Distortions in the digital looking glass: Information and communication technologies and bodily self-conceptions in men seeking men

by

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This thesis consists of material all of which I authored or co-authored: see Statement of Contributions included in the thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Statement of Contributions

This thesis consists in part of four manuscripts that are in the process of being submitted to, are undergoing review for, or have been published in academic, peer-reviewed journals.

Exceptions to sole authorship:

Chapter 2. Study I: 'The impact of social media on body image perceptions and bodily practices among gay, bisexual, and other men who have sex with men: a critical review of the literature and extension of theory'

Eric Filice conceptualized the manuscript; sourced, reviewed, collated, and synthesized the literature; developed the model described; drafted and edited the manuscript for publication.

Amanda Raffoul provided guidance in conceptualization of the manuscript; offered foundational ideas to the paper; read, copyedited, and provided feedback on all drafts.

Samantha Meyer provided guidance in conceptualization of the manuscript; read, copyedited, and provided feedback on all drafts.

Elena Neiterman provided guidance in conceptualization of the manuscript; read, copyedited, and provided feedback on all drafts.

Chapter 3. Study II: 'The influence of Grindr, a geosocial networking application, on body image in gay, bisexual and other men who have sex with men: an exploratory study'

Eric Filice conceptualized the manuscript; sourced, reviewed, collated, and synthesized the literature; obtained ethics approval; collected the data; analyzed the data; drafted and edited the manuscript for publication.

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Chapter 4. Study III: 'Shades of digital deception: Self-presentation among men seeking men on locative dating apps'

Eric Filice sourced, reviewed, collated, and synthesized the literature; analyzed the data; drafted and edited the manuscript for publication.

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Diana Parry provided guidance in conceptualization of the manuscript; obtained ethics approval; read, copyedited, and provided feedback on all drafts.

Harrison Oakes aided in conceptualization of the manuscript; collected the data; aided in analysis of the data.

Chapter 5. Study IV: 'Distortions in the digital looking glass: Self-presentation on locative dating apps and bodily self-conceptions in men seeking men'

Eric Filice conceptualized the manuscript; sourced, reviewed, collated, and synthesized the literature; obtained ethics approval; collected the data; analyzed the data; drafted and edited the manuscript for publication.

Samantha Meyer provided guidance in conceptualization of the manuscript; read, copyedited, and provided feedback on all drafts.

Elena Neiterman provided guidance in conceptualization of the manuscript; read, copyedited, and provided feedback on all drafts.

Diana Parry provided guidance in conceptualization of the manuscript; read, copyedited, and provided feedback on all drafts.

Abstract

Internet-enabled information and communication technology (ICT) use has become so diffuse as to be considered a hallmark of modern life. Between 2000 and 2019, the proportion of US adults who reported using some kind of Internet-enabled device skyrocketed from 52% to 90%. Sexual and gender minorities, particularly gay, bisexual and other men who have sex with men (GBMSM), are especially keen adopters of certain types of ICT like social media (e.g., Facebook, Twitter, Instagram) and location-based real-time dating apps (LBRTDAs) (e.g., Grindr, Tinder, Bumble) due to the possibilities they afford for circumventing various cultural, geographical, and legal barriers to forging interpersonal connections. However, use of such technologies is associated with adverse bodily self-awareness, including body dissatisfaction, body shame, and appearance preoccupation, as well as maladaptive body behaviours. To date, insufficient effort has been made to derive a mechanistic explanation for the relationship between ICT use and bodily self-conceptions in GBMSM.

The overarching purpose of this dissertation research is to investigate how use of certain popular Internet-enabled ICTs, including social media and LBRTDAs, influences bodily self-conceptions in GBMSM – a group who are not only particularly keen adopters of such technologies, but are disproportionately burdened by issues of body consciousness. The effort is spread across four studies, each of which address more specific questions and/or particular facets of this broad phenomenon. Generally, the works included in this dissertation adopt a symbolic interactionist, qualitative methodological approach based on in-depth, semi-structured interviews conducted with a purposive and theoretical sample of ICT-using GBMSM.

When taken together, the findings illustrate a jointly-constructed standard among contemporary North American GBMSM that elevates the body as something to be perfected for

aesthetic and sexual consumption, and frames as ideal the White, fair-skinned, trimmed or hairless, muscular-mesomorphic, cisgender, able body. In terms of their influence on individuals' bodily self-conceptions, ICTs like social media and LBRTDAs function as another medium for sociocultural influence, which is to say, a platform through which individuals can be exposed to social behaviours that reflect and (re)constitute the prevailing standards. Where ICTs differ from in-person interaction as to have a demonstrable, largely deleterious effect on users' body attitudes is with respect to how frequently and intensively the subject is confronted with the standard. Receipt of appearance-related feedback, comparison against particular others, and switching of conscious attention to the embodied self are phenomena that similarly induce comparison against the standard and which occur more often and/or to greater effect online. This is partly a consequence of changes to human behavioural routines stemming from perception of technological affordance, many of which relate to self-presentation, or the deliberate attempting to influence others' perceptions of oneself. These include, *inter alia*, feelings of disinhibition to behave in otherwise face-threatening ways, which embolden critical appearance-focused commentary, as well as the potential for enhancement of the self-image beyond what is possible offline, which prompts reflection on one's own imperfections and makes onlookers feel even more inadequate by comparison. However, these effects inevitably also come into tension with the human agency of the user, hence why the psychological outcomes of ICT use are neither total nor uniform. Users can resist to compare themselves to the standard as reflected by others' behaviour, critique the prevailing standard, and/or internalize all manner of alternative standards according to their goals and values.

The included works make numerous substantive, theoretical, and methodological contributions to the literature. Study 1 is the first to provide any kind of theoretical framework that explains how use of social media and LBRTDAs influences bodily self-conceptions in GBMSM; studies 2 and 4 to empirically investigate the mechanisms underlying the relationship between LBRTDA use and bodily self-conceptions in GBMSM; study 3 to examine GBMSM's self-presentation behaviour on ICTs by exploring interactions between determinants of impression construction; and study 4 to empirically investigate how self-presentation behaviour *as such* influences bodily self-conceptions of ICT users in general, let alone LBRTDA-using GBMSM. The implications of the included works for public discourse, policy, industry, and health promotion practice are legion.

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Finally, thank you to the participants for sharing your intimate stories of passion, grievance, (mis)adventure, and (in)security. To whatever degree the networked publics of the future are more inclusive, pleasurable, and humane, it will be due in no insignificant part to you.

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List of abbreviations

2SLGBTQ+ – Two-spirit, lesbian, gay, bisexual, trans, queer/questioning, and other diverse sexual and gender identities

AN – Anorexia nervosa

BN – Bulimia nervosa

GBMSM – Gay, bisexual, men who have sex with men

GSNA – Geosocial networking app

HIV – Human immunodeficiency virus

ICT – Information and communication technology

LBRTDA – Location-based real-time dating app

LGB – Lesbian, gay, bisexual

M4M – Men for men

Chapter 1. Introduction

1.1 Thesis format and structure

This dissertation assumes the format of an integrated (or “sandwich”) thesis. It is a compilation of articles which are in and of themselves standalone pieces of scholarly work, but which cohere under a general program of research undertaken as part of my PhD training. All included articles are in the process of being submitted to, are undergoing review for, or have been published in academic, peer-reviewed journals. For each article, my contributions were substantial enough to merit primary authorial credit. See above statement of contributions for a more detailed breakdown for each component article.

This thesis is divided into six major chapters. Chapter 1 (Introduction) provides an overview of the entire research program that is accounted for within this thesis. It includes reviews of (a) the general substantive focus of the overall program of research; (b) the theoretical foundations supporting the research; (c) the objectives of each of the included studies and a description of the manner in which they relate to one another; and (d) the methodological approaches used, focusing on rationale. Chapters 2, 3, 4, and 5 (Articles I through IV) include the research articles themselves. Chapter 6 (Conclusion) summarizes the specific and overall outcomes of the articles and explains their significance to the field. It includes (a) a brief summary of the articles’ findings and general conclusion; (b) description of academic contributions; (c) implications for industry and health promotion practice; (d) a discussion of shared limitations; and (e) directions for future research.

The content of the articles included in this thesis are reproduced exactly from the final word processing files submitted for publication. Only the formatting is altered to conform with the rest of the thesis. As a result, there are some minor stylistic inconsistencies within the thesis.

Specifically, “location-based real-time dating apps” is used interchangeably with “geosocial networking apps”, and “social media” with “social network sites” and “social networking sites”. Additionally, the first person pronoun “we” is used in the manuscripts while “I” is used for the remainder of the thesis.

Because the included studies are self-contained works that were conceived and undertaken at different points in time, they do not necessarily reflect the same theoretical and methodological assumptions. Readers will detect differences in language and logic as they progress through the thesis. These differences signal transformations in my own knowledge and experience, research priorities, and theoretical proclivities. As such, a straightforward “omnibus” introductory section that conveys a common empirical and theoretical foundation for the included works will not suffice to capture this dynamism. This introduction will triply seek to: (1) chronicle my development as a researcher in training, including documenting shifts in substantive foci, theoretical orientation, and methodology; (2) expound on the theoretical and methodological assumptions that undergird the included works but due to publishing constraints had to be excluded; and (3) demonstrate that the included works are sufficiently interrelated as to satisfy the requirements of the dissertation.

1.2 Substantive focus

Despite being conceived and undertaken independently, the studies included in this thesis are related in a double sense: individually, they share a concern with a set of common empirical phenomena, but also when taken together, they provide a more comprehensive account of the phenomena in question than any one study by itself. This section will enumerate those shared and/or overarching areas of interest.

1.2.1 Information and communication technologies

Information and communication technologies are defined as a "diverse set of technological tools and resources used to transmit, store, create, share or exchange information." (UNESCO, 2021) It includes such innovations as computers, the Internet, radio, television, and telephony. ICT use has become so diffuse as to be considered a hallmark of modern life. Between 2000 and 2019, the proportion of US adults who reported using some kind of Internet-enabled device skyrocketed from 52% to 90%, and while significant disparities in adoption persist based on age, income, education and community type, the "digital divide" overall continues to narrow (Pew Research Center, 2019).

This thesis is principally concerned with two specific types of ICT: social media and location-based real-time dating apps (LBRTDAs). Social media (also known as social network sites) refer to

> networked communication platform[s] in which participants 1) have uniquely identifiable profiles that consist of user-supplied content, content provided by other users, and/or system-level data; 2) can publicly articulate connections that can be viewed and traversed by others; and 3) can consume, produce, and/or interact with streams of user-generated content provided by their connections on the site. [emphasis in original] (boyd & Ellison, 2013, p. 158)

Social media include such well-known services as Facebook, Twitter, Instagram, Pinterest, YouTube, TikTok, and Snapchat. Although services of this nature existed as early as the mid-90s, they rose to cultural prominence beginning around 2003, when Friendster first attracted mass media attention (boyd & Ellison, 2013). As of January 2020, there were more than 3.8 billion social media users worldwide (we are social, 2020). In 2021, 72% of US adults reported using at least one social network site, up from just 5% in 2005 (Pew Research Center, 2021).

Location-based real-time dating apps (also referred to as geosocial networking apps (GSNAs)), on the other hand, refer to ICTs that specifically are “designed to generate connections between people who are interested in romance, casual sex, or friendship.” (Orchard, 2019) They include smartphone applications like Tinder, Grindr, Bumble, SCRUFF, and Jack’d. LBRTDAs are distinguished from their browser-based precursors (e.g., Match, eHarmony, Adam4Adam, OkCupid) by their convergent use of smartphones’ cellular signal, Wi-Fi connection, and satellite position via global positioning systems (GPS) to locate users with cartographic specificity and render them visible to one another by precise order of distance (Miles, 2019). In 2019, 30% of US adults reported having previously used an online dating website or mobile dating app, up from 11% in 2013 (Anderson, Vogels & Turner, 2020).

Disparities in adoption of networked technologies like social media and LBRTDAs exist between certain demographics in North America. Social media use is especially widespread among young adults (84% of US adults age 18-29 report previous use compared to 73% of those 50-64 and 37% of those 65+), while rates are similar across race/ethnicity, gender, income, education, and community type (urban, suburban, rural) (Pew Research Center, 2021). A survey of a nationally representative sample of US adults also found that individuals identifying as lesbian, gay or bisexual (LGB) were more likely than their heterosexual counterparts to have a social network site account and access Facebook daily (Seidenberg et al., 2017). Similar patterns can be seen with LBRTDAs, though differences by sexual orientation are more striking, with over one in two LGB adults (55%) reporting previous use of dating websites or apps compared to just over one-fourth of heterosexual adults (28%). Similarly, whereas 11% of heterosexual US adults have married or been in a committed relationship with someone they first met through a dating website or app, the same figure is 20% for LGBs (Anderson, Vogels & Turner, 2020).

There is considerable social and historical precedent for LGBs' vigorous uptake of Internet-enabled ICTS, and LBRTDAs especially. Indeed, gay, bisexual and other men who have sex with men (GBMSM) in particular exhibit unique patterns and motivations for use that stem from their collective history of cultural marginalization and state oppression/persecution. Since same-sex attraction is and has been both (a) culturally stigmatized and (b) an invisible or only partly visible trait, the Internet has long been valued as a means of identifying other GBMSM and communicating one's sexual or romantic intentions with lesser risk of harassment, violence, job loss, or arrest, in much the same way as the "handkerchief code" deployed in the pre-digital era (Birnholtz et al., 2014; Grov et al., 2014; Gudelunas, 2012). GBMSM were among the first adopters of Internet-based services in the 1990s for the purposes of networking, dating, and sexual partner seeking. Chat rooms, email services and websites such as Geocities, planetout.com, and gay.com became popular venues for GBMSM to interact. Data on rates of Internet use by GBMSM during this time are scarce, but the proliferation of culturally-specific terminology, such as M4M (men for men), serve as evidence of these technologies' popularity with this demographic (Grov et al., 2014). Further underscoring networking and dating technologies' intimate links with gay, bisexual and queer community, one of the first ever LBRTDAs to penetrate the market was Grindr in 2009, which is expressly targeted to "gay, bi, trans, and queer people" (Grindr, 2020) – several years before current community-nonspecific industry leaders like Tinder and Bumble were launched.

1.2.2 Bodily self-conceptions and related issues

Aversive states of bodily self-awareness and their related psychosomatic and behavioural issues became an area of major scientific interest in the mid-to-late 20th century. Although observed differences might to some degree reflect changes in diagnostic practices and health service availability, incidence rates of conditions like anorexia nervosa (AN) and bulimia nervosa (BN) rose steadily in Western societies from the 1930s through the 1970s (Currin et al., 2005; Hoek, 2016; Hoek & van Hoeken, 2003; Keel & Klump, 2003). Following a period of relative stability through the 1990s, it appears rates of disordered eating may again be on the rise – a systematic review of recent studies found a significant increase in point prevalence of eating disorders from 3.5% in the 2000-2006 period to 7.8% in the 2013-2018 period (Galmiche et al., 2019).

Young white women overall display the highest rates of body dissatisfaction, appearance investment and disordered body-related behaviours (Demarest & Allen, 1998; Feingold & Mazzella, 1998; Muth & Cash, 1997; Rucker III & Cash, 1992; Tiggemann, 2004). However, this does not preclude the existence of disparities between other social groups. Besides sex/gender, some of the other most frequently observed differences are across axes of sexuality and race/ethnicity. A meta-analysis of 27 studies indicated that GBMSM display higher body dissatisfaction than their heterosexual counterparts (Morrison, Morrison & Sager, 2004). GBMSM also display increased rates of various maladaptive body-related behaviours, including disordered eating (Calzo et al., 2017; Conner, Johnson & Grogan, 2004; Matthews-Ewald et al., 2014; Watson et al., 2017), purging (i.e., self-induced vomiting or laxative use for the purpose of weight loss) (Matthews-Ewald et al., 2014; Watson et al., 2017), use of diet pills for weight loss (Austin et al., 2013; Matthews-Ewald et al., 2014; Watson et al., 2017), and anabolic steroid misuse (Blashill & Safren, 2014). Other studies have found elevated rates of unhealthy weight control behaviours among persons of colour relative to white persons (Austin et al., 2011; 2013; Story et al., 1995; Tran et al., 2019).

1.2.3 Links between ICT use and body consciousness issues

A common explanation for the rise in body consciousness issues beginning in the 1930s involves the contemporaneous shift to visual mass media with the invention of the television, and the resultant proliferation of images depicting unrealistic appearance ideals (Levine & Harrison, 2004; Silverstein et al., 1986; Spitzer, Henderson & Zivian, 1999). In support of this notion, consumption of mass media has repeatedly been linked to body dissatisfaction and disordered eating (for meta-analyses, see Barlett, Vowels & Saucier, 2008; Grabe et al., 2008; Groesz et al., 2002; Levine & Murnen, 2009; Want, 2009). However, recent shifts in media consumption patterns call into question mass media's continued relevance. Since 2010, global media consumption through television, radio, newspapers and magazines has decreased markedly while consumption through mobile internet use has risen from 9.8 minutes per day in 2010 to a projected 112.9 minutes per day in 2018 (Austin et al., 2016). As mentioned above, corporate-owned and funded mass media is also facing greater competition for audiences' attention from social media, use of which has increased dramatically over the past decade (Pew Research Centre, 2021).

Like its non-interactive predecessor, social media appears to contribute to body consciousness issues. A series of reviews and meta-analyses indicate, on balance, that social networking site use is associated with body dissatisfaction, internalization of a thin ideal, and disordered eating, and that these associations may strengthen with sustained use over time (Fardouly & Vartanian, 2016; Holland & Tiggeman, 2016; Mingoia et al., 2017). Some longitudinal studies linking social media usage with greater body dissatisfaction (de Vries et al., 2015; Smith, Hames & Joiner, 2013) and/or desire to undergo body modification (de Vries et al., 2014) at follow-up also suggest this widely-observed correlation reflects that social media negatively impacts body consciousness, rather than body dissatisfaction encouraging heavier social media use.

A smaller body of research suggests LBRTDAs exert similar effects as non-dating-oriented social media platforms. Strübel et al. (2017) found that use of Tinder by men and women is associated with greater body dissatisfaction, body shame, appearance self-monitoring, and likelihood of engaging in appearance comparisons. Another study found adult users of dating apps were more likely than non-users to display a number of unhealthy weight control behaviours, including fasting (not eating for at least a day), self-induced vomiting, using laxatives, using diet pills without a doctor's advice, using anabolic steroids, and using muscle-building supplements (e.g., creatine, amino acids, hydroxyl methyl-butyrate [HMB], or growth hormone) (Tran et al., 2019). Other studies suggest the link between dating app use, adverse states of body consciousness and maladaptive behaviours similarly apply to GBMSM (Griffiths et al., 2018; Tran et al., 2020).

1.3 Review of theoretical foundations

1.3.1 Symbolic interactionism

A good portion of my self-erudition during my PhD program was dedicated to cultivating a worldview – a unifying, cohesive system of thought that would ground my theorizing; some mode of interpretation that would provide an ontological and epistemological foundation for the phenomena I sought to study and the knowledge products that would be generated therefrom. Tacit to the theoretical and empirical works included in this thesis are all manner of assumptions regarding social reality, including, *inter alia*, what it means to be an individual, to be part of a society, to have – or be – a body, to reflect on that body, what technology is, and how technologies are situated vis-à-vis individuals and societies. With greater immersion in the variegated forms of historical and contemporary social theory, I found the symbolic interactionist frame to offer the most compelling and pragmatic answer to these and other questions. Adoption of this frame in my own scholarship was a gradual affair and was limited at any given point in time by the knowledge and experience I possessed – in manuscripts one and two, invocations of the self, body, society, and technology took for granted their onto-epistemological status. By papers three and four, however, I came to be more explicit in my application of the symbolic interactionist frame and problematization of the *nature* of the objects under study. In the following paragraphs I will provide a working definition of this frame and attempt to reconstruct an account of its application in the included works.

The intellectual precursors of symbolic interactionist thought can be traced back to Scottish Enlightenment philosophers, including Smith (1723-1790), Hume (1711-1776), and Ferguson (1723-1816), who first advanced a view of society as a network of connections between individuals. Other themes emphasized by these thinkers that influenced the development of symbolic interactionism include (a) the need to understand human behaviour through the lens of society rather than biology; (b) the importance of empirical observation over philosophical speculation; (c) the central role of social organization and change in establishing morals; and (d) the need for a new conceptual paradigm distinct from religion to understand social change (Longmore, 1998).

A second key influence was the American pragmatist philosophical movement, which began in the 1870s with the works of Charles Sanders Peirce (1877, 1878) and was further developed by William James (1907,1915), John Dewey (1920, 1922), and George Herbert Mead (1934). Generally speaking, pragmatists rejected what Dewey (1930) referred to as the ‘spectator theory of knowledge’, which frames knowing as a passive, “beholding” relation between the observer and observed. They instead espoused an ‘anti-representationalist’ view of knowledge as a tool for adapting to the demands of the world. By extension, pragmatists are skeptical of attempts by philosophers to derive ‘transcendental’ truths that are independent of the socio-cultural-historical contexts in which they are embedded. Knowledge, pragmatists maintain, is always embedded in a conceptual system established from the investigator’s point of view. Hence, the value of any one theoretical position should be established not in terms of how closely it comes to representing the ‘true’ nature of things, but by the social consequences of subscribing to that particular view (Baert, 2003). Or as James (1907, p. 48) puts it, “Ideas ... become true only in so far as they help us to get into satisfactory relation with other parts of our experience”.

