconvert because their partners cheated. And we also cannot deny that (serial) monogamy can be an effective risk reduction practice if serostatuses have been verified. Gay men have agency and the capacity for critical reflexivity, which means that, regardless of the limitations of biomedical and public health research, education and policy, they are capable of making their own risk management decisions and being reflexive when it comes to emerging prevention knowledge. While we can be critical of the HIV prevention field, blaming it for producing instances of risk minimises the agency of social actors and obfuscates the terrific work the field has done to foster the health and wellness of gay men. Public health initiatives in Canada have supported the implementation of the rapid HIV test, have funded nuanced projects like the HIV Stigma campaign and are currently working hard to increase access to PrEP. The field of HIV research and services is imperfect, but it is not the exclusive antagonist in this tale—uncertainty is and that is a hard beast to pin down.

While I have questioned some of the assumptions and methods behind epidemiological reportage and risk factor research, these ruling forms of research have also produced valuable insights, such as syndemic research which argues that HIV will remain a problem among gay men unless we address the many intersecting forms of oppression they face in a homophobic, racist and classist society. HIV prevention is a challenging *social and political* problem and it has been my goal to understand these challenges in a nuanced fashion, rather than to blame one person, group or institution. In a similar vein as Epstein (1996), this project has neither been interested in reproaching public health expertise or in simply cheerleading critical and activist voices as having the absolute moral high ground. Indeed, while many of the Canadian critical social scientists that I have been citing throughout this dissertation are very critical of the mainstream HIV prevention field and the epistemological superiority of evidence-based medicine, they also tend to have very close professional ties with the established HIV service industry and continually use evidence-based medicine to support their scholarly claims. HIV service providers, researchers (both critical and mainstream) and activists have all done their best to support those infected and affected by HIV and have all produced a series of contradictory statements and highly polemical debates that make navigating HIV risk in everyday life challenging. Multiple knowledge production and governing practices are responsible for producing the conditions of uncertainty that I have been investigating.

However, in the above chapters, I have certainly questioned the limitations of risk factor research. Understanding motivations for risk-taking may help researchers get conference presentations and scholarly publications, but I agree with Adam (2011) that this work often has limited use for gay men in their everyday lives. Does it really matter, at a pragmatic level, if there is a correlation between viewing bareback porn and having bareback sex in real life? Do we need yet another study to understand why gay men have unprotected anal sex or could we just use these resources to develop better services and education for gay men? Research that aims to link negative mental health outcomes, addiction, poor body image and the social determinants of health with increased sexual risk-taking is arguably respectable. Yet, regardless of their associations with HIV risk, should we not just be developing programs, services and education that support gay men's health anyways? Why do we appear to care more about a particular gay male health issue when it has a link to HIV risk? Can we begin to imagine a world where we no longer view the health and well-being of gay men primarily through an HIV risk lens? Where we offer services and programs to improve their well-being because that is morally right and not because failing to do so threatens population health with increased HIV incidence?

Hypotheses such as AIDS optimism and treatment optimism have been dissected thoroughly in the preceding pages. But the issue isn't necessarily that these are abominable forms of research—the assumptions behind these hypotheses are actually quite logical. Nonetheless, these epidemiological theories, which persist stubbornly despite insufficient and conflicting evidence, obscure the fact that many young HIV-negative gay men in Canada are very confused about what undetectable viral load is and are thus hardly using it to justify having unprotected anal sex. But more importantly, the key issue here is that understanding this epidemic requires us to grapple with complexity and the messy nature of everyday life, which cannot be conveniently isolated to epidemiological risk factors. Certainly, a crucial element of successfully securing project funding requires scientists to demonstrate how their findings are going to help us to better understand sexual risk-taking and improve incidence rates. However, despite the best wishes of public health researchers, real life isn't so simple. In this dissertation, I have intentionally woven together a series of overlapping issues and dynamics, which make it difficult to offer precise recommendations for HIV prevention education and policy.

Nevertheless, I firmly believe that this analysis offers a more robust and thus more accurate depiction of what it is like to be a young sexually active HIV-negative gay man during the transition to the biomedical era of HIV prevention.