Symbolic interactionism was also inspired by the concept of ‘sympathetic introspection’ advanced through the work of Charles Cooley (1902). Essential to Cooley’s understanding of the self and its relation to society is the idea that subjective mental activity undergirds social life. Indeed, he went as far as to define society itself as “a relationship among personal ideas” (Cooley, 1902, p. 84). Human behaviour that constitutes social systems, he argued, is driven by an empathic impulse to imagine situations as others see them. Moreover, Cooley maintains the self and society are inextricably bound: “the individual and society are two sides of the same coin; no individual exists apart from society, and there can be no self apart from others.” (Longmore, 1998, p. 45). To emphasize this point, Cooley referred to the individual as the “looking-glass self”, which includes three components: (1) how the individual imagines they appear to others; (2) the individual’s perception of others’ judgment of their appearance; and (3) the individual’s feelings in response to this perceived judgment. This suggests that others’ expectations are pivotal to self-perceptions and appraisals. W.I. Thomas (1931) further emphasized the significance of subjective experience in social life when he argued voluntary action is always preceded by interpretation of the surrounding context, a phenomenon he refers to as the "definition of the situation" (p. 41).

George Herbert Mead (1934) was the first to synthesize prior observations concerning the introspective and empathic self, situational definition, and deliberate action into a framework that would later provide the primary theoretical substance of symbolic interactionism. His so-called "social behaviourism" was formulated in contradistinction to the "crude behaviourism" that was pioneered by University of Chicago contemporary J.B. Watson and dominated psychology through the 1920s and 30s. Watson's behaviourism maintained that "mind" as an ontological notion was redundant to psychology's goals of predicting and controlling behaviour. Behaviour, he asserted, should be understood only as an automatic or conditioned response to external stimuli. Mead, in contrast, argued that humans respond to stimuli in a manner distinct from the animal models behaviourist psychologists used in their studies (Dingwall, 2001). Humans, he said, uniquely display the ability to communicate through symbols (i.e., language) that can be directed not only towards others, but the self. This permits humans in particular to have internal thoughts accompany behaviours. The self is reflexive insofar as it is able to carry out a "conversation of gestures" with itself. By extension, symbolic communication can only be achieved by role-taking, or placing oneself in another's shoes, so to speak.

Most modern forms of symbolic interactionism draw from the work of Herbert Blumer, who is credited with coining the term. By building off Mead's philosophy to develop a coherent theory with explicit methodological implications, Blumer's marks the first attempt at establishing a series of basic theoretical propositions for symbolic interactionism, which stand decidedly in critical opposition to the macro or structural orientation of orthodox sociology. Blumer takes issue with the prevailing structural bent of sociology for three reasons: (1) it necessarily involves a reification of social processes so that they exist as natural facts separate from individuals; (2) "it facilitates a portrayal of social life as static rather than processual, understood through categories with largely stable relationships instead of through social actors actually doing things" (Dennis & Martin, 2007); and (3) by seeing social structures as the cause of human behaviour, it is deterministic and denies capacity for individuals to negotiate situational constraints (Dennis & Martin, 2007). Rather than viewing society as a reality sui generis comprised of social structures that constrain behaviour through ideology (in the case of conflict theory) or socialization (in the case of functionalism), Blumer asserts "society" is in fact the product of complex, overlapping webs of human interaction. Because symbolic communication necessarily involves role-taking, as Mead stipulated, it follows that social situations are not maintained separately from the interpretative work of their actors. What defines an institution, group, movement, etcetera depends on the meanings individuals collectively ascribe to them. In defiance of structural determinism, Blumer paints a picture of individuals as agentic and autonomous, and behaviour as deliberate, emergent, and context-sensitive. Indeed, Blumer and a great many interactionists in his wake maintain that there is no higher level of social life beyond interaction that requires theorizing, as what others term structures are in fact simply "modes of representing the complexity of human activity" (Dennis & Martin, 2007).

To these ends, Blumer describes symbolic interactionism as an approach to the study of human group life and conduct. His formulation rests on three main principles, which I will unpack in turn:

1. Individuals act toward objects and other persons on the basis of the meanings they have for them. While this point might at first blush appear trite, social scientists and

psychologists have tended to downplay the significance of personal meanings and interpretation in their attempts to account for human behaviour through various determining factors (e.g., stimuli, attitudes, motives, perception, status demands, social position, norms, values). Rather than reducing meaning and interpretation to a sort of inert mediator between initiating/causative factors and the behaviours they are alleged to produce, symbolic interactionism holds that meanings which humans hold of objects are of central importance in their own right, and to neglect their role in shaping behaviour is to ultimately misrepresent the behaviour under study (Blumer, 1969).

2. The meanings of such objects are derived from, or arise out of, social interactions. The previous premise is shared by many other perspectives and alone is inadequate to distinguish symbolic interactionism. Where interactionism diverges from other approaches is with respect to what it sees as the sources of meaning. There are two predominant ways, traditionally, of accounting for the origin of meaning. The first sees meanings as intrinsic to the objects that possess them – they are part of the natural, objective makeup of the object. There is no process involved in the formation of meaning. This is consistent with the "realist" philosophical tradition. The second sees meaning as an expression of the human psyche that is projected onto the object in question. The constituent elements of meaning in this sense, therefore, are things like sensations, feelings, memories, motives, and attitudes. Symbolic interactionism, in contrast, does not see meaning as emanating from the intrinsic makeup of the object nor as a cluster of psychological elements that emerge in the response of an individual to an object. Instead, meaning is thought to arise from the process of interaction between

people. People come to define the meanings of things based on how they see others interact with those things. Meanings, therefore, are social products (Blumer, 1969).

3. Meanings are modified through an interpretive process that involves reflexive individuals interacting with one another. It is erroneous to assume that individuals simply act towards objects based solely on how their meanings imply they should be acted upon. The use of meanings by actors involves an interpretative process. The process of interpretation of meaning has two steps. First, the actor indicates to themselves the object(s) toward which they are acting. This act of indication involves the person interacting (communicating) with themselves. Second, by communicating with themselves, the actor will “handle” the many possible meanings of an object by selecting, checking, suspending, regrouping, and transforming them in light of their current situation and the goals of their action. Interpretation is not the automatic application of established meanings, but an emergent and transformative process in which meanings are applied and revised as necessary to guide action (Blumer, 1969).

Despite his indelible influence on nearly all modern interactionist-inspired work, Snow (2001) cautions against treating Blumer as the first and last word on interactionism. To do so risks obscuring later contributions by less-celebrated theorists that have meaningfully expanded the discipline’s reach. He thus suggests four broader and more inclusive ‘cornerstone principles’ made implicit but not fully articulated in Blumer’s work that better illustrate the breadth of substantive topics interactionists address and methods they employ. The first and most fundamental is the principle of interactive determination, which stipulates that key objects of sociological analysis – like self-conceptions, communities, and social movements – cannot be explained by attending only to their presumed intrinsic qualities. Rather, consideration must be given to the interactional contexts in which they are embedded (Snow, 2001). Secondly, the principle of symbolization posits that events, artifacts, individuals, aggregations of individuals, and other features of the social environment take on meanings that elicit certain feelings and actions. This principle was at the heart of Blumer's original conceptualization. Snow (2001, p. 371) asserts, however, that

> to focus too heavily on the generation and imputation of meanings and on associated interpretive processes can give rise to two erroneous presumptions: (1) symbolization is a continuously problematic issue for social actors; and (2) we therefore are continuously engaged in the interpretive work of making sense of the social world as we encounter and negotiate it throughout our daily lives. Such presumptions are misguided inasmuch as they fail to recognize the extent to which symbols and the meanings they convey are often, perhaps routinely, embedded in and reflective of existing cultural and organizational contexts and systems of meaning.

Stated another way, it is not necessarily the case that every situation presents a new opportunity to actively negotiate meanings and engage in creative, self-directed action – individuals often draw symbolizations, interpretations and responses from an already-established cultural repertoire. Rather than continue to adjudicate whether people act towards things based on their ascribed meanings – a point which seems all but settled in the affirmative – it would be more fruitful, Snow (2001) suggests, to query how meanings become taken for granted or routinized, what social contexts are conducive to the routinization of meaning, and under what circumstances these meanings are fractured or contested. To that end, the third principle of emergence focuses on those instances where crystallized meanings and patterned responses are for whatever reason unserviceable. It is here that new social practices arise which can depart from, challenge, and potentially transform existing structures. Finally, dovetailing the former principle, the principle of human agency highlights the capacity for individuals to act in a conscious, willful, and strategic manner. Interactionists do not outright dismiss the potential biological, social, and cultural influences on behaviour, but these predispositions or constraints are seen as producing, at most, tendencies – not static or pre-determined lines of conduct (Snow, 2001).

Importantly, there is no singular symbolic interactionist framework or methodology. Indeed, scholars have identified anywhere from two to fifteen variants (Reynolds, 1993). Symbolic interactionism is better understood as a broad intellectual tradition that houses an array of diverse and competing perspectives that are joined only loosely by some general premises. Interactionists differ with respect to what they understand the goals of their work to be (e.g., whether there is sufficient constancy in social life to warrant predictive generalizations from empirical observation, or if we can only achieve after-the-fact understandings of situated social behaviour), the degree to which they emphasize social structure in their analyses, their views on the significance of the self in relation to social structure and interaction, and their methodological predilections (e.g., naturalistic, qualitative, observational methods versus quantitative statistical analyses) (Stryker & Vryan, 2006). These variations tend to cluster in particular ways – for instance, those emphasizing the fluid and contingent character of interactions are also likely to vouch for the creative potential of social actors, dismiss a priori theory, and employ qualitative methods – but these boundaries are becoming increasingly porous as contemporary interactionists dispense with the notion that disciplinary tensions must be resolved by exclusionary choice, or accepting one view and rejecting the other(s). Many, myself included, choose instead to espouse a “broad interactionist perspective” (Stryker & Vryan, 2006, p. 25) for reasons of theoretical responsiveness and methodological flexibility.

That said, there are some particular fault lines along which I specifically situate myself. I borrow from the structural camp or Iowa school that interactions and exchanges of meaning largely occur in relatively stable patterns – that in everyday life there is overall more rigidity and habit than creativity and play. Indeed, there must be if we are to be able to abstract from the particularities of participant description to derive generalizations regarding social-psychological phenomena. Blumer (1969) goes so far as to suggest that the whole of social life is perpetually in the process of (re)construction through interaction – that all of the meanings, definitions and interpretations foundational to interaction undergo continuous reformulation, and thus lack the generality and stability required of theoretical concepts. He concludes that sociologists can only achieve after-the-fact understandings of social behaviour that has already occurred and cannot develop general theoretical explanations that predict behaviour, either individual or collective. With this I do not agree. I am more partial to Stryker’s (Stryker & Burke, 2000; Stryker & Vryan, 2006) position that while humans are agentic in their capacity to suspend, reflect on and renegotiate meanings, and thus always have the potential to “talk back” or “act otherwise”, it is also possible for societal tendencies to emerge, if for no other reason than habituation. Indeed, if this were not the case, it would be impossible for there to be any sort of patterned interaction between human and technology and for the emergence of any kind of “media effects” (Bryant & Oliver, 2008).

1.3.2 Sexuality and sexual identity

All of the studies included in this thesis are characterized by a concern with the experiences of individuals who in the cultural imaginary comprise a distinct sexual subgroup, and as such are bound up with assumptions as to the nature of sexuality and sexual identity (it should go without saying that GBMSM are just one of many equity-seeking groups deserving of academic concern, though for reasons mentioned above were far from arbitrarily singled out). In exploring various disciplinary approaches, I came to find the sociological study of sexuality, especially those works in the interactionist vein, to offer a particularly persuasive account. Retrospectively, studies 1 and 2 comport with the basic principles of this branch of scholarship in their execution; by studies 3 and 4, they were more consciously applied to the methodology. Said principles are described in the ensuing paragraphs.

The field of sociology, and especially those works situated within the symbolic interactionist tradition, have made significant historical contributions to the study of sexuality that, some lament, have been virtually eclipsed by the ascendancy of feminist, poststructuralist, and queer theory. Jeffrey Weeks (1998, p. 132) takes umbrage with these fields' disinclination to acknowledge their theoretical debts:

> It is frustrating for those of us who have been toiling in this particular vineyard since the turn of the 1960s and 1970s to have our early efforts in understanding sexuality in general, and homosexuality in particular, refracted back to us through post-Foucauldian abstractions ... and then taken up as if the ideas are freshly minted.

Irvine (2003) provides an overview of these contributions dating between 1910 (the early Chicago School) and 1978 (the year of publication for the English translation of Foucault's The History of Sexuality: An Introduction, Volume 1), which she categorizes into five broad themes: the denaturalization of sexuality and its origins; the historicization of sexuality; the analytic shift from "deviants" to "deviance"; the destabilization of sexual categories and identities; and the theorization of sexuality and gender as performance. I offer a necessarily partial review of each theme and its key players in turn.

The denaturalization of sexuality and its origins: By the late nineteenth century, sexology had superseded religion as the preeminent logic through which sexuality was understood in North America. Regarding sex as an object of medical study, prominent sexologists like Richard von Krafft-Ebing and Havelock Ellis advanced a view of sexuality, and especially "sexual perversion", as a series of drives and appetites innate to the individual (Weeks, 1985). For sociologists studying sex in the early twentieth century, the rhetorical allure of this biological determinism proved difficult to resist, and indeed, sociology's challenge to sexual essentialism was a gradual affair. For instance, in his studies of sexual behaviour in urban environments, Robert Park made frequent reference to instinctual, pre-social sexual drives: "men [sic] are brought into the world with all the passions, instincts, and appetites, uncontrolled and undisciplined" (Park & Burgess, 1925, p. 43). In the same work, however, Park articulated through his concept of "moral regions" – areas in the city where individuals segregate themselves on the basis of shared interests – that social structures can produce unique complexes of sexual behaviour.

This relatively modest departure from natural explanations of sexuality would be more fully realized by symbolic interactionists around mid-century. Central to this endeavour were John Gagnon and William Simon, who are credited with proposing the first fully sociological account of sexuality (Jackson & Scott, 2010). Over numerous co-authored works the two advanced a series of propositions concerning human sexuality that were set up in explicit contradistinction to the dominant paradigms of the day, including the biological and psychological essentialism of sexology and Freudian psychoanalysis, respectively. These ideas were synthesized in what is now seen as Gagnon and Simon's most influential work, titled Sexual Conduct (1973), in which they reject an understanding of sexuality as a primal substance that uniquely exists outside the realm of the social or is stabilized in early childhood development. They argue instead that our understanding of sexuality is constituted through everyday interaction and is liable to reconstruction across the life course. Body parts, desires, and behaviours are not inherently sexual; rather, they become so when imbued with meaning through social interaction.

The historicization of sexuality: Upon revisiting of his arguments originally made in Sexual Conduct, Gagnon (1999, p. 124) formally postured what many likely saw as an obvious implication of the claim that sexualities are a social accomplishment, namely, that they are also culturally and historically variable:

> In its opening chapter we argue that sex between men in Classical Greece and on 42nd street in the 1950s were not the same type of conduct, even though the bodily organs engaged were identical. The anus, the penis and the mouth do not have trans-historical meanings, nor do such social actors as men and boys.

Mary McIntosh evidenced this logic in 1968 when she advanced the notion of "the homosexual role". She argued homosexuality was not an inherent condition but a social "role", her use of the term here evoking an eclectic mix of functionalism and dramaturgy (Weeks, 1998). By integrating sociological and historical analysis – a novel approach at the time – she demonstrated how the emergence of the homosexual role in England could be traced to a discrete historical period, namely the late seventeenth century. Her work underscored the crucial function of comparative sociology in uncovering historical changes and cross-cultural differences in how sexual meanings are organized.

The analytic shift from "deviants" to "deviance": The 1960s saw a significant reformulation in the sociological study of deviance, during which time emphasis shifted from identifying the inherent "deviant" characteristics of individuals or their behaviours to understanding how social rules generate and selectively impose on persons or acts the label of deviance. This shift is often traced to Howard Becker's 1963 study Outsiders, wherein he asserts:

> social groups create deviance by making the rules whose infraction constitutes deviance, and by applying those rules to particular people and labeling them as outsiders. From this point of view, deviance is not a quality of the act the person commits, but rather a consequence of the application by others of rules and sanctions to an "offender." The deviant is one to whom that label has successfully been applied; deviant behavior is behavior that people so label. [emphasis original] (p. 9)

Becker also argued that the social rules which construct deviance are prone to disagreement across cultures and historical periods. Thus, a role that is considered marginal in one milieu could well be hegemonic in another.

This reconceptualization of deviance theory ushered in a wave of "appreciative" empirical studies on marginal sexual subcultures (e.g., Simon & Gagnon, 1967; Weinberg, 1965) that were in stark contrast to the still-pathologizing frame of 1960s psychology and psychiatry (e.g., Socarides, 1968). According to Irvine (2003), this line of work yielded three crucial insights about sexuality that remain of import today: (1) research on sexual minorities is inadequate without attendant examination of dominant sexual definitions and the structures which generate and maintain them; (2) sexual categories are occupied by a heterogenous group of individuals; and (3) since deviance is not inherent or anomalous, everyone has the capacity to be sexually deviant.

The destabilization of sexual categories and identities: The new interactionist-inspired deviance theories that emphasized the ubiquity of deviant behaviour called into question the notion, long held as axiomatic among sexologists, that the binary, mutually exclusive categories “homosexual” and “heterosexual” indexed static matrices of sexual identity, desire and behaviour. Albert Reiss’s article, “The social integration of queers and peers” (1961), is considered the first empirical, sociological study to so pointedly drive a wedge between behaviour and identity. In interviewing delinquent boys and observing sexual meeting places, Reiss demonstrated that few defined themselves as homosexuals despite their routine participation in fellatio. To the boys, so long as their motivations were economic rather than sexual, they evade the homosexual identity moniker. One participant was quoted as saying,

> No matter how many queers a guy goes with, if he goes for money, that don’t make him queer. You’re still straight. It’s when you start going for free, with other young guys, that you start growing wings (Reiss, 1961, p. 103-104).

Reiss concluded that the sexual has no standing in social reality apart from the meanings given to it, which are negotiated through interaction.

The theorization of sexuality and gender as performance: The theory of gender and sexual performativity, most famously articulated by Judith Butler in Gender Trouble: Feminism and the Subversion of Identity (1990), has served as a cornerstone perspective in queer theory. In short, Butler posits the routine signification of gender belies its lack of a core ontological substance – in other words, there is no gender separate from its enactment. As well, these signifying practices are ordered in such a way as to reproduce hegemonic constructions of sex and gender. This perspective was to some extent prefigured by Meadian interactionists, who viewed the self as inexorably bound to society, as well as by dramaturgical proponents, who employed the metaphor of theatre to undermine sexual and gender essentialism. Erving Goffman first advanced the dramaturgical model in The Presentation of Self in Everyday Life (1959). Therein he framed social life as a series of bounded performances and used theatrical terms – settings, cast, audience, staging, masks – to describe human behaviour. Though sociologists debate whether Goffman believed in the existence of a "true" self behind the masking rituals he described (Tsëelon, 1992; Schwalbe, 1993), his own writings seem to suggest he at least took the notion to be problematic:

> A correctly staged and performed scene leads the audience to impute a self to a performed character, but this imputation—this self–is a product of a scene that comes off, and is not the cause of it. The self, then, as a performed character, is not an organic thing that has a specific location, whose fundamental fate it is to be born, to mature, and to die; it is a dramatic effect arising diffusely from a scene that is presented, and the characteristic issue, the crucial concern, is whether it will be credited or discredited. [emphasis original] (Goffman, 1959, pp. 244-245.)

Goffman's work was essential to later sociologists, like Humphreys (1970) and West and Zimmerman (1987), who framed sexuality and gender as being accomplished through routine but fluid interaction.

Those versed in queer theory may find the abovementioned propositions to be of striking familiarity. Queer theory emerged in the late 1980s in response to what was perceived as a misguided effort by then-well-institutionalized "Lesbian and Gay studies" to recover the "true" and stable gay and lesbian subject from its historical misrepresentation in psychology and medicine (Green 2007). At the risk of undermining queer theorists' efforts to resist disciplinary typification (and, in turn, presumably, rigidification), I borrow a set of theoretical "hallmarks" from Stein and Plummer (1994, pp. 181-182) for the purpose of comparison with symbolic interactionism:

> 1) a conceptualization of sexuality which sees sexual power embodied in different levels of social life, expressed discursively and enforced through boundaries and binary divides; 2) the problematization of sexual and gender categories, and of identities in general. Identities are always on uncertain ground, entailing displacements of identification and knowing; 3) a rejection of civil-rights strategies in favor of a politics of carnival, transgression and parody which leads to deconstruction, decentering, revisionist readings and an anti-assimilationist politics; 4) a willingness to interrogate areas which normally would not be seen as the terrain of sexuality, and to conduct "queer" readings of ostensibly heterosexual or non-sexualized texts.

Green (2002, 2007) situates the former two hallmarks into a particular strain of queer theory he refers to as “radical deconstructionism” and the latter two into “radical subversion”. Radical deconstructionism, inspired by French post-structuralists (particularly Foucault (1984)), regards scientific knowledge of sexuality as a discursive production that serves the interests of the powerful – sexual categories are cultural fictions that discipline the body and psyche. Radical subversion, on the other hand, commits itself to resisting and disrupting the normalizing tendencies of the dominant sexual order, which are thought to pervade every aspect of social life; nonheteronormative practices and subjects play a crucial role in this regard.

As the preceding discussion illustrates, the deconstructionist conception of identity considered so fundamental to queer theory is identifiable across multiple strains of pragmatist and interactionist thought spanning over a century, from James’ (1890) plurality of “social selves”, to Cooley’s (1902) “looking-glass self”, to Mead’s (1934) “I and me” dialectic, to

Goffman's (1959) performed selves. These works share with queer theory "the rejection of a presocial, prelinguistic self, and a subsequent elaboration of the "problem" of identity. In these formulations, the act of making sense of the self is simultaneously a moment of its constitution." (Green, 2007, p. 30) Moreover, though symbolic interactionism has not attributed to language as determinative a role in constituting the subject as poststructuralist approaches, labelling theorists in particular have similarly contended with the joint roles of knowledge and power in producing marginal subjects and broader systems of social stratification (Green, 2007). Finally, interactionism's commitment to "valorize villains and outsiders as heroes and side with the downtrodden little people" (Denzin, 1992, p.2) mirrors queer theory's eye towards the radical potential of marginal subjects to subvert the legitimacy of ideological systems of domination.