Hopefully, this analysis can help others think about how we might better address pressing issues in this epidemic, most notably how to clearly communicate the risk reduction associated with undetectable viral load. From this study, I argue that knowing about undetectable viral load doesn't automatically lead a social actor into having unprotected anal intercourse, but it can help to reduce anxiety and HIV stigma, greatly benefiting the well-being of both HIV-negative and HIV-positive men. At the same time, the situation proves complicated since the biomedical evidence on this issue has not been incredibly convincing among gay men, at least during the transition to the biomedical era of HIV prevention. Now that we know more about the risk reduction of undetectable viral load and gay men, we are likely to see more progressive changes in our education messaging—or so I hope.

However, hindsight is, to utilise a well-worn cliché, 20/20. Activists and critical voices who have critiqued HIV-negative gay men for serosorting and for not understanding the benefits of undetectable viral load, may wish to reflect on the fairness of their criticisms and how they may be advancing social pressures to be "politically correct" that may alienate some HIV-negative gay men. Such discourse may ultimately foster HIV stigma by generating social conflict between negative and positive men. When HIV-positive gay men do not disclose their HIV statuses prior to sexual activity or when they harshly criticise HIV-negative men for serosorting, they do jeopardize establishing rapport and trust, which are necessary for social actors to become comfortable with the idea of serovariant sexual relations. A social actor's decision to serosort and a social expectation of HIV status disclosure (and possible support for the criminalisation of HIV non-disclosure) have been logical, even if not politically preferable, options among HIV-negative gay men given the uncertainty associated with the risk reduction related to undetectable viral load. It is not fair to expect HIV-negative gay men to disregard these uncertainties in the pursuit of broader social and political goals and to judge their preferences for serosorting as completely morally and biomedically dubious. Nor do we gain any social and political advantage by blaming at-risk undiagnosed men for fuelling the epidemic—recasting blame is still placing blame.

To be sure, this is not an argument in favour of encouraging serosorting practices among HIV-negative gay men. Nor it is an attempt to place the entire burden back on HIV-positive men's shoulders—negative men are undoubtedly responsible for making sense of new information on HIV prevention and for minimising HIV related stigma and discrimination. However, it is a reminder that the issue of serosorting is rather complicated both in terms of its actual effectiveness as a prevention technique and its social and political dimensions in fostering HIV stigma. As we move into an era with increased knowledge about risks associated with serovariant sex, especially due to increased accessibility to PrEP, we will likely see the necessity of serosorting be challenged more rigorously. That said, this dissertation has demonstrated that social actors do not abandon their preference for serosorting just because of new biomedical information and consequently much work will have to be done to communicate the safety of serovariant sexual relations in the context of new biomedical technologies such as undetectable viral load and PrEP. If we want to change these men's opinions about biomedical prevention, we need to begin by recognising that their current risk dispositions may not easily accept such changes. Biomedical prevention isn't just offering new opportunities. It is fundamentally asking gay men to completely alter their relationship to HIV risk management. We need to respect the enormity of this shift in the lives of individual social actors, rather than criticising them for failing to adapt rapidly enough.

This dissertation's findings can also help us to think more critically about methods and recruitment strategies for different at-risk populations, ensuring that we do not always tap into the same epistemic networks repeatedly, re-creating the notion that gay men are all highly informed scientific experts with promiscuous sexual histories. While many of those who participated in this study were quite knowledgeable about HIV matters, quite a few lacked substantial pieces of information (such as information on undetectable viral load and PEP), which signifies that HIV education messaging has not been as successful in Canada in reaching the gay male population less connected to the HIV prevention field (let alone populations not considered to be high risk). In part, this reflects the epistemic limitations of CBR, or at least a CBR frame that only utilises established health service centres to produce new knowledge. There is no need for researchers to abandon CBR as a methodology—it's an incredibly innovative and powerful research tool. However, it is necessary that we think more critically about what actually constitutes community—who gets to speak for community, who sees themselves as being a part of community and what the notion of community may be obscuring. Indeed, we need to critically examine how a focus on the established epistemic networks that we believe to signify our at-risk communities may limit the scope of our investigations and our ability to sufficiently address the needs of those at-risk. In short, we should continue to use CBR. However, we should do so with the intention of, in the language of IE, enlarging the view of social, in order to develop innovative knowledge that doesn't just reaffirm what we know, or what we want to know.

The above project can also hopefully help us to think about how to improve health care access and services for gay men. For instance, is it fair, or even good public health policy, that in some regions of Canada, PEP prescriptions remain so financially inaccessible for those without health insurance (which are more likely to be the young and unemployed, the most vulnerable to HIV risk)? Should it be that difficult to secure HIV testing and counselling in major cities in Canada? Could there be prevention advantages to offering viral load tests to at-risk gay men and not just antibody tests with their long window period? Could it be advantageous to offer more accessible counselling and mental health services to gay men (not just related to HIV and sexual health issues)? Can we consider how to adjust blood donation policy, the immigration process and the criminalisation of HIV non-disclosure in ways that reduce risk and that are also more socially and politically sound? We may also use the above findings to critically reflect on the nuances of sexual consent and sexual confidence levels among gay men, and how research and HIV education tends to reproduce the notion that all gay men are hyper-sexualised beings, when this is not always the case.

But most importantly, this dissertation's finding can allow us to think about breaking down the secrecy and stigma attached to being at-risk and recognising that constantly having to consider serostatus uncertainty can greatly reduce the well-being of social actors. HIV/AIDS may no longer register as headline news in Canada, but for many gay men, HIV is a dominating presence. The less we pay attention to HIV as a society, the more we isolate those who are at-risk and who are living with the virus, and the more we stigmatise these men and women for apparently not being responsible enough to practise good prevention. However, in reality, HIV prevention can be hard and people can struggle. The more we accept that this remains a situation *today* and not just in the early periods of the epidemic, the more we combat the social isolation, pacify anxiety, increase dialogue and help those in need.

I situated this dissertation's findings within the transition to the biomedical era of HIV prevention and argued that very recent research developments and policy changes around undetectable viral load and PrEP are resulting in a paradigm shift in the field. We certainly have a lot to be excited about. If PrEP can be made more accessible in Canada, in the following years we may witness significant drops in HIV incidence among gay men. Nevertheless, PrEP will always remain a partial solution, quite significantly because it hasn't been proven to be as effective among women. Among gay men, however, the biggest issue is that PrEP will only make sense as a risk management strategy for those who are sexually active enough or "at-risk enough" to warrant taking medication daily for prevention purposes, especially when considering longer-term side effects and costs. Once again, new biomedical technologies create new ethical dilemmas, in this case, determining how much risk warrants a PrEP prescription. Moreover, PrEP does not eliminate the experience of serostatus uncertainty. Though it minimises risks substantially, men on PrEP must still get tested routinely. There will always be additional social and ethical complexities to confront like negotiating condom use and the disclosure of HIV-positive status, as well as other health concerns such as the spread of antibiotic resistant strains of gonorrhea, an issue that should be of great concern to us. While none of these critiques should eliminate the mounting excitement over PrEP, it is necessary that we remind ourselves that PrEP is neither a cure nor a vaccine. It is certainly a beneficial option for very sexually active HIV-negative gay men (particularly those who do not like or who have difficulty using condoms) and for pharmaceutical companies who can sell more medication. It is not, however, the end of the epidemic. Without a cure or vaccine, HIV risk will remain a pressing concern affecting the well-being of gay men. Despite all of our great advancements until this point, including PrEP, sexually active HIV-negative men will still experience moments of serostatus uncertainty.

In short, the HIV epidemic is not over. We need a cure. And it is only until we have a cure or vaccine that we can eliminate the suffering and social conflicts caused by this epidemic. While this point may seem glaringly obvious, it is also easy to lose sight of with our mounting excitement over new biomedical technologies such as undetectable viral load and PrEP. We should not, however, become complacent. We have made significant progress within this epidemic and gay men in Canada have a lot, comparatively speaking, to be thankful for, particularly in terms of available sexual health services. Yet, the stress of dealing with serostatus uncertainty and the burdens of prevention have a multiplier affect on the well-being of at-risk social actors. This is a condition of uncertainty that will persist until HIV remains a thing of history.