Epstein (1994) cautions those eager to absorb the teachings of queer theory whilst glossing over its sociological heritage that they risk "reinventing the wheel", and moreover, cordon themselves off from the distinctly sociological investigative approaches that would be of import for reaching a more comprehensive understanding of human sexuality. This is made all-the-more apparent when considering the limitations of queer theory, by now well established. Among the framework's most prominent critics is Steven Seidman (1993, p. 132), who asserts poststructuralism's penchant to reduce social practices to acts of representation negates their materiality: "Insofar as poststructuralists narrow cultural codes into binary signifying figures, insofar as discursive practices are not institutionally situated, there is an edging toward textual idealism." He also notes that in focusing only on the disciplinary and regulatory effects of identity constructions, queer theorists overlook the historical and contemporary importance of identity-based politics.

Green (2002) expands critiques of queer theory beyond reference to its theoretical coherence and political utility and into its ability to explain concrete historical and empirical cases. He argues that despite the theoretical appeal of rupturing classifications of sexual identity, there exists a large body of empirical gay and lesbian scholarship that cannot be satisfactorily explained through radical deconstructionism. Esther Newton's (1993) ethnography of lesbian communities in Cherry Grove, Fire Island is cited to illustrate how sexual orientation, more than simply being a disembodied discursive production, is a form of identification taken up by individuals in response to institutions (e.g., marriage and kinship) and informal structures of social control (e.g., daily interactions with heterosexual peers). Though the lesbians of Cherry Grove were divided along generational, class and ethnic lines into several distinct sub-groups, their co-presence on the island reflected a shared self-concept that emerged from the heterosexist organization of their societies. Green asserts that the socially-constructed origin of sexual identity does not in itself justify queer theorists' overlooking its institutional character or material significance. Indeed, the very pioneers of social constructionist theory Berger and Luckmann (1966) suggested that shared typifications of worldly phenomena and joint action are facilitated by institutionalization and stabilized through mechanisms of social control. The notion that shared interpretations contribute to an obdurate reality was articulated even earlier by William and Dorothy Thomas (1928, pp. 571-572), who are famously quoted as saying, "If men [sic] define situations as real, they are real in their consequences."

Despite its shortcomings, queer theory has offered several edifying critiques of canonical sociology that would make it an intellectually hazardous venture now, as we enter the third decade of the new millennium, to simply reanimate symbolic interactionism for the study of sexuality without updating some of its theoretical assumptions. For instance, Valocchi (2005) notes how sociologists' tendency to treat sex, gender, and sexuality as the fundamental units of empirical analysis (e.g., when investigating sex differences in earnings, or comparing gay and straight men's experiences in the workplace) eschews consideration for how the categories themselves are implicated in any observed inequalities. In overlooking how social categories are constructed sociologists implicitly reinforce binary conceptions of male/female, masculine/feminine, and homosexual/heterosexual as well as the normative alignments across them. Sociologists are also charged with under-acknowledging the pervasive influence of sexual and gender binaries in all aspects of social life, instead limiting their attention to how they manifest as an identify formation, much in the same vein as race and ethnicity.

It is apparent that an interactionist sociology of sexuality, far from being obsolete, is well suited to addressing some of queer theory's most glaring empirical blind spots, but at the same time, would be remiss to neglect those queer insights which have so profoundly moved the needle in identity scholarship. But how best to conduct research in a way that is sensitive to the meritorious aspects of both perspectives? In a separate article Green (2007) argues that symbolic interactionism and queer theory rest on incommensurable epistemological assumptions that make any attempts at outright synthesis untenable. The two perspectives are said to inherently be at odds with respect to how they make sense of what Green terms the "performative interval". The performative interval can be understood as a unit of analysis that "marks the distance between doing and identity whereby the doing (e.g., doing woman) represents practice and identity (e.g., female) an interior semblance of self." (Green, 2007, p. 32) For both interactionist sociology and queer theory the performative interval serves as a heuristic device that underscores the non-equivalence of action and self. However, whereas interactionists treat the performative interval as an empirical starting point of investigations into how individuals, in pursuit of a more-or-less stable interiority, attempt to bridge the divide between acts and the identities they signify, queer theorists focus on the disjuncture between these poles to evince a discursively-constituted self, devoid of such an interiority. This distinction has important methodological implications. To the extent that queer theory commits itself to identifying the failures of identity performance it must maintain a "subjectless critique". Therefore, to study subjects from their own self-described positions, as interpretive sociologists often do, would reify rather than deconstruct social categories and run contrary to queer theory's stated aims:

> Hence when sociologists attempt to make queer theory accountable for subjects and selves or, conversely, when queer theorists attempt to bring in social contingency to the queer theoretical project, so queer theory is rendered untenably oxymoronic—a casualty of its own deconstruction. (Green, 2007, p. 42)

Green submits the study of subjectivities and selves, then, should remain the dominion of interactionist sociology. However, this is not to advocate discarding queer theory and summarily returning to a sociological essentialism – queer theory's insights into how sexual and gendered selves are influenced by language, culture, politics, technology, etc. make it a valuable accompaniment to interactionist approaches. Rather, the two serve better as separate but complementary intellectual strands that demand reflexive awareness of each other.

How to achieve this theoretical balancing in practice is something that remains under-specified in the literature. In my own work, it proceeded in the following manner. Wherever sexuality and sexual identity figured into data collection and analysis procedures – such as when deciding how to define sexuality-based inclusion/exclusion criteria, or theorizing how sexual identity comes to bear on experiences of technology use or body consciousness – due care was taken to abide by the basic premises of interactionism, including notions of social construction;

historical and geographic contingency; and non-equivalence of behaviour, affect, and identity. For example, this took the form of adopting broad inclusion criteria based on behavioural, affective, and identificatory dimensions, as well dismissing a priori essentialist interpretations, e.g., that something inherent to same-sex attraction predisposes men to appearance preoccupation and/or dissatisfaction. While maintaining a forthrightly sociological ontology of the sexual subject, I also, however, took heed of several more "practical" directives from queer theory, including: (1) challenging assumed relationships between sex, gender, and sexuality; (2) attending to the nonnormative alignments of these categories; (3) resisting the tendency to essentialize identity or conflate it with sexual and gender practices; (4) broadening an understanding of power to include identity and other discursive productions; and (5) treating subject positions as both performed (i.e., enacted and ratified by onlookers) and performative (i.e., constituted, at least in part, by their enactment) (Valocchi, 2005). Thus, in order to retain a certain level of theoretical coherence I espouse what might be described as a decidedly queer-inflected, but not integrated interactionist conceptualization of sexuality and sexual identity.

With the above having been said, a comment should be made about the recurrent use of the term "sexual orientation" throughout the dissertation, given the debates around its acceptability. In some circles, sexual orientation as a concept is seen as regressive for invoking a natural, biological, unlearned, and unchanging sexuality (Freund, 1974). Many of these same critics have championed sexual identity as a conceptual replacement, which they see as being more relationally grounded, rooted in communities, and thus more appropriate for alliance building and social action (Vance, 1989). As van Anders (2015) notes, however, there are issues with treating sexual identity as simply the more progressive, constructionist version of sexual orientation. Perhaps most notably, the two have rather distinct meanings. Traditionally, sexual orientation has been used to refer to a person's sexual interests, approaches, attractions, and fantasies, while sexual identity refers to self-conceptions, labels, communities, and social positioning. One concept cannot simply be used in place of the other because there is no necessary relationship between their constituent constructs, as Reiss's (1961) study of self-identified heterosexual boys who routinely perform fellatio underscores. Hence, sexual identity fails to capture the gamut of phenomena defining of erotic life. Some have thus opted to retain and reclaim sexual orientation as an umbrella term encompassing dimensions of affect, desire, identity, and behaviour (Ahmed, 2006; van Anders, 2015). Despite potential concerns about reviving a sexual essentialism, there is nothing intrinsically semantic about the term "sexual orientation" that necessitates its construal as innate, static, and/or essential. In other words, the concept need not presuppose anything about its genesis – i.e., to what degree it is social or biological. Orientation is invoked just as often as simply a set of interests without determinism or permanence (van Anders, 2015). It is this connotation which I adopt as well.

1.3.3 Reflexive embodiment

The included works are also unified in their preoccupation with matters concerning the body – among other things, how individuals conceive of their bodies, the emotional states aroused by these bodily self-conceptions, and the array of bodily practices prompted by these feelings. As with the self by and large, the body's onto-epistemological status is not a foregone conclusion. There exist numerous competing schools of thought regarding what the body is, phenomenologically speaking, and the degree to which the body's corporeal features shape, and are shaped by, social forces (Shilling, 2012). With respect to how bodily self-consciousness is theorized, this thesis, when taken as a whole, exhibits some degree of self-contradiction. Studies one and two are tacitly underpinned by a clinical psychological conceptualization of body image, while study four overtly employs an interactionist theory of reflexive embodiment. Again, this discrepancy is largely an artefact of shifts in my own thinking with exposure to a broader range of theory. In what follows, I will describe the basic tenets of these two different perspectives and justify my gradual eschewing of the former for the latter.

Historically, it has been clinical and psychological social psychologists who have most explicitly taken up the issue of bodily consciousness. Foundational to their work is the concept of body image, defined as “the picture of our own body which we form in our mind” (Slade, 1994, p. 497). Body image is typically examined in either perceptual or subjective/attitudinal terms. Perceptual assessments test an individual’s ability to accurately gauge their own corporeal dimensions. In this sense, body image is understood as the disparity between internal (i.e., cognitive) bodily representations and their external, objective referents. Subjective assessments, on the other hand, focus on reflexive, cognitive and affective self-evaluation – in other words, how one thinks and feels about their body irrespective of their degree of “accuracy.” Research involving subjective assessments generally understand body image as a precondition of body satisfaction, and in turn body- and appearance-related behaviours (Vannini & Waskul, 2006).

Psychological research and theory have played a pivotal role in elevating issues of body consciousness among researchers and the general public, most especially the psychiatric and psycho-somatic problems associated with negative states of awareness, such as depression, self-harming behaviour, and disordered eating (Vannini & Waskul, 2006). Nevertheless, these approaches continue to be plagued by a number of issues that limit their use in fully capturing the cognitive, affective, social, and interactive character of the body. Perhaps most fundamentally, the concept of body image itself is predicated on a number of dualistic assumptions, including dichotomies of body and mind, individual and society, and materialism and idealism, that have proven to be philosophically and empirically problematic (Vannini & Waskul, 2006). For one, these dualisms animate an individualist bias that pervades psychological conceptions of subjectivity. Vannini and Waskul (2006, p. 186) define individualism as a belief in "the original ontological and moral separation of individuals from one another and from the social. Such bifurcation of individual and society is then justified as a foundation of civic and human rights of self-determination." Psychology's individualist bias is evident in its view of human development as a life-long quest toward autonomy, understood as a healthy separation from the disruptive and constraining forces of other individuals and social structures. Although psychological research on body image takes into account the strength of these social forces on the individual, it sees as its ultimate objective providing persons the means to resist and liberate themselves from these forces, effectively making themselves the sole agent responsible for their own mental and physical wellbeing. This view of the individual who exists apart from but is acted upon by society is moreover criticized for casting persons as "psycho-cultural dopes" who passively internalize the influence of the social forces to which they are exposed, rather than active agents who can negotiate social meanings in light of their own beliefs, experiences and goals. The persistent neglect in psychology of reflexive introspection on the part of goal-oriented agents is best exemplified by the "crude behaviourism" that dominated prior to the cognitive revolution (Vannini & Waskul, 2006). Finally, by restricting its focus to mental constructions of the body, the concept of body image reinforces Cartesian notions of mind and body being of distinct ontological status. As a result, we are offered no way of explaining how the body itself can influence or "push back" against the meanings imputed on it, such as in cases of acute illness, weight gain, or visible signs of ageing, leaving us with an overly-idealistic or solipsistic view of bodily consciousness (Vannini & Waskul, 2006).

An approach to bodily consciousness that rectifies the above issues would be one that simultaneously acknowledges (a) the interpenetration of persons and societies, (b) the reflexive potential of social agents, and (c) the embodied nature of selves. A more sociological social psychological approach, specifically one guided by the symbolic interactionist tradition, is well-suited to this task. Among the various interactionist perspectives, Nick Crossley's (2006a) theory of "reflexive embodiment" offers an especially persuasive account of how individuals think about and act upon their embodied selves. He defines reflexive embodiment as

> the capacity and tendency to perceive, emote about, reflect and act upon one's own body; to practices of body modification and maintenance; and to 'body image'. Reflexivity entails that the object and subject of a perception, thought, feeling, desire or action are the same. (Crossley, 2006a, p.1)

Characterizing the relationship between selves and bodies as reflexive presupposes, foremostly, that "we are our bodies, nothing more and nothing less" (Crossley, 2006a, p.2). This view contrasts with the Cartesian notion that mind and body are distinct substances and that the essence of self lies in the mind. The Cartesian subject could not possibly be reflexive about its own embodiment because the body must make indications to itself, not the mind to the body, for reflexivity to occur (Crossley, 2006a). In viewing social agents as having selves qua bodies, this perspective corrects for cognitive and social psychology's disembodied solipsism, at once attending to how bodily meanings are negotiated in social networks and recognizing the potential for bodies to exercise their own material agency vis-à-vis such meanings.

Crucial to the analyses in this thesis is Crossley's explanation of how, exactly, the embodied agent reflects upon their own embodiment. Drawing on interactionist theories of self, most notably the work of Cooley (1902) and Mead (1934), his central argument is that bodily self-awareness is made possible by adopting the real or imagined perspective of others. A preliminary discussion of theories describing the limits to internal mechanisms of self-perception will clarify why this is necessarily so. According to Leder's (1990) "absent body" thesis, under typical circumstances people are unconscious to the bodily sensory-motor system that allows them to perceive and interact with their surrounding environment. It is true that environmental awareness is constituted of physical sensations that result from contact between the actor's body and the world. However, it is not bodily sensations themselves that we ordinarily experience through this process. Rather, by way of sensations we experience the world around us. Because humans are limited in the amount of sensory information they can mentally process at any given time, focus must usually be directed at the environment to the neglect of the body. There are, of course, exceptional cases where the body can momentarily slip into focus or become the object of extended preoccupation. This occurs when the body does not perform as expected, as in cases of transient dysfunction (e.g., tripping, yawning, flatulence), illness, and ageing. When the body "dys-appears" in this manner, the foreground and background of everyday perception switch (Crossley, 2006a; Leder, 1990).

Leder's absent body thesis can be elaborated by revisiting some of the claims made in an earlier monograph by Merleau-Ponty (1962), upon which Leder's own work draws. Like Leder, Merleau-Ponty depicts the body as something that projects one into the world of experience but ultimately remains in the background of human consciousness. He extends this point, however, by observing that there are a number of properties of the body-as-object – i.e., the body viewed from the external position of observers – that do not register within the perspective of the body-as-subject. We lack firsthand conscious awareness for many of our bodily dimensions because there is nothing within our own embodied experience to contrast with our current state. We are unable to get a full sense of what it is “like” to have two eyes or two legs (in other words, how having two eyes or legs structures our experience), for example, unless we were to lose one or both or inquire into the experiences of an amputee or someone with monocular blindness. Echoing Mead, he argues that to experience these properties or any other embodied aspects of self, one must adopt an external point of view towards their self – specifically, “through the eyes of others” (Merleau-Ponty, 1962, p. 434).

It has thus far been established, by virtue of the fact that the body lacks the internal sensory- perceptive mechanisms to be fully aware of itself, that reflexivity must come from adopting the perspectives of others toward oneself. Crossley (2006a) suggests that Mead’s (1934) philosophy of mind, self, and society offers a useful way of conceptualizing how role-taking actually figures into bodily self-awareness. According to Mead, the isolated, pre-social self is a myth; individuals are “always already” enmeshed in social relations and networks. We are able to stand over and above ourselves and see ourselves, including our body, as an object, when and to the extent that we adopt the perspective of specific and generalized others. In so doing, we become an object for ourselves as we are for others. This process splits the agent into two ‘phases’ that Mead calls the ‘I’ and the ‘Me’. By reflecting upon their self the agent is simultaneously a reflecting subject (the I) and an object of reflection (the Me) (Mead, 1934).

That reflexive embodiment is achieved through role-taking implies that our bodies and attendant bodily practices can be attributed various meanings in accordance with the different others with whom we interact and social situations we enter. Insofar as Mead’s theory underscores selves’ reliance on the social interactions in which they are embedded, it resembles other prominent theories of embodiment that posit self-concept and action as resulting from internalization of behavioural prescriptions and/or constraints from social structures, including

Foucault’s (1979; 1984) theory of disciplinary power, Elias’s (1994) civilizing process, the fashion-beauty complex (Bartky, 1990; Bordo, 1993) and the consumer culture thesis (Baudrillard, 1998). In certain respects, all of the aforementioned are examples of generalized others whose views as to what constitutes “acceptable” embodiment are adopted by the agent to gauge their standing in the world and devise appropriate lines of bodily action. However, whereas these approaches view social structures as exerting a more-or-less totalizing influence on persons’ thoughts and behaviours, Mead adopts a decidedly less deterministic stance. As social agents with the capacity to make indications to themselves, humans are able to engage consciously and strategically with the meanings, norms and ideals they encounter in social life – to select, inspect, challenge, and even transform them in light of the situation, as Blumer (1969) suggests. Even in cases where meanings are enforced by threat of legal or social sanction, they are brought into critical dialogue with other meanings that are held “within” the individual. Crossley (2006a, p. 90) thus concludes,

> In an interesting way then, Mead emphasizes agency and reflexivity, like Giddens, but combines this with an equally strong emphasis upon social embedding, akin to that of Foucault and Bourdieu. ... Agents are multiply socially embedded, for Mead, and these relations shape the agents’ reflexivity. They do not necessarily subordinate the agent, however. They are ‘voices’ in reflexive and potentially critical conversations.

In sum, the interactionist theory of reflexive embodiment hinges on three premises which the included works implicitly or explicitly espouse: (1) social agents are embedded in a range of networks that embody and enforce social norms; (2) relations with others constitute the foundation of human reflexivity; (3) the relational origin of reflexivity is theorized in dialogical terms (Crossley, 2006b).

1.3.4 Technology

One final matter of mutual interest among the component articles of this thesis is that of technology – how certain of its many diverse manifestations (namely Internet-enabled information and communication technologies) influence various social and psychological processes (including self-presentation and bodily self-conceptions). Implicit to questions of this nature are assumptions of how human and material agencies relate to one another, including the degree to which the properties we observe of material artifacts like networked technologies are intrinsic to them or are constituted by interpretation and collective acts of meaning-making, as well as the level of autonomy humans and non-human artifacts have relative to one another (Faraj & Azad, 2012; Leonardi, 2011). Of central priority to me was that any general theory of technology that I adopt comport with the basic principles of symbolic interactionism, those being interactive determination, symbolization, emergence, and human agency. In the following paragraphs I weigh some of the major competing perspectives and explain why a sociomaterialist, affordance-based approach was best aligned with my aims.

On the issue of technology's effect on human action and vice-versa, Schrock (2015) identifies two main opposing perspectives that have had the greatest currency across various disciplines. Medium specificity theory, which is favoured among computer scientists (e.g., McLuhan & Lapham, 1994), holds that the effects of technology on human action are immediate and uniform, and that human perception is influenced by technology, not the other way around. Faraj and Azad (2012) describe a similar position, which they label the "feature-centric approach" to the study of information technologies. Those who adopt the feature-centric approach view information technologies as bundles of "objective" features that exist independently of human perception. Social constructivism, on the other hand, is the approach favoured by social scientists of mediated technologies. The primary focus of constructivists is uncovering how social and cultural forces shape technology's development (MacKenzie, 1985). This perspective foregrounds human agency, arguing that any technology-induced societal change is ultimately reducible to the choices of users and developers (Boudreau & Robey, 2005).

These approaches, which occupy opposing extremes on the technological determinism-voluntarism continuum, each have significant shortcomings that limit their ability to interrogate the complex relationships between technologies and social practices. Faraj and Azad (2012) note that researchers whose work is guided by the feature-centric approach tend in their analyses to adopt the nomenclature of commercial vendors that categorize hardware and software into a series of product classes based on pre-defined parameters and functions. Consequently, they downplay the distinction between taken-for-granted features as articulated through product classes and categories-in-use that describe how individuals actually interact with technologies in situated contexts. That the same hardware/software can be perceived and used in different ways between individuals points to an additional issue with the feature-centric approach: the highly subjective and variable nature of what constitutes a feature. As there exist no universal definitions for a feature, it is difficult to decide which to analyze and at what level of detail. Indeed, one could suggest of any given feature that it is comprised still of finer, additional component features. This is referred to as the "infinite regress" problem. Griffith (1999, p. 476) explains:

> The concept of a feature, however, remains somewhat elusive. It is possible to examine some technology features at increasingly smaller (or larger) units of analysis ... For example, the personal digital assistant may take input from a stylus, the stylus may be plastic or metal, the plastic may be hard or soft, ad infinitum.

Though the constructivist approach addresses some of these issues by focusing on how humans make sense of and interact with technology in particular socio-cultural and historical contexts, it has similarly been criticized for minimizing the role of the technology itself in social change (Berg, 1997; Button, 1993).