Thus I end this dissertation where I started—with uncertainty. While we have every reason to be optimistic about the future of this epidemic, we simply do not know exactly what the next thirty years will look like. Better treatments? Additional convincing scientific findings about the risk reduction of undetectable viral load associated with homosexual sex? Or more research questioning the strength of this relationship? More treatment resistant strains of HIV? Increased or lower HIV incidence rates? A cure? A vaccine? The end of the epidemic? We face an uncertain future.

Uncertainty is indeed a powerful force. It is also unavoidable. It is a product of all scientific inquiry and a fundamental feature of everyday life. Within our contemporary risk society we use risk to assign probabilities to uncertain events so that we can attempt to control the unknown. We alter our institutions, develop research, education, policies and advocacy tools to help everyday social actors make sense of potential threats to their health and well-being. Through risk we turn social actors into at-risk subjects, into biological citizens who are expected to govern their conduct so that they may be healthy and pose minimal risks to their neighbours. Yet, for all of our combined efforts, we can never do away with uncertainty. There is always room for doubt, speculation and ambiguity. And consequently, there is always room to moralise and politicise how people are responding to the unknown. We tend to want to assign fault for all the pain inflicted by uncertainty on a singular source.

Yet, even if we critique the actions of all gay men, all HIV research paradigms, all HIV social scientists, all HIV activists, all HIV bureaucrats and all HIV relevant policies, all we will gain is a whole lot of critique, but no less uncertainty. Critique is valuable, but it doesn't vanquish the eminence of the unknown. Critique does not console the young man who is sitting, somewhere in Canada right now, in a medical office, waiting for his HIV results. Critique does not offer relief to the man who is currently feeling crushing guilt for serosorting or the man who is severely confused about whether or not a blowjob is safe and whether or not his new boyfriend will break up with him if he doesn't perform sexually soon. It doesn't change the course of a night that has been ruined by a condom break. It offers no comfort to the man that just broke up with his HIV-positive boyfriend because he could no longer bear the fear that he will seroconvert. Critique does not abate the hatred or insecurity a young man who has been cheated on feels, a feeling of betrayal compounded by heartbreak and health risk. It doesn't put $900 in the pocket of the man who currently needs PEP. Nor does it help a young man determine whether PrEP is the right solution for him. And critique certainly doesn't alleviate the stutter of the young man who is confessing to his loved ones that he is at-risk and that he doesn't know how he can manage: that he'd rather kill himself than deal with HIV for the rest of his life.

Critique doesn't make the efficacy of HIV prevention practices during the transition to the biomedical era of HIV prevention any less uncertain and the experience of serostatus uncertainty any less real, any less painful. Critique itself doesn't directly change the conditions of uncertainty. It does, however, help us to examine them. It helps us to illuminate all of the everyday experiences of uncertainty occurring in this epidemic and to share complex and touching stories of how social actors confront the unknown. It helps us to expand what it is we know about this epidemic, so that we can begin to imagine a better future. Critique doesn't offer us all the solutions. Yet, through stories of human perseverance, it does offer us hope. And in an epidemic three decades in, affecting nearly 40 million people worldwide, hope is desperately needed. Hope is our greatest weapon—perhaps our only true weapon—against uncertainty.

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Appendix A

Interview Guide: The HIV Risk Project

Section 1: Rapport Building and Demographics

1. How are you doing today?
2. Are you currently working or studying somewhere? Do you know what your future job/work/study plans might be?
3. How long have you lived in Montréal/Toronto? Did you grow up here? Where were you before Montréal/Toronto?
4. How do you normally describe your cultural or ethnic background?
5. How old are you?
6. To identify yourself, do you generally use the term gay or queer or something else? Can you elaborate on why?
7. How did you find out about this research project?
8. Have you ever done an interview for a research project before?
9. What made you decide to do this interview?
10. Is there anything in specific that you hope to get out of doing this interview?
11. In general, is talking about HIV and sexuality something that you are very comfortable with doing? Is it a topic you discuss often? Rarely? Probe: Why do you think this is the case?
12. And at the time of this interview, can you confirm your HIV status or would you say that you are unsure? When were you last tested?