Leonardi (2011) posits the problem with both perspectives lay in their attributing causal primacy to either users or technologies while downplaying the possibility of reciprocal determinism. A viable corrective, he suggests, is a sociomaterialist approach (e.g., Orlikowski, 2007) that recognizes the mutually constitutive relationship between human action and technology. From this perspective, human behavioural routines and technology are both seen as arising from the imbrication of human and material agencies. Leonardi (2009, p. 299) notes elsewhere,

> technologies are as much social as they are material (in the sense that material features were chosen and retained through social interaction) and [routines] are as much material as they are social (in the sense that social interactions are enabled and constrained by material properties).

In other words, because routines and technology are constituted by the same components, they can be seen as indistinguishable phenomena, ontologically speaking. Consider the similarities between a dating app (a technology) and a weekly scheduled speed dating seminar (a routine). Both arise from the actions of identifiable persons that crystallize or recur over time as to exhibit a degree of fixity. Both would dissolve were the human activity involved in their maintenance to be disrupted. And both are to some degree reliant on the capacities bestowed by matter – for dating apps, glass, circuitry, and batteries; for speed dating, a building, flyers, and bodies.

However, routines and technology differ empirically as a result of differences in how material and human agencies are imbricated. In some cases, human and material agencies might interweave in ways that create or change routines, while in others they may do so in ways that produce or alter technologies. The metaphor of imbrication provides several useful suggestions concerning how material and human agencies interact, including: (1) human and material agencies are capable of producing outcomes (routines or technologies) only when they are joined together; (2) the interdependence of human and material agencies does not negate their distinct characters; (3) by maintaining the distinction between human and material agencies, the imbrication metaphor asserts that while both people and technologies have agency, humans have the final say in how they will respond to a technology; (4) all interactions between human and material agencies produce an "organizational residue", that is, routines and technologies persist in the absence of their creators, and as people continue to use these routines and technologies they become proceduralized to the point that they are taken-for-granted as natural relations; (5) thus, past human-material imbrications will influence the way these agencies are imbricated in the present, though in a non-deterministic way (Leonardi, 2011).

What, then, decides whether the imbrication of human and material agencies will result in a change to routines or technologies? Leonardi (2011) argues that, ultimately, this comes down to individuals' experiences in attempts to reconcile their goals with the materiality of technology. Typically, perception of technological constraint will produce a sequence of imbrication that results in modifications to technology, while perception of affordance ultimately produces changes to routines. If the technology acts mostly as a hindrance, then the technology itself warrants changing; if it is useful, people will adapt to it.

Perception of affordance is thus the impetus for behavioural change with technology use. But what exactly is an affordance? The concept of affordance is defined differently across a number of disciplines, but generally speaking is used to describe what material artifacts allow people to do (Bucher & Helmond, 2017). Affordances were originally advanced as an ecological psychology theory by Gibson (1979) which aimed to explain how various species might perceive objects in their environment differently in light of the possibilities they offer for action. He explains:

> An affordance is neither an objective property nor a subjective property; or it is both if you like...It is equally a face of the environment [artifact] and a fact of behavior [action]. It is both physical and psychical [social]...An affordance points both ways, to the environment [artifact] and to the observer. (pp. 129-130)

Gibson's conceptualization of affordances highlights an interdependence between environment and organism such that the actionable features of an object depend on the characteristics of its perceiver. This perspective defines affordances as properties of the environment that are manifest or latent under different conditions. Others view affordances more relationally than attributionally. Stoffregen (2003, p. 124), for example, defines affordances as emergent "properties of the actor-environment system that determine what can be done." According to this definition, affordances are opportunities for action based on alignments between the environment and actors' characteristics and capabilities rather than inherent properties of the environment per se. Norman (2007) similarly contends that affordances, for all intents and purposes, do not exist unless perceived. Faraj and Azad (2012) maintain this relational line of thinking, defining affordances in the context of information technologies as "the mutuality of actor intentions and technology capabilities that provide the potential for a particular action" [emphasis in original], framing affordances not as an attribute possessed by actors or technologies, but an outcome of the relational dynamics between the two. The upshot of this is that the same technology can be perceived and acted upon differently depending on the user’s goals and abilities.

The benefits to examining technology-related social change through the lens of affordance instead of feature-centric or similar approaches are numerous. First and foremost, the affordance lens allows for high-level analysis of capabilities that technologies provide users in a way not restricted to any specific software/hardware or version (Ellison & Vitak, 2015). For example, a “tap” on Grindr is substantively different from a “like” on Tinder or “woof” on SCRUFF with respect to both its front- and back-end composition. Whereas a feature-centric approach would consider these all distinct and unrelated “functions” of their respective apps, an affordance approach would sensitize us to the common ways in which these elements align with user competencies and perceptions to make possible a certain line of action. In this case, it could be argued that all of the above afford users the ability to communicate attraction or interest in conversation with less effort, personal investment and/or risk than a personalized greeting. Additionally, since this type of analysis transcends any one particular technological form, iteration, or context of use, the findings produced may still be of theoretical importance even after the technologies have undergone dramatic change. Finally, as intimated above, the affordance lens enables us to acknowledge the materiality of technology without recourse to the deterministic language of “impact” on social practices (Ellison & Vitak, 2015).

To summarize, I have thus far detailed the theoretical assumptions that undergird the works included in this thesis, including those regarding the nature of selves and societies, sexuality and sexual identity, bodies and reflections thereupon, and technologies. In the next section I will describe the overall purpose of this thesis, the specific objectives of each of the included works, and the substantive links between them.

1.4 Overview of research objectives and interconnections between included works

The overarching purpose of this thesis is to investigate how use of certain popular Internet-enabled ICTs, including social media and LBRTDAs, influences bodily self-conceptions in GBMSM – a group who are not only particularly keen adopters of such technologies, but are disproportionately burdened by issues of body consciousness and maladaptive bodily behaviours. The effort is spread across multiple studies, each of which address more specific questions and/or particular facets of this broad phenomenon. Herein I will outline the objective(s) of each component paper and elucidate how each dovetails with the next.

Study one endeavoured to survey and extend existing theory, using a critical review methodology, to develop a theoretical framework that explains how networked technologies, including social media and LBRTDAs, impact GBMSM's bodily self-conceptions. To that end, it sought to answer the following questions: What pre-existing theories, models, and frameworks can explain the influence of social media and LBRTDAs on body image and weight and shape control behaviours among GBMSM? How do these theories, models, and frameworks conceptually relate to one another, and how might they be integrated into a single, comprehensive theoretical model? Individually and as constitutive elements of a broader, integrative framework, how well do these theories, models, and frameworks conform to and explain the existing empirical evidence base?

Study one, it bears emphasizing, is purely theoretical in nature – the resulting framework is arrived at entirely through *a priori* logical deduction rather than based on inductive generalizations from obtained empirical evidence. It is also worth commenting on the conditions of this study’s development, which was, in a sense, unplanned. Originally, it began simply as background research to better acquaint myself with the topic area and identify lacunae for future empirical investigation. However, as the review grew in scope, and the synthesis in sophistication, my coauthors and I came to see it as offering a substantial contribution to the literature in its own right. Nevertheless, it was still apparent that a fuller understanding of the problem would require grounding in and validating against lived experience. This was particularly true of GBMSM’s use of LBRTDAs and its body image-related impacts, which at that point (circa 2018) had received scant coverage in the literature. Hence, studies two through four involve primary collection of data and narrow their focus on ICTs to LBRTDAs in particular.

Study two sought through in-depth interviewing and thematic analysis to explore how Grindr, the most widely-used LBRTDA among GBMSM, influences body image, body satisfaction, and body-related behaviours. More specifically, it aimed to answer: (1) how Grindr use related to body image, body satisfaction, and weight and shape control behaviours in GBMSM in the Greater Toronto Area and surrounding regions in Ontario, Canada; and (2) how Grindr users’ identities, previous experiences, values, and positionality are implicated in the relationship between app use and body image, body satisfaction, and weight and shape control behaviours.

The results of study two identify multiple psychosocial mechanisms that underpin the relationship between LBRTDA use and body dissatisfaction, including weight stigma, sexual objectification, and social comparison. In analyzing these data, however, I also identified one additional social phenomenon of potential relevance, namely, the deliberate attempting to influence the impressions audiences form of oneself, or self-presentation. This concept was remarkably diffuse across the dataset, if largely tacit – indeed, to the point that it seemed almost to be a “common denominator” among the more explicitly-coded themes. Due to publishing constraints and for parsimony sake, I had to make the decision to leave this concept unexamined at the time. Of course, this provided an obvious direction for future research. I subsequently set out to investigate how self-presentation as such is implicated in LBRTDAs’ effects on users’ bodily self-conceptions. This would turn out to be a larger undertaking than I anticipated, however, as the current literature had yet even to work out how LBRTDAs shape self-presentation behaviour among GBMSM (or at least not to a level I thought satisfactory), much less the psychological consequences of such.

Thus, as a preliminary step, **study 3** employed thematic analysis of interview data to investigate how various elements of the social-technological ecosystem arising from GBMSM’s use of LBRTDAs, including affordances, communal common ground and the agent-structure dialectic, interact to shape users’ self-presentation behaviours. Having thus established the patterns and determinants of impression construction, I then went on to examine their effects on users’ bodily self-conceptions. Hence, **study 4** endeavoured to develop a theoretical framework grounded in empirical, interview-based data that explains how self-presentation on LBRTDAs influences GBMSM’s embodied self-conceptions.

1.5 Overview of methodology

This section will provide an overview of the methodological commonalities of studies two through four. Details on the execution of the methods can be found within each manuscript. This section focuses more on the rationale underpinning the choices in methods. Study 1 is excluded from these considerations because as a purely theoretical article, it lacks any kind of reproducible methodology for data collection and analysis – it relies entirely on existing theory and deductive reasoning to generate a line of argument. This is not to say, however, that study 1's execution was not deliberate or planned in advance. I will take the opportunity here at the outset to briefly describe the methodological approach to study 1 which was omitted from its publication on determination of superfluity.

Study 1 employed a critical review methodology. Like other review types, the critical literature review surveys, synthesizes, and describes a body of literature pertaining to a particular topic or series of topics. Characteristically, however, critical reviews extend beyond merely describing the current state of an existing body of literature (as with narrative and scoping reviews, for example) and includes, as its name suggests, a degree of critical analysis or similar novel conceptual contribution. This output often takes the form of a hypothesis or model (Grant & Booth, 2009). Since the aim of critical reviews is not to offer a comprehensive description of the current evidence base, they are rarely as structured in their approaches to literature searching, appraisal, and analysis as systematic reviews and meta-analyses. That said, while not systematic the literature review was intensive and exceptionally wide-ranging. It spans over 12 theories/hypotheses and a considerable portion of each of their respective evidence bases. Studies included in the review were retrieved from a combination of keyword searches of electronic databases (e.g., PubMed, JSTOR, Scopus, CINAHL, Google Scholar) and article reference lists. Literature retrieval was progressively refined with discovery of additional concepts and key terms. Consistent with other critical reviews, analysis focused on evaluating the conceptual contributions of included items rather than undertaking a formal assessment of methodological quality. The analytic work mostly took the form of scrutinizing the evidence base of the included theories to make a judgment of their plausibility as well as determining the theories' logical consistency with one another (e.g., whether theory x could be true if theory y was true).

The remaining sub-sections will focus on the methodological choices of studies 2 through 4, all of which are empirical in nature.

1.5.1 Epistemological position

Inevitably, with any study based on empirical collection and analysis of data, certain assumptions exist regarding the nature of that data – whether it reflects with some fidelity social reality, is a textual construction unto itself that demands scrutiny, or some combination thereof (Holstein & Gubrium, 1995). Traditionally, these views have been bifurcated between the camps labelled realism and idealism. Realists generally maintain that reality exists independently of human perception, and that this world that stands over and above sensory experience is one that can be known. Bunge (1993, p. 229) explains: "The ontological thesis of realism can be restated thus: there are things in themselves. Its epistemological companion can then be restated as follows: we can know things in themselves (not just as they appear to us)." Knowledge is thus understood as the passive act of observing atomistic events and their regularities, and the purpose of obtaining such knowledge is prediction.

Idealists, in contrast, maintain that reality is the active creation of the perceiving subject. Entities cannot exist separately from their identification because all entities stem from discourse (historically contingent systems of thought and feeling) (Fleetwood, 2013). Idealists borrow from the social constructivist notion that what are assumed to be social facts are active creations generated by "thought collectives" (or consensuses) which hold different and often mutually incommensurate views of the world. There are hence no "objective" truths to discover, no universal principles to unearth. In its most radical manifestations, idealism holds there are as many realities as there are conscious observers. Knowledge, therefore, is little more than rhetoric. It is not a means to achieving a fuller understanding of the "true" nature of things, but merely another discourse to deconstruct (Bunge, 1993).

At first blush, symbolic interactionist ontology might seem like a full-throated endorsement of idealism. However, the principle of interactive determination does not necessarily imply a discursive reductionism. That individual actions generate and sustain what we know as institutions or structures does not mean that their effects are purely mental phenomena. Indeed, exegeses of Blumer's texts characterize him as being staunchly opposed to supplanting Durkheimian structural sociology with a radical interpretivism (Dennis & Martin, 2007). Instead, he explicitly endorsed a "pragmatic" position that holds reality exists neither entirely within nor separate from human consciousness. The social world is framed as one of "everyday experience," but that nevertheless has an "obdurate character." To reject the *sui generis* nature of social structures while also attending to the way they are socially constituted is not to accept that organized patterns in social life are necessarily subjective, immaterial, "fake", malleable, or "open to arbitrary redefinition". Social reality as constituted by interaction is remarkably organized, stable and normative. These processes are not deterministic per se, but are very much constraining (Dennis & Martin, 2007).

Blumer therefore might be regarded a proponent of social realism – the notion that reality, while socially constructed, has a patterned character to it and produces tendencies that can be known (Fine, 1993). It is this perspective that aligns most with my own position and guides the present work. As far as methodological implications, Blumer (1969, p. 23) himself notes that such an ontology points to the need for an empirical science – a way of producing verifiable knowledge about human group life and conduct: "The proper picture of empirical science, in my judgment, is that of a collective quest for answers to questions directed to the resistant character of the given empirical world under study." Data, by extension, is seen as providing a window into the social world of the "real."

That the social world can to some degree be known furthermore implies that there are better and worse ways of going about doing so. Blumer's (1969, p. 46) favoured methodology is naturalistic investigation, which he defines as

> investigation that is directed to a given empirical world in its natural, ongoing character instead of to a simulation of such a world, or to an abstraction from it (as in the case of laboratory experimentation), or to a substitute for the world in the form of a preset image of it.

Naturalistic investigation is dually comprised of exploration and inspection. Exploration is a mode of data collection that involves developing a close familiarity with social worlds to which one is hitherto unfamiliar. It is flexible in that the researcher might shift the focus of their inquiry as they acquire additional information to develop a more comprehensive understanding. While exploration is not limited to any specific set of data collection and analysis techniques, its emphasis on gradual refinement lends it more to qualitative than quantitative approaches. Importantly, it is not enough simply to describe in a comprehensive and intimate way what is taking place – these phenomena must also be made sense of. To this end, inspection involves focused examination of empirical instances to uncover generic properties or relations. Here, as with data collection, there is considerable methodological flexibility. Blumer only cautions against theory application in the logico-deductive mode characteristic of quantitative research (use theory to set up a problem, convert the problem into sets of independent and dependent variables which represent concepts or categories, use precise data collection and analysis techniques to examine the relations between these variables, and use theory to explain the observed relations), as it does not elucidate the nature of the analytic elements of the social world or describe precisely in what manner they are related (Blumer, 1969).

1.5.2 Study design

Consistent with Blumer's and other "Chicago school" interactionists' recommendations, studies two through four employed a qualitative design – both in the sense that the data collected and analysed were non-numerical in nature. This was neither an arbitrary nor *a priori* choice. Qualitative methods were only decided on once they were determined to be the most effective means of addressing the research problems. This determination was informed by the "uncertainty reduction" model of knowledge accumulation, which Sofaer (1999, p. 1103) describes thusly:

> At the outset, there is uncertainty not only about answers, but about what the right questions might be; about how they should be framed to get meaningful answers; and about where and to whom questions should be addressed. As understanding increases, some of the right questions emerge, but uncertainty remains about whether all of the right questions have been identified. Further along, confidence grows that almost all of the important questions have been identified and perhaps framed in more specific terms, but uncertainty still exists about the range of possible answers to those questions. Eventually, a high level of certainty is reached about the range of almost all of the possible answers.

To put it another way, knowledge accumulation can be seen as the gradual elimination of "unknown unknowns" and amassing of "known knowns," in the (infamously ironic) words of former US Secretary of Defense Donald Rumsfeld. A corollary of this is that the types of questions posed and methods employed will depend on the current level of uncertainty. When a subject area is in its nascency and the number of "unknown unknowns" is high, research questions are likely to be open-ended and exploratory, thus warranting use of qualitative methods. As the relevant phenomena are demystified, questions become increasingly close-ended and focus more on validation and justification as opposed to discovery, thus warranting quantitative methods (Sofaer, 1999).

This reasoning can also be framed in terms of theory. Qualitative methods are called for when there is insufficient theoretical grounding for the phenomena in question – when concepts and their interrelations are inadequately specified, thereby precluding the deductive deriving of testable propositions (Frankfort-Nachmias & Nachmias, 2008). In the absence of such, qualitative methods can be useful for the *a posteriori* construction of theory – the generation of logically interconnected sets of propositions inductively from data. These propositions may later be verified through quantitative methods of hypothesis testing (Charmaz, 1996).

At the time when studies two through four were conceived, the states of their respective theoretical bases were such that answering the research questions would prove unfeasible through hypothesis testing. In the case of study 2, there were yet no theories or frameworks to explain how or why LBRTDA use affects body image. Such theories existed for social media, but because LBRTDAs have fundamentally different affordances and modes of use, it would have been imprudent to assume any certain degree of applicability. Likewise, for study 3 there was such scant scholarship on the online presentation of nonnormative sexual identity that there was little option but to make “bottom up” generalizations from empirical observation. To whatever degree the theoretical foundations of studies two and three were found lacking, this was even more so the case for study four, which is in some sense an empirical gestalt of its predecessors. Thus, for all the above qualitative methods were deemed the most fitting, if for no other reason than the impracticability of the alternative.

1.5.3 Data collection

Studies two through four all rely on in-depth interviewing for data collection, which symbolic interactionists have repeatedly identified as a useful means of naturalistic investigation (Carter & Alvarado, 2018; Stryker & Vryan, 2006). In-depth interviewing characteristically involves the researcher themselves as an instrument for data collection through interpersonal interaction. It takes advantage of the open-ended and freeform quality of dialogue to obtain "deep" information and knowledge – usually deeper than that obtained through surveys or focus groups, for example. Typically, this information concerns personal matters, such as self-conceptions, lived experience, values, and decisions (Johnson, 2001). In-depth interviewing has been viewed as a procedural approach to sympathetic introspection, a way to uncover the personal meanings that give form to people's worldviews and guide their actions. In this sense, it is a symbolic interactionist method par excellence (Carter & Alvarado, 2018).

However, interviews can be conducted in a variety of ways, and the many procedural differences to some degree stem from and reflect epistemological disagreements. For realists, the purpose of interviewing is to aggregate individual responses into statistical distributions so as to derive law-like generalizations regarding social phenomena. Doing so requires valid and reproducible results obtained only by tightly controlling the interview's inherent dialogic elements – interviews should be rigidly structured through the use of standardized questions posed by neutral, unbiased interviewers. In contrast, idealists regard the interview as a means to access individuals' subjective understandings of social phenomena. Because idealists see all knowledge as situated and perception dependent, the dialogic nature of interviewing is embraced rather than suppressed – the findings obtained from interviews are seen as the product of joint construction of meaning between participants and researchers. These findings, as well, cannot be validated against any kind of independent or objective reality, as reality itself is constituted by the individual (Smith & Elger, 2014).

Informed by a “weak form of constructivism”, critical (as well as, one could argue, social) realists use interviews to both understand informants’ interpretations of social phenomena and analyze the stable, perception-independent social structures that constrain and facilitate action, thereby deriving a more comprehensive account of reality:

> interviews provide one important basis for gaining access not only to the attitudes and emotions of informants but crucially to richly textured accounts of events, experiences and underlying conditions or processes, which represent different facets of a complex and multi-layered social reality. (Smith & Elger, 2014, p. 14)

Thus, although subjective experiences and their narrative accounts warrant investigative focus, these should not, according to critical and social realists, be taken to be a necessarily complete and/or accurate reflection of the processes that underlie reality or the obdurate structures that emerge from complexes of human behaviour. Participants’ accounts of reality should be scrutinized both in regard to their internal coherence and in relation to other sources, including prior evidence and other datapoints within the set. That accounts can differ in veracity also implies the dataset should not be treated as an amalgam of discrete but equally valid narratives. Participant meanings are treated as significant and to some degree constructive of reality, but also fallible.

The semi-structured interview has been elevated as the form that best embodies the assumptions of social/critical realism, and thus the one which I rely on for studies two through four (note that study 3 uses the label “narrative interviewing”, which can be considered a sub-variety of semi-structured interviewing (Anderson & Kirkpatrick, 2015)). By definition, all forms of semi-structured interviewing involve a line of questioning that is to some degree prepared in advance. This often involves the use of an interview guide designed systematically to broach topics of interest, usually by way of gently-guided questions invoking broad themes interposed with probes designed to elicit more specific responses. It is because the semi-structured interview is only partially scripted that interviewers are able to adapt their approach on the fly to pursue emerging leads and elicit the fullest and most incisive responses from the interviewee. This may include modifying the style, pace and ordering of questions, eliminating questions or introducing new ones (Qu & Dumay, 2011). As well, the structure and content of this interview format is often influenced by existing theory, which offers sensitizing concepts that provide initial but tentative directions for inquiry. For critical and social theorists, existing theory is also useful for establishing the reliability of participant responses – it alongside other participants' views can provide a frame of reference to evaluate how well any one participant apprehends certain obdurate features of social reality (Smith & Elger, 2014).

1.5.4 Data analysis

Data analysis proceeded in roughly the same way in studies two through four and adhered mostly to what is commonly considered the standard approach to qualitative coding (Charmaz et al., 2018). Those standard procedures will thus not be elaborated on here – for details, see the specific studies. There is, however, one major point of departure from convention that requires justification, namely, the integration of extant theory over the entire course of analysis. Glaser and Strauss (1967), whose prescriptions for grounded theory have shaped myriad qualitative methods more broadly, originally argued explicitly against engaging with existing literature prior to data collection, their rationale being that doing so presents the risk of "contaminating" the research process by unduly colouring researchers' assumptions and interpretive schemas. This has resulted in a general aversion to theory application, even during analysis, in some qualitative research circles.

Yet, this position has been criticized on a number of grounds. First, the notion that any researcher can undertake a study with no prior knowledge or ideas regarding the substantive area, particularly in one's own domain of expertise, is considered unrealistic. Clarke (2005, p. 13, paraphrasing Elkins, 2003) argues, "There is actually "something ludicrous about pretending to be a theoretical virgin"." Second, the assumption that exposure to theoretical concepts will invariably lead to their being imposed on the data underestimates researchers' ability to reflect critically on how theory shapes their thinking (Urquhart, 2007). Finally, Glaser and Strauss's concern with theoretical preconceptions "biasing" the perspective of otherwise neutral and detached researchers reflects a positivist or realist epistemological stance that assumes real-world "truths" can be unproblematically extracted from participants.

There are other, pragmatic reasons for defying to distance oneself from the existing literature. Engaging with the literature at the outset can: provide a cogent rationale for a study and justification for adopting a specific research approach (McGhee et al., 2007); ensure the study has not already been done (Chiovitti & Paran, 2003); highlight pertinent lacunae in the present knowledge base (Creswell, 1998); reveal how the phenomena in question have been studied to date (Denzin, 2002); provide "sensitizing concepts," (Blumer, 1969) or broad terms without definitive characteristics that offer initial but tentative directions for data collection and analysis (Charmaz et al., 2018; McCann & Clark, 2003); and avoid conceptual and methodological pitfalls (McGhee et al., 2007). Taken together, Dunne (2011) views it as ill-conceived to sacrifice the many potential benefits of engaging with the literature based on a fear of external information impinging upon the research – a threat that thus far has been inadequately substantiated.

Nevertheless, to ensure critics' fears of existing theory pigeonholing the data are not realized, the literature review and analyses for the included works adhered to Thornberg's (2012) multiple "data sensitizing principles," including theoretical agnosticism (treating extant theories as provisional, disputable, modifiable, and disposable and directing focus to their limitations); theoretical pluralism (considering and comparing different theories so as to maintain a critical distance towards each of them); theoretical sampling of the literature (in a manner akin to theoretical sampling of participants, re-engaging with the literature after an initial broad review based on concepts and ideas emerging throughout the analysis); and staying grounded in the data (engaging in constant comparison between data, codes and theoretical concepts, and only applying theoretical codes that have "earned" their way into the analysis).

Having established their relevance within a broader program of research and common theoretical and methodological assumptions, we now turn to the component studies of this thesis themselves as they were originally reported in article form.

Chapter 2. Study I

Citation: Filice, E., Raffoul, A., Meyer, S.B., & Neiterman, A. (2020). The impact of social media on body image perceptions and bodily practices among gay, bisexual, and other men who have sex with men: a critical review of the literature and extension of theory. Sex Roles, 82, 387-410.

Abstract: Recent evidence indicates that interactive media-based web technologies, such as social networking sites, have an appreciable effect on users' perceptions of and attitudes toward their own bodies, as well as resultant weight and shape control behaviours. However, little research has been done to investigate whether social media differentially influence gay, bisexual, and other men who have sex with men, who are known to be at increased risk of body image disorders compared to their heterosexual counterparts. The current paper aims to address this gap by surveying and extending existing theory, using a critical review methodology, to derive a provisional theoretical model that explains how social media influence body image and weight and shape control behaviours of sexual minority men in particular. Our proposed model serves as an extension to the transactional model of social media and body image concerns, which includes additions to individual vulnerability factors (perceived self-discrepancy, gender nonconformity, minority stress) and psychosocial mediating processes (sexual objectification, sociocultural processes, online disinhibition). We conclude by identifying gaps in empirical evidence that would lend support to our proposed pathways as well as additional directions for future research.

A growing body of literature suggests that interactive media-based web technologies, such as social networking sites, have a measurable impact on users' perceptions of and attitudes toward their own bodies, as well as resultant weight and shape control behaviours (Holland & Tiggeman, 2016; Mingoia, Hutchinson, Wilson, & Gleaves, 2017). Thus far, however, most research has focused on girls and young, heterosexual White women and little work has been done to understand how social media influence other populations. Our focus is on extending pre-existing theory to elucidate how social media may differentially impact gay, bisexual, and other men who have sex with men (GBMSM) who are at risk of body image-related issues.

2.1 Body Image among GBMSM

Until the early 1990s, research on body image perceptions and bodily practices focused predominantly on women, who are disproportionately at risk for body image disorders when compared to men (Bordo, 1993; Furnham, Badmin, & Sneade, 2002; Muth & Cash, 1997). For the most part, this research was based on samples overwhelmingly comprised of heterosexual women and/or did not collect any data pertaining to sexual orientation. More recent work focusing on men has shown that GBMSM display risk levels that not only exceed those among heterosexual men, but approach levels observed among women (Conner, Johnson & Grogan, 2004; Morrison, Morrison, & Sager, 2004).

Studies assessing aggregate disordered eating symptoms have found that sexual minority men and women (i.e., those who identify as gay, lesbian, bisexual, two-spirit, queer or otherwise not heterosexual) report greater levels of eating disorder symptomatology than their heterosexual counterparts, although disparities across men are more consistent (Calzo, Blashill, Brown, & Argenal, 2017). Purging behaviour (e.g., self-induced vomiting or laxative misuse for the purpose of weight loss) is reported 3 to 16 times more frequently by GBMSM than by heterosexual men (Matthews-Ewald, Zullig, & Ward, 2014; Watson, Adjei, Saewyc, Homma, & Goodenow, 2017). GBMSM are also more likely to report fasting (i.e., not eating for extended periods of time) (Watson et al., 2017), dieting to lose weight (Matthews-Ewald et al., 2014), and using diet pills for weight loss (Austin, Nelson, Birkett, Calzo, & Everett, 2013; Matthews-Ewald et al., 2014; Watson et al., 2017) than heterosexual men, but findings concerning disparities in the use of dietary supplements (e.g., creatine) or drugs (e.g., anabolic steroids) for muscle building are inconclusive. In one study, sexual minority adolescent males were found to be 5.8 times more likely than their heterosexual counterparts to report lifetime anabolic steroid misuse (Blashill & Safren, 2014), whereas another study found no statistically significant association (Calzo, Sonneville, Scherer, Jackson, & Austin, 2016). Moreover, rates of disordered weight and shape behaviours may be especially elevated among GBMSM who are racial/ethnic minorities. Survey data from high school students revealed that 41.9% of 51 African-American bisexual adolescent males reported diet pill use compared to 11.4% of 76 White bisexual adolescent males (Austin et al., 2013).

2.2 Use of Social Media

Exposure to commercial mass media, such as broadcast television, magazines, and internet-based advertising, is linked to body dissatisfaction and disordered eating (for meta-analyses, see Grabe, Ward, & Hyde, 2008; Groesz, Levine, & Murnen, 2002; Levine & Murnen, 2009; Want, 2009). However, empirical and theoretical research has been slow to adapt to the changes ushered by user-generated interactive web technologies. Global media consumption through television, radio, newspapers and magazines has decreased markedly since 2010, whereas mobile internet use in particular has skyrocketed from 9.8 minutes per day in 2010 to a forecasted 112.9 minutes per day in 2018 (Austin, Bernard, & Hutcheon, 2016). According to data obtained from a nationally representative sample, a majority of U.S. adults now use social networking sites, with 73% and 68% reporting at least some use of YouTube and Facebook, respectively. Most (94%) individuals ages 18–24 years-old report some form of social media use, and a majority of users for several platforms (e.g., Facebook, Snapchat, Instagram) visit the site at least once daily (Smith & Anderson, 2018). Indeed, GBMSM may use social media to an even greater extent than the general population. Although data describing patterns in 2SLGBTQ+ (Two-spirit, lesbian, gay, bisexual, trans, queer, and other diverse sexual and gender identities) populations' media engagement are scant, one study has found that compared with heterosexual respondents, a greater proportion of lesbians, gay men, and bisexuals reported having a social networking account (Seidenberg et al., 2017).

GBMSM display unique patterns and motivations for social media use that stem from their collective history of cultural marginalization and systemic persecution. Many use geosocial networking (GSN) apps, which employ global positioning system technology to connect users based on physical proximity for chat, dating, or sex (Grosskopf, LeVasseur, & Glaser, 2014). Like the "handkerchief code" used by pre-digital era gay men to locate casual sex partners, GSN apps allow users to communicate their sexual or romantic interests to potential partners while minimizing their risk of experiencing homophobic harassment or violence (Gudelunas, 2012). Several of these apps have been developed to target specific sub-communities, identities, and sexual interests among GBMSM, including Grindr, Jack'd, Scruff (for men attracted to facial and body hair), GROWLr (for the "bear" community), and Recon (for the "leather" and general fetish community) (Grov, Beslow, Newcomb, Rosenberger, & Bauermeister, 2014). GSN app use is remarkably widespread among GBMSM; a recent study of 3,105 MSM (men seeking sex with men) from diverse ethno-racial and socioeconomic backgrounds revealed that 78.2% of the sample reported some or frequent use of general dating websites and apps. The most frequently used app was Grindr, with 60.2% of participants reporting some or frequent use, followed by Adam4Adam (44.1%), Jack’d (35.6%), and Scruff (34.3%) (Badal, Stryker, DeLuca, & Purcell, 2018).

2.3 Current Gaps in the Literature

Despite social media’s pervasiveness and central role in the social activity of GBMSM in particular, little research has been done to investigate their impact on body image disturbance and other adverse health outcomes that disproportionately affect this population. A small but growing body of research has focused on social media’s association with HIV-risk behaviours (Goedel & Duncan, 2016; Landovitz et al., 2013), intimate partner violence, and substance abuse (Duncan et al., 2016) among GBMSM. In contrast, we only identified one study that investigated the links among social media, body image, and weight and shape control behaviours in GBMSM (Griffiths, Murray, Krug, & McLean, 2018).

In the current paper, we aim to address this gap by surveying and extending existing theory, using a critical review methodology, to derive a provisional model detailing the impact of GSN apps (and social media more broadly) on body image-related outcomes and applying specifically to GBMSM. To that end, we seek to answer the following questions: What pre-existing theories, models, and frameworks may be used to explain the influence of social media on body image and weight and shape control behaviours among GBMSM? How do the aforementioned theories, models, and frameworks conceptually relate to one another, and how may they be integrated into a single, comprehensive theoretical model? Individually and as constitutive elements of a broader, integrative framework, how well do the aforementioned theories, models, and frameworks conform to and explain the existing empirical evidence base?

2.4 Class I Theories—Body Image Disturbance Etiology

2.4.1 Self-Discrepancy and Escape Theory

Self-discrepancy theory proposes that a range of adverse psychological outcomes result from the interactions between various representations of self. Its main premise is that the self is divided into several distinct domains. These include (a) the actual self, which reflects an individual's perception of their own characteristics and does not necessarily correspond to any objective measures; (b) the ideal self, or a series of attributes an individual aspires to possess or embody; and (c) the ought self, or a series of attributes an individual feels obligated to possess. Actual, ideal and ought selves can be defined either from one's own perspective or from the perspective of others (Higgins, 1989). Subsequent revisions to Higgins' (1989) original theory have included additional domains of the self, such as future selves (individuals' perceptions of what they might be) (Hoyle & Sherrill, 2006) and feared selves (attributes individuals wish not to possess but fear they might) (Carver, Lawrence, & Scheir, 1999; Markus & Nurius, 1986). It is thought that perceiving a discrepancy or incongruence between one's actual, ideal, and ought selves results in various emotional outcomes depending on how the selves interact with one another. Perceiving a discrepancy between one's actual and ideal selves elicits feelings of dejection, such as dissatisfaction and depression. A perceived discrepancy between one's actual and ought selves, on the other hand, may yield agitation-related emotions, such as anxiety and guilt (Vartanian, 2012).

Self-discrepancy theory is relevant in the context of body image because ideal selves are in large part prescribed by cultural norms that define standards of physical attractiveness. Body-related self-discrepancies occur when one feels that they fail to embody those standards that are unrealistic by design. Theorists postulate these perceived discrepancies, and the emotions they arouse, motivate individuals to engage in behaviours they believe will reduce the discrepancy, including weight and shape control behaviours for body-related self-discrepancies (Vartanian, 2012). Heatherton and Baumeister (1991) expound on this notion with escape theory, which posits that when individuals are faced with an aversive self-awareness, such as an awareness of a discrepancy between one's actual and ideal body shape, they will engage in behaviours that help them cope and/or escape this awareness (e.g., drug use, self-harm). In this sense, disordered eating sometimes serves as an affect-regulation strategy.

Numerous studies, mostly conducted with women, have verified many predictions made by self-discrepancy theory concerning body image. Higgins' (1989) contention that perceived self-discrepancies result in mental health issues is well supported by the literature: Those with a greater disparity between their perceived actual and ideal body shapes report greater levels of depressive symptoms (Jackson et al., 2014; Solomon-Krakus et al., 2017). Further, because many researchers operationalize body dissatisfaction as the difference between how someone sees themselves and how they would like to look, body dissatisfaction may be understood as a result of perceived actual-ideal self-discrepancy (Vartanian, 2012). Indeed, it has been shown that those with high appearance self-discrepancy report greater body dissatisfaction and lower global self-esteem (Jung, Lennon, & Rudd, 2001). The notion that perceived discrepancies culminate in maladaptive weight and shape control behaviours, such as eating pathologies, has also received support. A review of the literature found that differences between current and ideal figures are greater among those with disordered eating symptoms, and individuals with attitudes and beliefs characteristic of anorexia nervosa and bulimia nervosa are more likely to report a lower ideal body mass (Lantz, Gaspar, DiTore, Piers, & Schaumberg, 2018).

In addition to providing a useful framework for understanding the psychological processes underpinning body image disturbance and disordered weight and shape control behaviours, the constructs of self-discrepancy theory imply that standards of attractiveness are not fixed, rather that body dissatisfaction is determined in relation to standards that vary historically, cross-culturally, and individually (Vartanian, 2012). This variability presents the possibility that trends in ideal and ought selves vis-à-vis physical appearance vary based on sociodemographic characteristics such as gender and sexual orientation and that gender- and sexual orientation-based disparities in body image disturbance and disordered weight and shape control behaviours reflect differences in ideal and ought selves. For example, as will be demonstrated later, men uniquely display a desire to be muscular, but this is not equally prevalent among heterosexual men and GBMSM.

2.4.2 Social Comparison Theory

Social comparison theory aims to explain how individuals process social information and develop a sense of self. In his original explication of the framework, Festinger (1954) argued that individuals accomplish this feat by comparing themselves to others in order to establish similarities and differences. He outlined the theory's basic tenets through a number of hypotheses, of which the following may be considered relevant in the context of the current research problem. (a) Humans have an innate motivation to evaluate their own opinions and abilities and, whenever possible, do so using objective criteria (i.e., based on a self-evident, physical referent, like comparing strength by seeing whether one can lift a rock of a particular weight). (b) To the extent that objective means are unavailable, individuals evaluate their attributes by comparing themselves to others. (c) The inclination to compare oneself to others decreases as the gap between their opinions and abilities widens. (d) There is a unidirectional drive to improve, rather than worsen, one’s abilities. (e) The pressure toward achieving traits consistent with a target group is greater if the target group appears more attractive, their opinion is perceived as more relevant, or they are similar with regard to other attributes.

The initial framework has undergone several modifications. One of the most noteworthy is the inclusion of motivations that underpin social comparison, which are thought to shape both how individuals engage in social comparison and how this process influences psychosocial outcomes. Those individuals who are primarily invested in self-evaluation, for instance, seek to acquire what they perceived to be accurate, unbiased information about themselves. Others engage in social comparison for the purpose of self-improvement, where the goal is to learn how to improve certain characteristics or solve personal problems. Some, counter to Festinger’s claim that people are interested in accurate self-evaluation, are interested in self-enhancement, or using information in potentially biased ways to protect or enhance one’s self-esteem (Wood, 1989). Experimental evidence shows self-evaluation is associated with negative outcomes for appearance satisfaction and self-esteem, whereas self-improvement and self-enhancement are associated with at least short-term positive outcomes (Martin & Gentry, 1997).

Social comparison has also been categorized more discretely into downward and upward comparison. Wills (1981) states that individuals partake in downward comparison when they compare themselves to an individual or group they consider to be in worse condition than themselves to enhance their subjective well-being. Downward comparison is evoked by situational decreases in subjective well-being, and therefore it occurs more frequently among individuals with low self-esteem. Upward comparison occurs more often and involves comparing oneself to others who are better off. Its focus seems to be less on self-enhancement and more on self-evaluation (Wilson & Benner, 1971). It has been experimentally demonstrated that downward comparison with others who are said to be experiencing hardship improves mood of individuals with low self-esteem, whereas the opposite occurs in the case of upward comparison (Gibbons & Gerard, 1989).

Some of the theory's original premises have been challenged in light of contradicting evidence. Rather than being an inert medium that merely enables individuals of their own volition to engage in social comparison, many argue the external environment should be understood as, to some extent, imposing comparisons on individuals. The suggestion that the social environment in fact shapes self-evaluation is grounded in studies like Davis' (1966) work, which found that college graduates' career aspirations were predicted by their relative standing among peers. Evidence also indicates that people are inclined to make comparisons with those who differ markedly from themselves. Studies of undergraduate women show they compare themselves to unrealistically thin depictions of women in media as frequently as they do to their more relevant peers (Engeln-Maddox, 2005; Strahan, Wilson, Cressman, & Buote, 2006). Contradictory evidence that informed modifications to the original framework are accompanied by a wealth of confirmatory evidence that justifies the framework's continued use. Although it appears that individuals often are no more interested in making comparisons with similar others, Festinger was correct in that those comparisons are especially impactful. For example, a series of studies by Tesser and colleagues (see Tesser, 1986, for a review) demonstrate that comparisons drawn between individuals who are similar based on factors such as age, race, gender, and personality have a greater impact on self-esteem. Meta-analysis also confirms that individuals who engage in social comparisons display higher levels of body dissatisfaction (Myers & Crowther, 2009).

The aforementioned theoretical revisions that emphasize the importance of environment in determining when and how social comparisons take place offer important implications for how social media and other information technologies influence body image. Based on a wealth of evidence demonstrating that social comparisons mediate the relationship between social networking site (SNS) use and body image issues (Fardouly, Diedrichs, Vartanian & Halliwell, 2015; Fardouly & Vartanian, 2015; Lewallen & Behm-Morawitz, 2016), we are inclined to suggest that the digital spaces formed by social media platforms and their communities of users create unique environments that facilitate social comparison.

2.4.3 Objectification Theory

Objectification theory was originally proposed to explain how sociocultural and intrapsychic factors result in disproportionately high rates of disordered eating and other mental health issues among women. Fredrickson and Roberts (1997, p. 175) defined sexual objectification as occurring when “women are treated as bodies—and in particular, as bodies that exist for the use and pleasure of others” [emphasis in original]. Nussbaum (1995) identified a series of characteristic attitudes regarding objects that, when applied to persons, constitute objectification. These include instrumentality (treating others as tools to achieve one’s own ends), denial of autonomy (treating others as lacking self-determination), fungibility (treating one as being interchangeable with others), and violability (treating others as being permissible to break into). In essence, sexual objectification is the fragmentation and reduction of women’s personhood into their sexual utility. By normalizing both the sexual gaze and violence toward women, it is understood as a quotidian mechanism by which women’s oppression in Western society is maintained.

Because women are socialized into the dominant cultural milieu, it is suggested that they begin to internalize sexual objectification. Self-objectification occurs when women adopt observers' perspectives of the self and displace their own. It often manifests in the form of reducing one's worth to how closely their appearance adheres to normative cis-hetero-patriarchal standards of beauty. Self-objectification is accompanied by self-surveillance, or habitual monitoring of the body's external appearance (Fredrickson & Roberts, 1997). The co-occurrence of self-objectification and self-surveillance is thought to result in body shame, appearance anxiety, and reduced awareness of internal physiological and psychological states (i.e., deficits in interoreceptive awareness of hunger, satiety, fatigue, and anxiety). Reduced awareness of bodily cues, in concert with shame and anxiety that encourages women to suppress these cues, may ultimately lend to an increased risk of disordered eating (Calogero, 2012; Fredrickson & Roberts, 1997). Empirical evidence indicates the aforementioned constructs are highly interrelated (Augustus-Horvath & Tylka, 2009; Greenleaf, 2005; Kozee & Tylka, 2006; McKinley & Hyde, 1996; Moradi, Dirks, & Matteson, 2005; Noll & Fredrickson, 1998).