Section 2: Health, HIV Prevention and Sexuality: General Awareness and Opinions

13. How would you define health? What does it mean to you to be healthy or unhealthy?
14. How would you define sexual health? Is there any difference between the ways you think about your health in general versus the ways you think about your sexual health?

15. Do you think similarly or differently about HIV versus other health issues? For example, do you think about heart disease the same way as you think about the possibility for HIV infection?
16. Do you think about HIV similarly or differently than other sexual health issues, like chlamydia or syphilis, for example?
17. In terms of your overall health, how significant of a role does HIV prevention play (i.e. top priority, high priority, low priority, same as everything else, etc.)?
18. How would you rate your overall knowledge on HIV prevention—extremely knowledgeable; you know enough to get by; there are gaps; you're an expert, etc.? Are you happy with your level of knowledge? Why or why not? Is there something you wish you knew more about?
19. How about your gay male friends and sexual partners? Do you think they are very knowledgeable about HIV prevention? Why or why not?
20. In general, how often would you say that you are unsure about your HIV status (so you can't absolutely confirm that you are negative, you might need to go in for an HIV test)?
21. In general, what makes you unsure about your HIV status?
22. Do you consider yourself to be healthy even if you are unsure about your HIV status?
23. How would you describe what it is like to not be able to confirm your HIV status?
24. In your opinion, how easy or difficult is it for someone to contract HIV?
25. How do you think you would handle an HIV-positive diagnosis? What are your main concerns about living with HIV?
26. In your opinion, how easy or difficult is it to live with HIV today? Do you think you know enough about what it is like to live with HIV today?
27. Do you consider HIV/AIDS to be a very feared disease today? What are your opinions on that?
28. Does thinking about HIV/AIDS ever cause you any stress? Or would you say that you are fine when you think about the topic in general?
29. What does sexuality mean to you? How would you describe the main components of your sexuality?
30. How significant is your sexuality compared to other social aspects of your life? Why is this the case?

31. What are some of the issues, opportunities and challenges you see with gay male dating today?
32. In terms of your sexuality, how much do questions of HIV and sexually transmitted diseases play a role compared to other aspects? What are those other aspects?
33. How would you define safer sex? Has your definition of safer sex ever changed?
34. Have you ever encountered sexual partners with different safer sex strategies than yourself? If so, how did you deal with that? (*Eventually moved down to section three*)
35. How confident are you in the effectiveness of your safer sex strategies? Has your level of confidence in your strategies ever changed?
36. Has HIV prevention influenced the type of sexual/intimate relationships you have (monogamous, open relationship, periods of abstinence, the type of sex you have with different people, etc.)?
37. Have you ever found it difficult to balance your desires for sex and intimacy from your concerns about HIV and other sexually transmitted infections? If so, how have you dealt with this? If not, why do you think this is the case?
38. Is HIV prevention different to navigate when you are having sex within a regular relationship (e.g. with a boyfriend, or regular lover) versus outside of one? Is it easier or harder to negotiate safer sex within a relationship versus a more casual encounter?
39. Is trust in a sexual relationship important to you? How so? How do you develop trust with your partners? Does the type of trust differ with different types of partners?
40. If HIV infection were not a possibility, do you think your sex life would be any different? If yes, how so? If no, why not?
41. How do party drugs factor into your understanding of HIV prevention? Do you think about drugs and HIV the same way you think about sex and HIV?
42. Do you think HIV/AIDS plays a significant role in what it means to be a gay or queer man today? Why or why not? How so? How about for young gay men?
43. How would you define or describe the gay community?
44. Do you consider yourself to be a member of the gay community (and/or queer community)? Is the idea of the gay community a concept that you find useful? Important?

45. What do you think the significance of HIV/AIDS is to the gay community today? Do you think gay male communities experience HIV/AIDS any differently than non-gay communities?
46. Do you consider yourself knowledgeable about the history of HIV in gay male communities in Canada?
47. Do you think young gay men today care about HIV prevention as much as they should? Why or why not? Do you think that they are ambivalent or apathetic?
48. (*Added after second interview*) Do you think young gay men experience any social pressures when it PARNTER comes to sex? What are they? Why do you feel this way?

Section 3: Risk Related Experiences

49. What does the idea of risk mean to you? How would you define it?
50. What does being at-risk for HIV mean to you? How would you describe what it means to be an at-risk person?
51. As a gay/queer man, do you frequently consider yourself to be at-risk for HIV?
52. Do you consider yourself as belonging to an at-risk group? Do you think of the gay male community as being an at-risk community?
53. Do you remember when HIV/AIDS first came on your radar?
54. Do you remember some of your thoughts on HIV/AIDS when you were first coming out as gay? Do you mind telling me when you came out as gay/queer? What was that like?
55. Did your perceptions about HIV/AIDS change before and after you started having sex with men?
56. How specifically have you experienced being at-risk for HIV in your life?
    a. Here I would like you to describe a particular situation (or several situations) where you had to deal with the potential of HIV infection, or an uncertainty around your HIV status, and tell me how you dealt with it.
    b. What made you think that you were more at-risk this time than any other?
    c. How did this experience affect you? How would you describe what you were feeling at the time?

d. Can you recall there be any difference between how you were thinking and feeling during the "moment of risk" versus after?
e. Did you learn anything from this experience?
f. How significant was that moment/were those moments to you?
g. Did this moment conflict with some of your thoughts on HIV prevention at the time? If so, how did you respond to this?
h. Did your understandings of prevention or safer sex change in any way following this event?
i. If you did use any health services (e.g. hospitals/medical centres, testing centres) did you find navigating these services straightforward/easy? If not, what challenges did you face?

Section 4: Additional Literacy Questions and Social and Political Issues

57. In terms of HIV/AIDS, are you familiar with the term "chronic manageable condition"? How would you describe it? What does it mean to you? Do you believe that HIV is a "chronic manageable condition"? Why or why not?
58. In terms of HIV prevention, could you describe the differences between "high risk" versus "low risk" (and any other risk categories that you might have heard)? Have you found this type of distinction useful in the past? How so?
59. In your opinion, does performing low(er) risk activities mean that you are still at-risk (for example, does it mean that you will consider getting tested)?
60. Do you know what treatment as prevention is?
61. Do you know what undetectable viral load is or undetectability? Could you elaborate?
62. Do you know what PEP and PrEP are? Do you have opinions on these prevention tools? Would you consider using PrEP?
63. Are you comfortable dating or sleeping with HIV-positive gay men? Probe: Do you know any HIV-positive men?
64. Do you feel that HIV-positive men need to disclose their HIV-positive status before sex? Why do you feel this way? Have you ever encountered a situation where this issue was pertinent?

65. Are you aware of the current legal situation around HIV status disclosure? What does this mean to you? (Explain laws if participant unsure). What are your thoughts on the current law?

Section 5: Prevention Education and Closing

66. In Canada, do you know who is responsible for taking care of HIV prevention? What people or institutions?
67. Where would you say you get most of your information about HIV prevention? Why?
68. Have you ever gone to an AIDS Service Organisation to receive services (counselling, testing, information)? AIDS activist group meeting or a demonstration?
69. Can you recall an HIV prevention campaign or program that you thought was particularly effective? Or ineffective? Can you explain why you thought this was the case?
70. In terms of HIV prevention, what do you think the main challenges are that young HIV-negative gay men face today? How manageable do you think these challenges are?
71. Do you think HIV prevention education can be improved? If yes, how so?
72. Is there something about HIV risk and HIV prevention that you think we haven't covered in this interview that you would like to address?
73. Has participating in this interview changed any of your thoughts about HIV?

Thank you for your time and cooperation.