Although the original authors do not suggest that experiencing sexual objectification is unique to women, the framework was developed to understand how women's lived experiences in particular are shaped. Indeed, this specificity is reflected in the fact that a majority of studies testing the model's viability rely on convenience samples of mostly White women age 18–24 (Augustus-Horvath & Tylka, 2009). The relatively fewer studies conducted among men suggest that although the model holds overall (Martins, Tiggeman & Kirkbride, 2007; Wiseman & Moradi, 2010), the degree of significance among its various proposed interrelations (e.g., among sexual objectification, self-surveillance, body shame, interoreceptive deficits, and disordered eating) may vary across gender and sexual orientation. For instance, a meta-analysis of 53 cross-sectional studies demonstrated a positive correlation between self-objectification and disordered eating (overall effect size r = .39), but the large degree of heterogeneity between studies in effect size suggests the presence of potential mediating factors. Overall, the association between self-objectification was found to be stronger among women (r = .41 across 63 effect sizes) than men (r = .20 across ten effect sizes). Significant differences were observed in the point estimates for heterosexual women (r = .39), lesbian women (r = .38), gay men (r = .32), and heterosexual men (r = .23), suggesting that sexual orientation modifies the association between self-objectification and disordered eating (Schaefer & Thompson, 2018). Differences in association strength may be due, in part, to slightly different pathway effects. For instance, one study found that although body surveillance in gay men predicted body shame and in turn disordered eating, experiences of sexual objectification did not predict body surveillance or body shame (Engeln-Maddox, Miller, & Doyle, 2011).

Some of the assumptions that may be drawn from the original objectification theory concerning gender and sexual orientation appear to conflict with the evidence base. Objectification theory posits that the interpersonal and structural oppression of women inculcates a social milieu that more readily sanctions sexual objectification of women by men rather than vice-versa. A corollary of this notion is that men, irrespective of their sexual orientation, would experience significantly less objectification. Based on this premise, one may assume that body image concerns do not differ between heterosexual men and GBMSM. As we previously demonstrated, however, sexual orientation-based disparities between men in body image disturbance and disordered eating are consistently observed. The previous evidence suggests that even if, to some extent, objectification theory can be applied ad hoc to GBMSM, based on its current premises it cannot solely account for their disproportionately high rates of body image disturbance and disordered eating.

2.5 Class II Theories—Sexual Orientation-Based Differences in Body Image

A scoping review of empirical studies addressing disordered eating among sexual minorities identified two prevailing theoretical models that account for sexual orientation-based disparities in eating disorder risk: sociocultural and minority stress approaches (Calzo et al., 2017). Although all surveyed epidemiologic surveillance studies were framed by sociocultural approaches, minority stress approaches, or an integrative combination of the two, few formally tested these proposed mechanisms through analytic methods. Before we introduce these proper, we will detail one theory that illustrates how established models can be modified to include additional demographics. This theory may be viewed as a logical extension of objectification theory, allowing it to accommodate within its theoretical assumptions that GBMSM are acutely vulnerable to being objectified.

2.5.1 Perils of Sexual Objectification Hypothesis

Prior to sexual objectification theory being formalized, Hatfield and Sprecher (1986) argued the increased emphasis on physical attractiveness among both heterosexual women and gay men was due to the fact that both groups are interested in attracting men. The perils of sexual objectification hypothesis, articulated and tested by Siever (1994), posits that the similar vulnerability to body dissatisfaction and disordered eating seen among heterosexual women and gay men is attributable to their shared experience of being sexually objectified by men. It follows from this idea that lesbians and heterosexual men, who in theory have minimal investment in attracting men, should display comparatively less concern in appearing physically attractive and concomitantly have lower rates of body image disturbance and disordered eating.

Findings from Siever's (1994) analysis of college students appear to support the hypothesis. Based on multiple measures, lesbians placed less importance on physical attractiveness than do heterosexual men and women as well as gay men. On average, heterosexual women and gay men indicated higher body dissatisfaction than lesbians and heterosexual men, respectively. Similar trends were observed for measures of disordered eating, with heterosexual men displaying the lowest overall group means. Heterosexual women and gay men displayed similar scores, and lesbians displayed significantly lower means than heterosexual women on most measures.

More recent evidence offers mixed support of this hypothesis. An analysis of 2,206 U.S. undergraduate students confirmed that it is indeed men who are primarily responsible for perpetuating the male gaze and interpersonal objectification, evidenced by a greater proportion of women than men (43% of 1303 women vs. 25% of 903 men) reporting high appearance surveillance (Frederick, Forbes, Grigorian, & Jarcho, 2007). In addition to women being more likely than men to self-objectify, an additional study found that men objectified women more frequently than women objectified men (Strelan & Hargreaves, 2005). Conversely, another study found that heterosexual women were no more likely than lesbians were to report having experienced a sexualized gaze or interpersonal sexual objectification, nor did the relationship between interpersonal sexual objectification and self-objectification differ between lesbians and heterosexual women (Hill & Fischer, 2008). Engeln-Maddox et al.'s (2011) previously mentioned findings that interpersonal objectification does not predict surveillance or body shame in gay men also contradicts the notion that it is the experience of objectification by men that results in disordered eating.

Equivocal test results notwithstanding, the perils of sexual objectification hypothesis serves as a useful conceptual extension of objectification theory because it may be used to explain why an association between self-objectification and disordered eating is observed among GBMSM, even though objectification theory's initial premise implies it is women in particular who are impacted. The theory involves a rhetorical shift from viewing sexual objectification as something that is experienced by women to something that is perpetuated by men. In so doing, it renders intelligible the possibility that men objectify men.

2.5.2 Sociocultural Models

Sociocultural approaches include a range of theoretical models that seek to explain the higher rates of body image disturbance and disordered eating among GBMSM and that are not fully captured by objectification frameworks. Generally, they posit that the aforementioned disparities are a result of community-specific norms revolving around ideal appearance or the importance placed on physical appearance (Calzo et al., 2017). It has been long observed that specific gay subcultures impose unique pressures on GBMSM to be physically attractive (Clark, 1977; Millman, 1980). Signorile (1997, p. 28) is credited with first using the phrase "body fascism" to describe the state of hegemonic gay male subcultures. He contends that although there are many different gay communities, there exists a diffuse body-focused subculture that has permeated mainstream gay discourse, iconography, and institutions. This influential culture is perpetuated mostly by young, White, metropolitan gay men who venerate muscular mesomorphic bodies (lean and muscular) while denigrating larger bodies. These norms are perpetuated, in spite of a dearth of individuals who actually embody the ideal, through both representations in commercial marketing and interpersonal interaction.

Based on this model, one would expect that integration into the community or affiliation with other GBMSM affects body image. Indeed, it has been shown that those who feel greater belonging to the gay community experience, perhaps counterintuitively, both greater self-esteem ($r = .59$) and body image disturbance ($r = .36$). The association between self-esteem and body image dissatisfaction, such that those with higher self-esteem were less satisfied with their bodies, was found to be significant only among those who reported average-to-high community integration (Kousari-Rad & McLaren, 2013).

The question remains: What is happening within these communities to cause individuals to feel worse about their bodies? One study found that a greater proportion of gay men report experiencing peer pressure regarding physical appearance (determined by the extent to which individuals feel their peers value beauty, slenderness, muscularity, and the like) than their heterosexual counterparts (32.93% of 70 gay men vs. 27.96% of 169 heterosexual men, $p < .001$). Interestingly, peer pressure was found to be negatively correlated with self-esteem ($r = -.30$) and positively correlated with disordered eating symptomatology ($r = .31$) among gay men but not among heterosexual men. Peer pressure was associated with body dissatisfaction for heterosexual men, but to a lesser extent than for gay men (rs = .49 and .17, respectively) (Hospers & Jansen, 2005). Another study noted that gay men more frequently reported weight-related teasing by peers and same-sex peer influence than heterosexual men did. Hierarchal moderated regression analysis revealed the association between weight-related peer teasing and self-esteem was greater for gay men. However, the same study also found that sexual orientation did not moderate the relationship between body dissatisfaction and peer-teasing or same-sex peer influence (McArdle & Hill, 2009). Similarly, Yelland and Tiggeman (2003) found that gay men, more so than heterosexual men, believed their appearance was important to other people. Self-esteem was also found to be negatively correlated with the perceived importance others place on appearance, weight, and muscularity for gay men but not for heterosexual men and women.

Additional research suggests gay men’s concerns of being judged based on their appearance are not unfounded. Compared to heterosexual men, gay men report more frequently engaging in appearance conversations, defined as discourse that reinforces hegemonic appearance ideals in society (e.g., “Your arms look huge!” or “You look fat”). Further, the relationship between sexual orientation and body dissatisfaction was mediated by the frequency of appearance conversations, suggesting that sexual orientation-based disparities in body image disturbance are attributable, at least in part, to community-specific social and cultural influences (Jankowski, Diedrichs, & Halliwell, 2014). Overall, evidence indicates that gay men more frequently feel judged by their peers based on their appearance and that these interactions significantly impact their self-esteem and body image. Additionally, recent research links sociocultural models with objectification theory by investigating the possibility that community involvement exposes gay men to more experiences of sexual objectification. Pathway and bootstrap analyses revealed that sexual objectification experiences positively mediated the relationship between behavioural participation in 2SLGBTQ+ spaces and communities and body dissatisfaction. In contrast to studies previously mentioned, community involvement and psychological sense of community were not significantly associated with body dissatisfaction, suggesting that experiences of objectification may be a primary mechanism through which community norms precipitate body image disturbances (Davids, Watson, Nilsson, & Marszalek, 2015).

Recent discussions of gay men’s tendency to obfuscate appearance- and identity-based stigma on GSN apps under the phraseology of “sexual preferences” lend support to the idea that peer pressure and appearance stigma are especially salient among GBMSM, as well as offers a compelling example of how cultural norms and sexual objectification intersect. Several popular articles depict an epidemic of discriminatory behaviour on Grindr and other GSN apps targeted against persons with larger bodies, People of Colour, trans and gender-nonconforming persons, persons with disabilities, persons who are HIV-positive, and other marginalized embodiments and identities (Arkee, 2018; Hudson, 2018; Richardson, 2018). The phrase "no fats, no fems, no Asians," a common refrain of numerous permutations seen in users' profile descriptions that delineates the features one deems automatically disqualifying from interaction, is now used as shorthand to refer to this phenomenon. As these same articles note, an oft-used rejoinder to accusations of exclusionary or discriminatory behaviour is that one is within their right to exclude those whose traits do not conform to their "sexual preferences"—the tacit assumption being that these preferences are natural and immutable and exist independent of cultural bias or ideology. However, using Collins' (2004, p. 38) framework of the "new racism," or the reconfiguration of historical prejudices into more palatable forms to justify the continued social exclusion of People of Colour, Robinson (2015) argues discourses of personal preference in gay-oriented online spaces serve to efface larger cultural assumptions of race that shape psychic desires. Moreover, the logic of "preference" is said to be predicated on objectification—to valuate individuals based on discrete features like race, body type, and gender expression requires first reducing the whole person to the sum of their parts for the purposes of sexual gratification.

The notion that preference discourses are often deployed in online spaces (Callander, Holt, & Newman, 2016; Smith, 2017) also underscores how cultural norms are negotiated through internet-mediated communication. It should follow from the basic premises of sociocultural theory that exposure by GBMSM to the mediums that perpetuate these norms, such as mass and social media, would be associated with body image disturbance and its sequelae. A comparatively smaller body of literature confirms that the association between mass media exposure, body dissatisfaction, and disordered eating observed among heterosexual women is also applicable to GBMSM. Duggan and McCreary (2004) found that greater exposure to pornography, as well as consumption of muscle and fitness magazines, is associated with social physique anxiety in gay men but not in heterosexual men. Similarly, Carper and colleagues (2010) demonstrated that the relation between perceived media influence and beliefs regarding the importance of physical attractiveness was moderated by sexual orientation such that this relationship was significant for gay men but not for heterosexual men.

It is evident that mass media uniquely influences GBMSM's body image, potentially via mechanisms proposed in sociocultural models. However, with the exception of a few studies (addressed hereinafter), little research addresses the specific impact of social media on GBMSM's body image. This is an obvious gap in the literature because social media and other web technologies permit certain discourses to proliferate among communities in much the same way as mass media. At the same time, key differences in how users interact with mass and social media present the possibility that cultural norms influence users' bodily perceptions via different mechanisms. For instance, Rutledge et al. (2013) found no link between overall time spent on Facebook and appearance-oriented attitudes, suggesting social media's adverse effects do not operate exclusively, or even predominantly, though passive consumption.

In an effort to shift focus away from overall social media use and identify specific social media-related behaviours that promote body image issues, Smith et al. (2013) found a tendency to seek negative evaluations through Facebook was associated with eating pathologies. Hummel and

Smith (2014) similarly found that Facebook users who wrote their statuses in a negative feedback-seeking style (e.g., “I feel so fat in this outfit”) were more likely to report weight and shape concerns. One of the key distinctions between how mass and social media perpetuate appearance discourses may thus lie in the fact that, unlike mass media, the user-generated element of social media means that individuals can share representations of themselves (through display pictures and status updates, for example) and be subjected directly to appearance evaluations from peers, family, and potential sexual/romantic partners through comments, likes, private messages, etc.

2.5.3 Minority Stress Models

Minority stress models frame body image disturbance as a product of psychological and developmental, rather than purely social, determinants. Meyer (2003) first proposed the minority stress framework to mechanistically explain the disproportionately high rates of mental health issues seen among lesbians, gay men, and bisexuals, including mood, anxiety, and substance use disorders. Stress is broadly defined as physical, mental, or emotional strain, manifested either internally or through external events, which as it accumulates bears a greater load on individuals’ adaptive mechanisms. Minority stress, by extension, can be operationally defined as “the excess stress to which individuals from stigmatized social categories are exposed as a result of their social, often a minority, position” (Meyer, 2003, p. 675). In other words, minority stress is an increase in allostatic load that stems from the quotidian experience of being culturally, economically, and institutionally marginalized, oppressed, and/or disenfranchised.

Some commonly agreed upon features of minority stress are that it is (a) unique, in that it exists separate from general stressors that dominant social groups experience; (b) chronic, in that it is reinforced by stable social structures; and (c) socially-based, in that it originates from external social processes, institutions and structures. Three processes of minority stress that specifically affect 2SLGBTQ+ populations, ranked from distal to proximal, include (a) external, objective stressful events; (b) expectations of those events and the vigilance they necessitate; and (c) internalization of stigma and prejudice (e.g., homophobia, racism and transphobia) (Meyer, 1995). Individual minority stressors accumulate and accompany general stressors (e.g., job loss, death of a spouse), which in turn influence mental health outcomes. The impact of minority stressors on mental health outcomes is moderated by characteristics of one's minority identity, including the primacy it bears in defining one's identity and the extent to which one integrates into communities of similarly marginalized members.

A growing body of literature supports the claim that minority stressors are related to adverse mental health outcomes. Experiences of discrimination, vigilance that accompanies disclosing one's sexuality, and internalized homophobia, all of which may be conceptualized as distal or proximal minority stressors, were associated with depressive symptomatology, anxiety, substance use, and suicide ideation (Díaz, Ayala, Bein, Henne, & Marin, 2001; Hatzenbuehler, Nolen-Hoeksema, & Erickson, 2008; Mays & Cochran, 2001; Rosario, Rotheram-Borus, & Reid, 1996; Waldo, 1999). Demonstrating a link between minority stressors and body image disturbance and its sequelae, on the other hand, presents a different challenge. This can be accomplished either (a) indirectly, by showing that mental health issues that are induced by minority stressors are associated with body image disturbance, or (b) directly, by demonstrating an association between specific minority stressors and body image disturbance. The former is supported through recent evidence confirming an association between body image disturbance and self-esteem (Grossbard, Lee, Neighbors, & Larimer, 2008), depressive symptoms (Ali, Fang, & Rizzo, 2010; Richard, Lee & Lee, 2016; Rohrmann, Lohse, & Eichholzer, 2016), and suicidal ideation (Lee & Lee, 2016). The directionality of this association, however, has yet to be ascertained (i.e., whether mental health issues cause body image disturbance or vice-versa) due to the paucity of longitudinal study designs. Furthermore, none of the identified studies assessing the relationship between body image disturbance and self-esteem tested for interaction effects based on sexual orientation, which, as we noted, presents unique considerations.

The second, direct pathway has also been supported through studies that showed GBMSM who display internalized homophobia, anticipate stigma and rejection for being gay, and have experienced antigay physical assault are more dissatisfied with their bodies than those who lack those experiences (Kimmel & Mahalik, 2005; Williamson & Hartley, 1998). A study of sexual minority women found that experiences of heterosexism (e.g., workplace and school discrimination, homophobic harassment, and rejection) significantly predicted disordered eating symptoms ($r = .14$), whereas internalized heterosexism predicted body surveillance ($r = .17$) and body shame ($r = .14$) (Watson, Grotewiel, Farrell, Marshik, & Schneider, 2015).

Minority stress theory offers an explanation for why body image disturbance is observed even among GBMSM who are only minimally involved or feel connected to a gay community. Critically, it moves away from a purely social explanation of the phenomenon and the implication that GBMSM merely “impose” body image disorders on one another. Instead, it examines the role of larger cis-hetero-patriarchal society in producing adverse mental health outcomes through historical and systematic persecution of 2SLGBTQ+ populations. In the process, it rejects the premise that non-heterosexual identities and behaviours are inherently pathological, which has historically been wielded to justify their marginal status through an essentialist, medicalizing logic.

2.5.4 The Femininity, Masculinity, and Polarization Hypotheses

For several decades, researchers have entertained the possibility that sex/gender-based disparities in disordered eating are a function of constructed gender identity and practice rather than essential sex differences (Boskind-White & White, 1986), but only recently have the implications of this notion for men been explored. Lakkis et al. (1999) observed that gay men displayed greater rates of body dissatisfaction and dietary restraint than heterosexual men did, whereas lesbians scored significantly lower than heterosexual women on body dissatisfaction, drive for thinness, dietary restraint, and bulimia nervosa. Moreover, it was shown that the variance between men in terms of body-image related outcomes is better explained by gender expression than by sexual orientation, whereas the inverse is true for women. Finally, for both men and women, irrespective of sexual orientation, a greater presence of characteristics that are associated with normative constructions of femininity and carry a negative connotation (e.g., passivity, dependence, unassertiveness) predicted greater disordered eating symptoms. We argue that these results lend support for the femininity hypothesis, which claims that for men and women disordered eating is linked to adherence with hegemonic feminine gender practice (Boskind-White & White, 1986).

Evidence in support of the femininity hypothesis has been mixed. A meta-analysis of 25 studies assessing the relationship between gender role orientation and body-related outcomes in men found that prior to adjusting for sexual orientation, adherence to feminine norms was not significantly associated with eating pathology, body dissatisfaction, and muscle dissatisfaction. After adjusting for sexual orientation, it was found that femininity was associated with lower muscle dissatisfaction in heterosexual men but not gay men. Greater adherence to masculine norms, on the other hand, was associated with reduced eating pathology and greater overall body satisfaction, but was also positively associated with muscle dissatisfaction in particular (Blashill, 2011). These findings contrast with previous reviews, which found that femininity was positively associated with eating pathology (Murnen & Smolak, 1997). Blashill (2011) notes that this inconsistency may indicate that femininity's relationship to body dissatisfaction is more salient for women than it is for men. Together, these findings appear to contradict the femininity hypothesis as it is applied to men. Interestingly, however, Blashill's (2011) findings seem to indicate that adherence to masculine gender practice offers protection against body image-related pathology. He speculates this is due to the traits that are associated with traditional masculinity (e.g., assertiveness, dominance, autonomy), which foster greater self-esteem and concomitant body satisfaction (see Whitley, 1983, for a meta-analysis). At the same time, adherence to traditional masculinity may promote dissatisfaction directed specifically toward muscularity, likely as a consequence of cultural scripts that conflate normative constructions of masculinity with muscularity. One could interpret this as meaning it is not femininity per se that increases men's risk of body image disturbance and disordered eating, but rather the manner in which they negotiate their gendered identities in the context of hegemonic masculinity. It may be more appropriate, therefore, to speak in terms of a masculinity hypothesis to describe this phenomenon.

A compelling inference may be drawn from the masculinity hypothesis in light of evidence demonstrating increased rates of gender nonconformity among sexual minority men (Bailey & Zucker, 1995; Rieger, Linsenmeier, Gygax, & Bailey, 2008): Sexual orientation-based differences in body-image related pathology may be due to differences in adherence to gender norms. French et al. (1994) originally posed this explanation when they found that only 65% of their 119 self-identifying lesbian and gay participants and less than half of their 275 bisexual participants reported any previous sexual experiences with persons of the same gender. They reason the observed sexual orientation-based differences in body image and weight and shape control behaviours could not solely be due to sociocultural processes because many respondents were too young and inexperienced to have been sufficiently acculturated. Because many GBMSM display gender-nonconforming behaviour in childhood and adolescence, they speculate this hypothesis may be more appropriate. Indeed, Strong et al. (2000) found that after controlling for childhood gender nonconformity, differences in body dissatisfaction between gay and heterosexual men became non-significant. Furthermore, in-group analysis revealed “high feminine” gay men had greater body dissatisfaction than “less feminine” gay men.

If it is, in fact, gender conformity (i.e., for men, deviance or adherence to hegemonic masculinity) that is associated with body image disturbance, rather than the presence of femininity, it would be inappropriate to suggest femininity itself is predisposed toward body image disturbance and that its prevalence among gay men explains why their rates of disordered eating approach women’s. Instead, it appears that gay men, who more frequently deviate from hegemonic masculinity, may experience gender-based stigma and violence that precipitates body image issues (Kimmel, 1997; Sandfort, Melendez, & Diaz, 2007). The distinction between the femininity and masculinity hypotheses, therefore, lies in how gender is theorized. On the one hand, the femininity hypothesis is contingent on an essentialist model that posits the existence of universal, “natural” characteristics associated with womanhood. The masculinity hypothesis, on the other hand, highlights the constructed nature of sex and gender by suggesting that the hegemonic masculine subject is consolidated through acts of signification, like outward displays of misogyny and homophobia (Butler, 1990; Kimmel, 1997).

Some posit that in addition to being at least partly responsible for gender- and sexual orientation-based differences in rates of body image disturbance, gender role orientation is also implicated in the observed qualitative differences in body image ideals between men and women. The polarization hypothesis argues that men's and women's ideal body images occupy symbolically opposite extremes as part of an ideological project to sustain complementary, mutually exclusive, and binary gender norms (Mishkind, Rodin, Silberstein, & Striegel-Moore, 1986). Ample evidence exists of differing body image ideals between men and women. Overall, men desire to be heavier and more muscular than their current shape, whereas women wish to be smaller and thinner (Furnham et al., 2002; Oehlhof, Musher-Eizenman, Neufeld, & Hauser, 2009). Other studies have shown bimodal responses from men, with some wanting to be smaller and others wanting to be larger (Varnado-Sullivan, Horton, & Savoy, 2006). These differences in men's body preferences may be based on the extent to which they adhere to traditional masculinity, as well as cultural and geographical differences in how masculinity is constructed. Multiple regression analysis revealed conformity to masculine norms predicted muscle dissatisfaction and muscularity-oriented disordered eating, but not body fat dissatisfaction and thinness-oriented disordered eating in a sample of 246 heterosexual men (Griffiths & Murray, 2015). GBMSM similarly display a desire for both thinness and muscularity (Kaminski, Chapman, Haynes, & Own, 2005), but GBMSM may be more likely than heterosexual men are to be concerned with thinness (Calzo et al., 2015). Other studies found that gay men indicated a greater drive for muscularity than both heterosexual men and women (Yelland & Tiggemann, 2003). In the same vein as Strong et al.'s (2000) study, future research should examine whether gender conformity mediates the relationship between sexual orientation and body image preferences.

The masculinity hypothesis suggests not only that gender and body aesthetics are inextricably linked, but also that the association is animated by social and cultural forces, such as stigma. Wood (2004) notes that GBMSM experience gender-based discrimination not only from heterosexual men and women, but also from other gay men, who as a collective lack as strong a tradition of critically analyzing intragroup gender-inflected power relations compared to feminist and lesbian cultures. The masculinity hypothesis thus presents potential links to sociocultural perspectives, as greater integration to gay communities may yield body image disturbance by way of gender stigmatization. Research with preadolescent boys shows an association between childhood gender nonconformity and dysthymia, somatoform disorder, and anxiety (Coates & Person, 1985; Sreenivasan, 1985), likely as a result of gender-based abuse, not inherent pathology (Roberts, Rosario, Corliss, Koenen, & Austin, 2012). This provides an additional link between the masculinity hypothesis and minority stress theory.

As an aside, we caution readers against interpreting the aforementioned conclusions drawn from the masculinity hypothesis to mean either that (a) gender nonconformity is an essential feature of same-gender attraction or (b) gender nonconformity is in itself a psychopathology or product of developmental aberrance. Numerous scholars have documented at length how these positions were advanced by heterosexist medicalizing discourses to justify the systemic persecution and cultural marginalization of sexual and gender minorities. (See Hekma, 1994, for a critical and historical analysis of the “gender inversion” theory of homosexuality and Fausto-Sterling, 2000, for a discussion of medicine’s and sexology’s roles in constructing a pathological etiology for same-gender attraction and gender nonconformity.)

2.6 Class III Theories—Impact of Social Media on Body Image

2.6.1 Transactional Model of Social Media and Body Image Concerns

Given social media’s pervasiveness in our everyday lives, comparatively little research has been undertaken to investigate their health-related effects. Perloff (2014) sought to address this gap by developing a theoretical model based on social psychological and communications perspectives that describes the impact of social media on body image and disordered eating. He first characterized five key attributes that distinguish contemporary social media from conventional mass media. First, social media are seen as interactive—users are simultaneously sources, distributors, and receivers of information, whereas they are mostly passive viewers with other media forms. Second, and by extension of the previous feature, users feel a greater sense of autonomy and personal agency over the media they consume. Third, social media channels are more personal outlets, evidenced through the ability to customize website features and upload individual writings, images, and videos. Fourth, social media platforms use various modalities to immerse individuals in psychologically engaging ways that promote suspension of belief and attitude change. Finally, social media platforms tend to target specific demographics and connect like-minded users; unlike mass media, which aims to appeal to as wide and heterogeneous a base as possible, social media are in essence media of one’s peers (Perloff, 2014).

Using a multipartite transactional model of social media and body image concerns, Perloff (2014) contends that social media do not unidirectionally cause body image disturbance, but in the presence of individual predisposing factors and when mediated by certain psychosocial processes, they can have deleterious effects. These individual vulnerability factors, which render certain people particularly susceptible to social media’s influence on body image, include low self-esteem, depression, and perfectionism. These factors would be expected to have a greater influence on body image when they co-occur with appearance-related concerns, such as internalization of the thinness ideal and centrality of appearance to self-worth. Individual vulnerability factors in part determine people’s motivations for using social media in the first place. Perloff (2014) suggests those who are low in self-esteem and high in thin-ideal internalization, or high in both perfectionism and appearance-based self-worth, are more likely to seek gratifications from social media such as validation and reassurance regarding their physical attractiveness and escape from body image-related distress.

The links between resulting social media uses (e.g., Facebook, Twitter, Instagram) and attitudinal and behavioural outcomes are mediated by a number of psychosocial processes. Perloff (2014) identifies three mediating processes: social comparison, narrative-induced transportation, and normative processes. Narrative-induced transportation is the process of immersion by audiences into the narrative constructed within a text. Texts become more believable when they involve feasible plots and characters with whom audiences may more readily identify. Texts that successfully transport individuals render them more inclined to adopt the text’s world-view, effectively rendering them more receptive to persuasion (Green & Dill, 2013). Normative processes involve perceptions of peers’ normative concerns (i.e., beliefs about what body shapes others consider acceptable) and meta-beliefs about how others are influenced by media (Perloff, 2009). Finally, it is suggested that a positive feedback loop exists whereby those whose body image and weight and shape control behaviours have been negatively impacted by their social media use rely further on social media to derive validation and reassurance from peers. This, in turn, intensifies the processes of social comparison, transportation, and normative influences, resulting in even greater body image disturbance and exacerbated disordered eating (Perloff, 2014).

A nascent body of research confirms the fundamental association between social media and body image upon which the transactional model aims to detail a mechanistic explanation. A systematic review of 20 studies investigating the associations among SNS use, body image, and disordered eating found that overall, these factors were correlated (Holland & Tiggemann, 2016). Some studies went beyond comparing SNS users and non-users to determine whether an association exists between body image-related outcomes and specific activities and features relevant to SNS use. These studies found that those who spent more time on MySpace and Facebook and more frequently checked their profiles displayed greater body surveillance, more frequently made appearance comparisons, had greater body dissatisfaction, and more frequently displayed disordered eating symptoms (Fardouly & Vartanian, 2015; Mabe, Forney, & Keel, 2014; Tiggemann & Slater, 2014; Vandenbosch & Eggermont, 2012). Body image disturbance and disordered eating also have been shown to be positively associated with one's degree of engagement with SNSs, measured by number of Facebook friends (Kim & Chock, 2015; Tiggemann & Slater, 2014). Those who shared more photos, viewed others' photos more frequently, and more often engaged with others' posted content (through likes, comments, etc.) had a greater likelihood of basing their self-worth on their appearance, endorsing thin ideals, and displaying weight dissatisfaction (Kim & Chock, 2015; Meier & Gray, 2014). Importantly, it has recently been shown that the association between social media use and body dissatisfaction seen mostly among young women and female adolescents is generalizable to GBMSM. For example, a study with a nationwide U.S. sample of 2,733 sexual minority men revealed small but statistically significant positive correlations between frequency of SNS use (across a number of platforms, including Facebook, Instagram, Snapchat, and dating apps) and body dissatisfaction, eating disorder symptoms, and thoughts about using anabolic steroids. When body dissatisfaction was disaggregated into body fat, muscularity, and height dissatisfaction, it was found that muscularity dissatisfaction was more consistently associated with SNS use across a variety of platforms than the other two outcomes. Moreover, the associations between both muscularity dissatisfaction and eating disorder symptoms with social media use was stronger for image-centric (e.g., Instagram, Snapchat) than non-image-centric (e.g., Wordpress) platforms (Griffiths et al., 2018).

Several of the more direct pathways proposed by Perloff (2014) also have received support, including depression and social media use (Lin et al., 2016); low self-esteem and social media use (Mehdizadeh, 2010); and media consumption, social comparison, and appearance dissatisfaction (Engeln-Maddox, 2005). Some pathways have yet to be verified, such as the interactive effects of perfectionism and centrality of appearance to self-worth on social media use and the mediational effects of transportation and normative influences on social media use and body image.

The transactional model provides a useful analytic scheme for organizing the various predictive factors of body image disturbance, as well as how they may be applied, when modelling the impact of social media on body image. Like previous frameworks, however, the model was informed mostly by evidence involving White, heterosexual female adolescents and young adult women, and the author makes no claim that the framework may be extrapolated to GBMSM. It therefore excludes any constructs that are unique to these populations, such as minority stress, 2SLGBTQ+ community integration, and gender conformity.

2.6.2 The Online Disinhibition Effect

Researchers have observed that people more frequently display disinhibited social behaviour or engage in uncivil discourse online compared to their usual offline selves. These behaviours include, but are not limited to, name-calling (mean-spirited or disparaging comments directed at a person or group of people), aspersion (derision aimed at an idea, plan, or behaviour), lying, vulgarity, and pejorative comments for speech (deriding individuals for how they communicate) (Coe, Kenski, & Rains, 2014). Suler (2004) coined the online disinhibition effect to describe this tendency to behave in a comparatively uninhibited manner online. He draws a distinction between benign disinhibition (e.g., showing extraordinary candor, generosity or helpfulness) and toxic disinhibition (e.g., showing extraordinarily hateful, critical, uncouth or threatening behaviour), while noting the two often overlap and can be difficult to parse in certain contexts. He then details a number of features unique to the online social environment that may promote disinhibited behaviour. These include: (a) dissociative anonymity—the ability to partially or completely obscure one's identity by withholding or fabricating personal identifiers, effectively producing a compartmentalized "online self" that is separately accountable from their in-person selves; (b) invisibility—the lack of physical presence that makes it difficult, if not impossible, to detect body language or paralinguistic cues that may telegraph discomfort or other emotions that steer a conversation; (c) asynchronicity—the temporal delay between sending messages and receiving feedback that results in less immediate consequences for committing faux pas, leading to "emotional hit and runs" (Suler, 2004, p. 168); (d) solipsistic introjection—the words of other online users become internalized into one's psyche, leading readers to subconsciously believe they are talking to themselves; (e) dissociative imagination—the belief that the online and offline worlds are independent and carry separate and unrelated consequences for actions; and (f) attenuated status and authority—the absence of visual cues which makes it difficult to identify authority figures, leading users to view experts and others who would usually elicit deference to be treated like peers.

Quantitative evidence in support of Suler's (2004) primary contention—that incivilities occur more frequently online—is middling and scattershot across various academic disciplines, but seems to overall outnumber disconfirming evidence. Experimental data indicate that “flaming” —counterproductive and aggressive forms of communication like insults and swearing—occurs more frequently in text-based computer-mediated communication than both videoconferencing and face-to-face communication (Castellá, Abad, Alonso & Silla, 2000). An observational study of U.S. youth also found heavy internet use (exceeding 3 hours per day) was significantly associated with experiencing repeated cyberbullying (Juvonen & Gross, 2008). It appears not only that antagonistic interlocution occurs more frequently online, but also that this observation is at least partly explained by online disinhibition. In a survey of 887 Japanese high school students, logistic regression analysis revealed those who reported higher levels of online disinhibition were 20% more likely to have cyberbullied others in the previous 6 months (Udris, 2014).

Studies that aimed to verify Suler’s (2004) proposed predictors of online disinhibition are more equivocal in their conclusions. Whereas Spears et al. (2002) found that anonymity in computer-mediated communication resulted in more flaming than did face-to-face communication, Douglas and McGarty (2001) concluded that anonymous posts on internet news boards were no more likely to be hostile than those posted by identifiable users. Likewise, a content analysis of blogs found that users who were more visually identified (i.e., used pictures of themselves in their profiles), disclosed more, not less, private information in their blog entries (Hollenbaugh & Everett, 2013). Lapidot-Lefler and Barak (2012) suggest the mixed findings in this space are partly due to a tendency to conflate anonymity with other predictors of online disinhibition, such as invisibility and lack of eye-contact. In their experimental study, where participants were presented with a hypothetical dilemma to resolve in pairs via online chat, anonymity and invisibility each exerted a significant main effect for one measure only (issuing threats and creating a general air of toxicity, respectively). Lack of eye-contact, on the other hand, exerted main effects on negative online disinhibition, flaming, and threats. As well, four significant interactive effects were observed, all of which involved eye-contact. The authors contend anonymity assumes different definitions depending on the communication environment and may therefore be better understood as a composite measure—renamed online sense of identifiability—that factors in availability of personal information, visibility, and eye-contact.

We conjecture that the online disinhibition effect could partly explain why GBMSM so frequently engage in appearance conversations. A narrative review of correlates and outcomes of fat talk —disparaging comments made about one's own weight or body shape—found that despite being a normative experience in Western culture, fat talk is widely considered socially undesirable behaviour (Shannon & Mills, 2015). Although we lack evidence to indicate as much, we do not think it too far-fetched to speculate making comments about others' appearance is perceived as being equally, if not more objectionable, than self-deprecating fat talk. In this sense, disinhibited online behaviour could be seen as a variable that mediates the association between social media use, sociocultural perspectives, and body image-related outcomes—if community integration is associated with body image disturbance among GBMSM by way of appearance conversations, one may speculate that disinhibited online behaviour resulting in appearance conversations accounts partly for the association between social media use and body image disturbance in GBMSM. For this to be the case, further research will need to ascertain whether (a) appearance conversations are considered uncivil or antisocial behaviour, (b) online disinhibition promotes appearance conversations, and (c) online disinhibition mediates the link between social media use and appearance conversations.

2.7 Developing an Integrated Model of Social Media and Body Image for GBMSM

The purpose of the present paper was to develop, from existing theory, a model that may be used to explain how GSN apps and social media influence body image and weight and shape control behaviours in GBMSM. Alone, none of the aforementioned theories satisfactorily captures the complex array of interrelated psychosocial factors underpinning social media's relationship with body image in GBMSM. Overall, Class I theories fail to take into account how social processes may vary for sexual minorities. For example, it has been shown that the ideal self for GBMSM is not always smaller and thinner—a preference which is more or less taken for granted with heterosexual women. Class II theories, on the other hand, have generally under-acknowledged the critical role social media and other internet technologies play in GBMSM's social dynamics, both historically and contemporarily. If community engagement is one of the primary drivers for body image disturbance in GBMSM, more focus should be directed on the digital platforms that facilitate community-building (and for many young GBMSM, are the first and likely most impactful form of exposure to such communities). Finally, Class III theories do not consider how patterns and motivations for social media use, as well as social dynamics on social media platforms, may differ for GBMSM. Gender-nonconforming gay men, for instance, are prone to harassment and discrimination that may motivate them more so than heterosexual women to seek affirmation from social media.

See Figure 1 for our proposed integrative model. We opted to use the transactional model of social media and body image concerns as our conceptual anchorage point for the remainder of the model. We believe that for a model detailing the impact of social media on body image among GBMSM, pathways detailing social media effects should be central rather than peripheral. For this reason, our model is better understood as an extension of Perloff's (2014) transactional model than as a new model outright. Remaining Class I, II and III theories and their constituent constructs were re-conceptualized as either extensions or modifiers of individual vulnerability factors or mediating processes. We distill the central points of the model in the following sections.

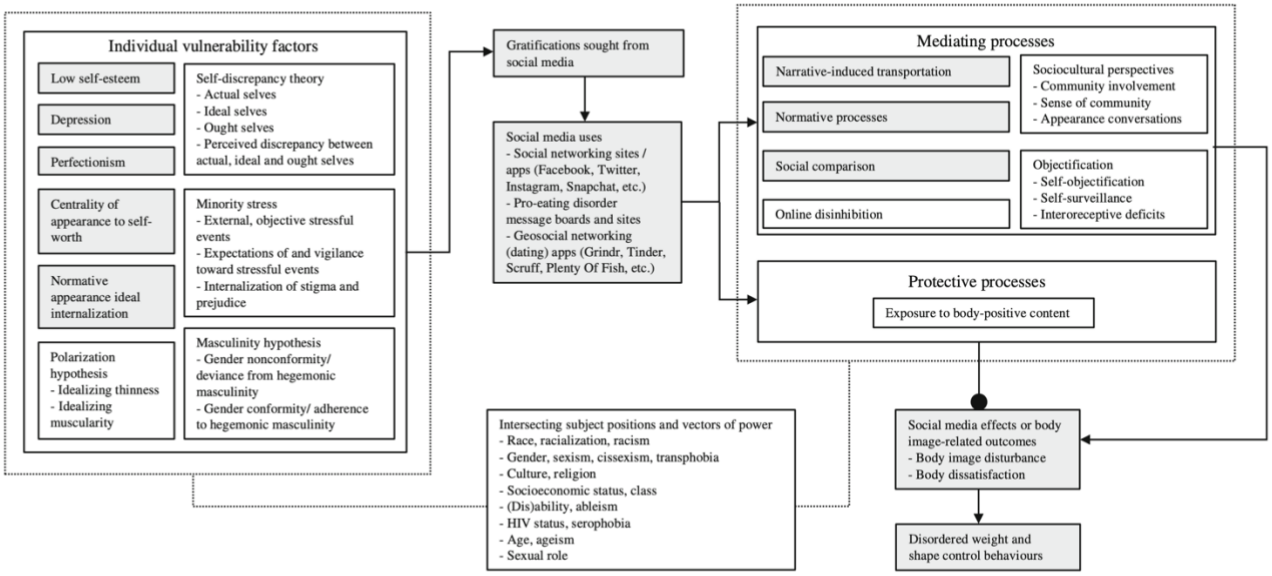
Individual vulnerability factors
Low self-esteem
Depression
Perfectionism
Centrality of appearance to self-worth
Normative appearance ideal internalization
Polarization hypothesis
- Idealizing thinness
- Idealizing muscularity
Self-discrepancy theory
- Actual selves
- Ideal selves
- Ought selves
- Perceived discrepancy between actual, ideal and ought selves
Minority stress
- External, objective stressful events
- Expectations of and vigilance toward stressful events
- Internalization of stigma and prejudice
Masculinity hypothesis
- Gender nonconformity/ deviance from hegemonic masculinity
- Gender conformity/ adherence to hegemonic masculinity
Gratifications sought from social media
Social media uses
- Social networking sites / apps (Facebook, Twitter, Instagram, Snapchat, etc.)
- Pro-eating disorder message boards and sites
- Geosocial networking (dating) apps (Grindr, Tinder, Scruff, Plenty Of Fish, etc.)
Mediating processes
Narrative-induced transportation
Normative processes
Social comparison
Online disinhibition
Sociocultural perspectives
- Community involvement
- Sense of community
- Appearance conversations
Objectification
- Self-objectification
- Self-surveillance
- Interoreceptive deficits
Protective processes
Exposure to body-positive content
Intersecting subject positions and vectors of power
- Race, racialization, racism
- Gender, sexism, cissexism, transphobia
- Culture, religion
- Socioeconomic status, class
- (Dis)ability, ableism
- HIV status, serophobia
- Age, ageism
- Sexual role
Social media effects or body image-related outcomes
- Body image disturbance
- Body dissatisfaction
Disordered weight and shape control behaviours

Figure 2.1. Proposed integrative model detailing the impact of social media and related information technologies on body image-related outcomes among GBMSM. Constructs originally from Perloff's (2014) transactional model are shaded. Triangular arrow endpoints denote promotive pathways or positive correlations; circular arrow endpoints denote inhibitory pathways or negative correlations. Dotted lines denote a positive or negative relationship dependent on specific intersecting subject positions, individual vulnerability factors and mediating/protective processes.

2.7.1 Individual Vulnerability Factors

We retain Perloff's (2014) posture that individual vulnerability factors increase one's likelihood of seeking affirmation and validation from social media. Among his examples, however, we suggest rethinking thin-ideal internalization as normative appearance ideal internalization because GBMSM’s ideal body image is comparatively more bifurcated and because appearance ideals differ, even among heterosexual women. We have also added minority stress, gender nonconformity, and adherence to hegemonic masculinity as potential vulnerability factors because all three have been linked to different forms of body image disturbance and mood disorders. A perceived discrepancy between one’s actual, ideal, and ought selves may also be considered a vulnerability factor because it too is linked with body image disturbance and adverse mental health outcomes. Self-discrepancy has also been shown to mediate the negative effect of Instagram use on body satisfaction (Ahadzadeh, Sharif, & Ong, 2017). Moreover, the ideal and ought selves determine whether one internalizes a thin or muscular body ideal. As the polarization hypothesis predicts, ideal and ought selves vary based on conformity to normative gender practice.

We leave the remaining pathways in Perloff’s (2014) transactional model intact: Individuals’ pursuit of validation drives them to use social media, which through mediating processes results in adverse body-image related outcomes and disordered weight and shape control behaviours. Individuals seek to remedy their body dissatisfaction through further social media immersion, and a feedback loop ensues. Data from Griffiths et al. (2018) suggest GSN apps and other dating websites impact body image to a similar extent as non-dating social networking sites, so we included them alongside Facebook, Instagram, and pro-eating disorder message boards.

2.7.2 Mediating Processes

For our revised model, we also chose to retain all mediating processes proposed by Perloff (2014)—social comparison, narrative-induced transportation, and normative processes—because we have no reason to suspect GBMSM’s psychosocial tendencies differ from those of heterosexual women in such a way that they would no longer apply. If anything, we conjecture that social comparison in particular may be of greater salience for GBMSM. Because body image ideals diverge across gendered lines, same-sex attracted persons may be more likely than their heterosexual counterparts are to view their current or potential sexual/romantic partners’ appearance ideals to be commensurate with their own. Consequently, to a greater extent than heterosexuals, GBMSM may perceive individuals to whom they are attracted as being aesthetically similar to themselves and therefore as relevant targets for comparison. In effect, this provides GBMSM an additional appearance pressure separate from popular media images, peers, and family. In support of this notion, Legenbauer et al. (2009) found that among gay men—but not heterosexual men or women—internalization of the thin ideal predicts preference for a thin partner. This suggests that GBMSM uniquely exhibit a link between erotic tendencies and personal body image ideals. Moreover, although a review of experimental studies shows men experience greater body dissatisfaction when exposed to idealized images of male bodies (Blond, 2008), the few studies that have explored the impact of images of women on men’s body image and self-esteem reveal no statistically significant relationship (Hargreaves & Tiggemann, 2002, 2003), indicating that congruence in gendered embodiment is precursory to establishing relevant targets for comparison.

This is not to say, of course, that GBMSM and their partners always have concordant idealized views of their own body. Within GBMSM, body image ideals can differ as a function of gender conformity, as we previously discussed. Evidence indicates they can also vary according to one’s preferred role in penetrative anal sex. Moskowitz and Hart (2011) found that tops, or those who mostly adopt the insertive sexual role, view themselves as more masculine than bottoms, or those who mostly adopt the receptive role, and that masculinity was highly related with weight, height, hairiness, muscularity, and erect penis size. For that matter, it is also possible that individuals' preferred sexual role moderates the effect of appearance- and eating-related discourses on body image and weight and shape behaviours. A widespread belief among GBMSM is that bottoms need to adopt specific dietary habits to ensure hygienic sex, such as consuming large amounts of fibre and avoiding dairy, coffee, and foods high in sugar or fat (Lopes, 2018; Maille, 2019). Memes (widely-spread internet content) that are circulated on social media broach this topic from a comedic angle, but sometimes seem to tacitly endorse restricted fasting and other behaviours commonly associated with disordered eating. Tops may be comparatively less susceptible to any adverse effects of this type of messaging because they likely perceive it to be less relevant to themselves.

It is also plausible that the impact of social comparison on body image among GBMSM is more pronounced on gay-oriented GSN apps than traditional SNSs. Such apps tend to host a more homogenous userbase in terms of gender identity and sexual orientation compared to sites like Facebook and Instagram (Badal et al., 2018), which may increase perceived similarity among users and exacerbate the effects of social comparison. Individuals also more frequently make upward comparisons on social media when comparing themselves to celebrities, close friends, and distant peers, but not family members (Fardouly & Vartanian, 2015). Upward comparisons may therefore occur more frequently on gay dating apps, where users are less likely to encounter and interact with family members than on Facebook or other SNSs.

Finally, it is worth mentioning that not all comparisons made on social media will be based on user-generated content. Across most platforms, native advertisements and sponsored content have increased in frequency over the past several years. Facebook and Instagram have reportedly maximized their “ad load” on their main content feeds—in other words, reached a point where further increasing the ratio of advertisements to user-generated content would reduce engagement and limit revenue growth (Levy, 2019). A portion of comparisons made on social media may therefore resemble in target, direction, and motive those made in the context of traditional mass media (Hargreaves & Tiggemann, 2009). If anything, models depicted in advertisements on social media compared to mass media may be perceived more often by users as relevant targets for comparison because ads are algorithmically curated based on users’ characteristics (e.g., age, sex/gender), location, and activities on other webpages.

In addition to those originally proposed by Perloff (2014), we added objectification as a mediating process in light of recent evidence indicating that self-objectification moderates the relationships between social media-related behaviours with body shame and disordered eating symptomatology (Cohen, Newton-John, & Slater, 2018; Manago, Ward, Lemm, Reed, & Seabrook, 2015). Similar to social comparison, a corollary of objectification theory—that interpersonal objectification is primarily perpetuated by men—suggests that objectification acutely impacts GBMSM on gay dating apps. Because gay dating apps are populated mostly by men seeking other men for sexual or romantic endeavours, use of these apps should be associated with greater self- and other-objectification. Indeed, recent quantitative evidence shows that current Grindr users are more likely to objectify other men than GBMSM who are not using Grindr (Anderson, Holland, Koc, & Haslam, 2018).

We also classified sociocultural approaches as a mediating process. It is conceivable that the dominant cultural milieu among gay men that enshrines a rigid set of body ideals, evinced by the link between community integration and body image issues, bears at least some resemblance to the cultural norms that proliferate in online communities. It would also be reasonable to assume that appearance conversations, which occur more frequently among GBMSM and are linked with body image disturbance, occur online as well as in person. As previously mentioned, appearance conversations may be more likely to take place online due to online disinhibition.

2.7.3 Protective Processes

In his original model, Perloff (2014) focuses almost exclusively on the pathways through which social media adversely impact body image and weight and shape control behaviours. We do not dispute the importance of these pathways, given most research indicates a deleterious relationship between social media use and body image, but it may be useful to consider mediating as well as potential moderating processes—that is, those that could influence the strength or direction of the relationship between social media use and body satisfaction in GBMSM. One such moderator that could conceivably mitigate or reverse social media's usually harmful impact is exposure to content on social media that emphasizes body positivity. As Sastre (2014) notes, under the auspices of the broader "body positive movement," there has, in the past few years, been a proliferation of content on social media and more static internet webpages dedicated to nurturing unconditional bodily acceptance and critical awareness of the cultural normalization of thin bodies. The body positive movement is said to have developed from previous movements, like those for fat acceptance, which focus explicitly on raising awareness of and challenging fat stigma and discrimination (Cooper, 2008). Unlike these initiatives, however, Sastre (2014) argues that the body positive movement's objectives are relatively nebulous and its intervention strategies scattershot. In this sense, it more closely resembles a series of loosely related philosophical positions than an organized political movement. Nevertheless, key messages include the harms associated with normative constructions of beauty, the need for more diverse corporeal representation in media, and the moral value inherent in bodies of all shapes and sizes (Sastre, 2014).

Recent articles from 2SLGBTQ+ popular media suggest that the body positive movement has expanded to capture the interest of GBMSM, who are becoming increasingly cognizant of their shared vulnerability to the harmful effects of comparisons made with others who depict normative body image ideals on social media (Baker; 2019; Feldman, 2019; Villarreal, 2019). One approach body-positive advocates are using to combat the problem is introducing competing imagery on social media that highlights larger features and that frames them as beautiful and desirable. Empirical evidence indicates there may be merit to this strategy. Consistent with previous research, Clayton and colleagues (2017) found that women's exposure to images of their ideal body type (i.e., thin) resulted in decreased body satisfaction. More interestingly, however, body satisfaction also linearly increased as the models depicted in images further deviated from the thin ideal, such that viewing plus-size models had the most positive impact on body satisfaction. Participants also engaged in greater social comparison when viewing images of their ideal body type compared to those considered less ideal, suggesting body-positive messaging that features plus-size models protects against body dissatisfaction by disincentivizing social comparison. In light of these findings, we have opted to label exposure to body-positive content as a protective process.

2.7.4 Intersecting Subject Positions

Our previous discussion of how gender conformity impacts body image and vulnerability to the adverse effects of social media use should illuminate that GBMSM are not a monolithic entity with uniform lived experiences. Intersectional frameworks were developed with the specific aim of understanding these sorts of intragroup complexities, and it is for this reason that we also employ them here. Although Kimberlé Crenshaw is often credited with first coining the phrase "intersectionality" in her 1991 work "Mapping the Margins: Intersectionality, Identity Politics, and Violence Against Women of Color," Collins and Bilge (2016) argue this only marks the point at which the framework began to gain formal acceptance within the academy. Intersectionality's core tenets were articulated, albeit using a different vocabulary, by African American women in social movement settings as early as the 1960s.

Importantly, there is not one singular definition of intersectionality to explicate; rather, ideas associated with the framework are deployed differently across research, activist and organizing contexts. That said, recurring themes include notions that (a) social inequality is rarely caused by a single factor, and instead is based on interactions among various technologies or axes of power (e.g., racism, sexism, heterosexism, classism); (b) individuals' identities or subject positions are always a result of multiple technologies of power that interact in multiplicative, rather than additive, ways; (c) technologies of power which shape subject positions are mutually constitutive (e.g., racism and heterosexism are animated and reinforced by one another); (d) power relations should be analyzed at their intersections as well as across domains of power (e.g., cultural, interpersonal, structural); and (e) efforts should be directed to redressing a historical inattentiveness to how lived experiences vary within any given social category based on other categories of difference (Bowleg, 2012; Collins & Bilge, 2016; Nash, 2008).

Himmelstein and colleagues (2017) note that intersectional frameworks have heretofore been under-utilized in body image research, much to the detriment of the field, because it remains largely unclear how social identities intersect to determine vulnerability to body image-related issues. Most quantitative research investigating predictors of body image disorders, like weight stigma, are based on samples that are 70–95% White (Vartanian & Porter, 2016), and sociodemographic characteristics like race/ethnicity, sexual orientation, age, and socioeconomic status are often treated as control variables instead of being considered meaningfully as potential interaction terms (Himmelstein, Puhl & Quinn, 2017). This points to issues of both inappropriate statistical analysis and inadequate sample heterogeneity with regard to sociodemographic characteristics. The current state of the body image literature is also a case in point of intersectionality's critique that scholarly work involving marginalized populations often assumes a mutual exclusivity of social categories, thereby reinforcing assumptions that certain categories have "default" states (e.g., Whiteness among GBMSM or heterosexuality among racial/ethnic minority persons) or that some categories are subordinated to others in shaping subject positions. For example, most studies investigating ethno-racial differences in body image disorders do not consider interactions with sexual orientation (Ricciardelli et al., 2007), and inversely, a majority of studies conducted with GBMSM ignore the issue of race altogether (Kaminski et al., 2005; Yelland & Tiggeman, 2003). As a result, there is presently a dearth of empirical evidence elucidating how intersecting vectors of power and attendant subject formations specifically impact body image among GBMSM that we may use to inform the current theoretical model.

In the absence of this type of evidence, we can provisionally resort to studies involving bivariate analyses of independent sociodemographic characteristics to get an idea of which correlates of body image pathology may be affected, by which characteristics, and in what direction across GBMSM. Ricciardelli et al. (2007) conducted a review of the literature and found that compared to White men, Black men were more likely to prefer a larger body on themselves, less likely to consider themselves overweight, and overall had a more positive body image. Latino men, on the other hand, reported no statistically significant differences in body image compared to White men, and the results from Asian men were too divergent to draw any conclusions. It is evident from these results that race and ethnicity impact what Perloff (2014) and ourselves have labelled vulnerability factors (i.e., normative appearance ideal internalization and perceived discrepancy between actual, ideal and ought selves), but variation across races is too great to suggest in broad strokes that not being White affords either protection or vulnerability. Similarly, it has been shown that U.S. Black women are less likely than Asian and White women to perceive mainstream standards of beauty as being relevant to themselves, and when exposed to images that depict this ideal, are more likely to identify with in-group standards (Evans & McConnell, 2003). This suggests that race also influences psychosocial mediating processes, like social comparison. Associations between other categories of difference, vulnerability factors, and mediating processes have been found, including but not limited to those between socioeconomic status and depression (Stansfeld, Head, & Marmot, 1997); lipodystrophy (abnormal body fat distribution) in HIV-positive men with depression and body image disturbance (Blashill et al., 2014); age and importance placed on appearance (Peat, Peyerl & Muehlenkamp, 2008); and acquired mobility disability and importance placed on appearance (Yuen & Hanson, 2002).

To depict the strength and direction of the linear associations among all possible social categories and variables included in the current model would yield a prohibitively convoluted schematic and, indeed, could be seen as betraying the sensibilities of the anticategorical methodological strand in intersectionality research, which is dedicated to deconstructing, rather than rigidifying, analytic categories (McCall, 2005). For simplicity purposes, the main points we emphasize here are that (a) various intersecting subject positions can conceivably modify the vulnerability factors and mediating processes pertinent to how social media impact GBMSM's body image and (b) quantitative research has inadequately explored these intersections specifically among GBMSM.

2.7.5 Hypothesis Verification and Other Directions for Future Research

In Figure 2 we further disaggregate our proposed additions to individual vulnerability factors into their individual constructs and elucidate the specific pathways through which they may result in increased social media use. From the masculinity hypothesis, minority stress theory, and self-discrepancy theory, we derived the following constructs: adherence to hegemonic masculinity; gender nonconformity; external, objective stressful events; expectations of and vigilance toward stressful events; internalization of stigma and prejudice; and perceived discrepancy between actual, ideal and ought selves. All of the aforementioned have been shown to be associated with at least one of Perloff's (2014) previously proposed vulnerability factors and, therefore, could be seen as at least indirectly encouraging social media use. However, none have hitherto been linked directly to social media use in quantitative studies, thus presenting opportunities for future research.

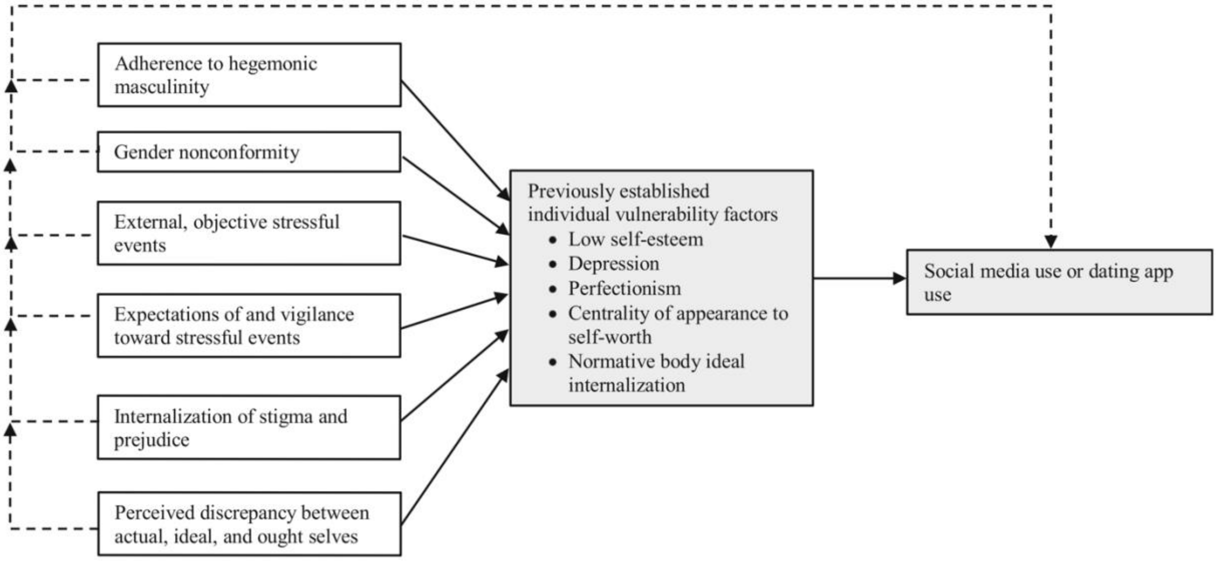
Adherence to hegemonic masculinity
Gender nonconformity
External, objective stressful events
Expectations of and vigilance toward stressful events
Internalization of stigma and prejudice
Perceived discrepancy between actual, ideal, and ought selves
Previously established individual vulnerability factors
• Low self-esteem
• Depression
• Perfectionism
• Centrality of appearance to self-worth
• Normative body ideal internalization
Social media use or dating app use

Figure 2.2. Proposed pathways for additions to individual vulnerability factors. Class I and II theories are disaggregated into their constituent constructs. Constructs originally from Perloff's (2014) transactional model are shaded. All arrows included here use triangular endpoints to denote promotive pathways or positive correlations. Solid lines denote pathways that have been verified by quantitative evidence; dashed lines denote pathways that have yet to be verified by quantitative evidence.

Similarly, in Figure 3 we disaggregate the theories that we suggest should be added as mediating/protective processes (sociocultural approaches, objectification, online disinhibition and body positivity) into their individual constructs to examine how they may explain the link between social media use and body image-related issues. Quantitative evidence verifies that this link is mediated by the objectification pathway (interpersonal objectification to self-objectification to self-surveillance). Although appearance conversations have been shown to be related to body image disturbance, and social media use encourages disinhibited behaviour, it remains unclear if and how community involvement, sense of community, and online disinhibition are related to appearance conversations. Likewise, although exposure to body-positive content has been shown to protect against body dissatisfaction by reducing social comparison, it is still unknown what elements of social media use predict exposure to this type of content.

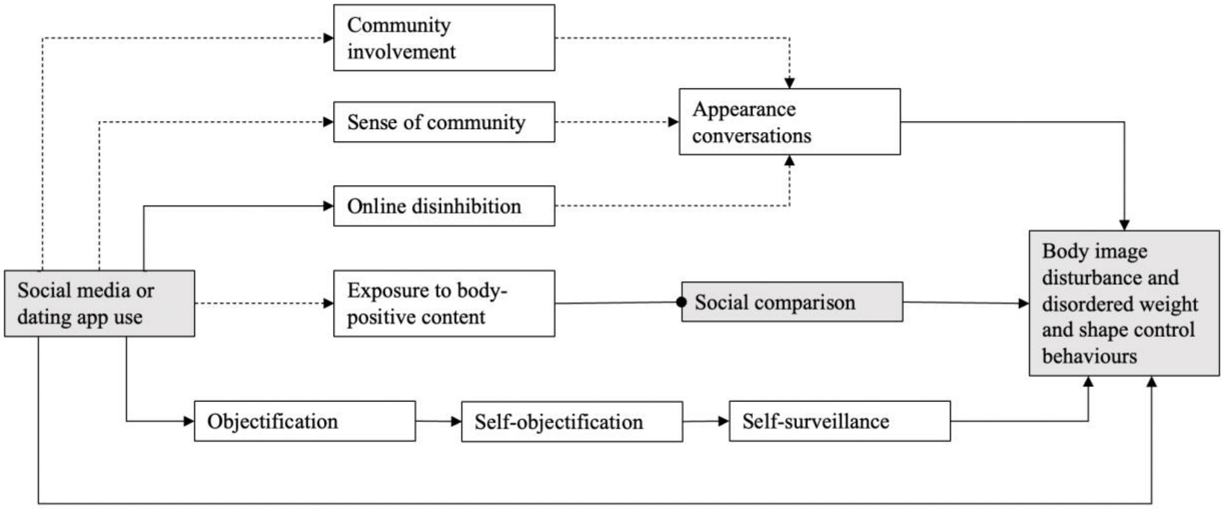
Community involvement
Sense of community
Online disinhibition
Appearance conversations
Social media or dating app use
Exposure to body-positive content
Social comparison
Body image disturbance and disordered weight and shape control behaviours
Objectification
Self-objectification
Self-surveillance

Figure 2.3. Proposed pathways for additions to mediating processes. Class I, II, and III theories are disaggregated into their constituent constructs. Constructs originally from Perloff's (2014) transactional model are shaded. Triangular arrow endpoints denote promotive pathways or positive correlations; circular arrow endpoints denote inhibitory pathways or negative correlations. Solid lines denote pathways that have been verified by quantitative evidence; dashed lines denote pathways that have yet to be verified by quantitative evidence.

Besides verifying these hypotheses, several other knowledge gaps remain. Perhaps foremost, only one known study (Griffiths et al., 2018) has tested whether the link between social media use and body image disturbance is generalizable to GBMSM. Additional studies should be conducted to see whether these findings hold in different populations. This study was also cross-sectional in nature; longitudinal studies should be considered in the future to establish temporality and directionality. Additionally, most studies involving social media have focused only on Facebook. The SNS and app markets have shifted dramatically since the mid-to-late 2000s as platforms like Instagram, Twitter, and Snapchat rose to prominence. It is still unclear if the relationship between social media use and body image disturbance varies between social media platforms and, if so, to what platform-specific features those differences can be attributed.

Griffiths et al. (2018) found that image-centric platforms more strongly impact body image, but it is unclear what exactly makes an SNS image-centric. Although Twitter used to be considered text-centric, for instance, it currently more closely resembles a multimedia platform. For that matter, dating websites and apps have also not been disaggregated and compared in terms of their impact on body image. It remains to be seen whether Grindr more adversely impacts body image and self-esteem than, say, GROWLr, an app targeted specifically toward "bears" (larger, hairier GBMSM). Future research should extend beyond comparing users to non-users and investigate associations between body image disturbance in GBMSM and app-specific behaviours, such as frequency and duration of use, representations in profile pictures, profile description content, intentions for app use, and number of apps used simultaneously.

2.8 Practice Implications

Our expanded model can offer key insights to inform the design of health promotion initiatives aimed at reducing the burden of body image disturbance and disordered eating among GBMSM. For example, the substance and delivery of social marketing campaigns should be grounded in a thorough understanding of how social media and other information technologies are uniquely situated in the lives of their target demographic. Messaging that advocates curbing overall social media and dating app use could be well-received by heterosexual women, but GBMSM may find this directive to reflect a lack of cultural sensitivity and/or competence, given internet-mediated communication has served a unique historical role for this group in circumventing the social, cultural, and political barriers to forming connections in public spaces.

The notion that social media use does not uniformly result in body image issues, underscored by the myriad vulnerability factors and mediating/protective processes identified in our model, also points to the potential ineffectiveness of this generic messaging. Any attempt to reduce social media use among all GBMSM would require overlooking that some are at minimal risk of body image issues and, indeed, could even benefit from protective factors like body-positive content. Instead, health promotion strategists should focus on identifying those most vulnerable (e.g., individuals who are low in self-esteem, experience greater minority stress, and to a greater extent have internalized normative appearance ideals) and patterns in use that are most harmful (e.g., engaging in upward comparisons, interacting with others who perpetuate weight stigma in appearance conversations) and orient their interventions accordingly.

2.9 Conclusion

The present paper is the first known to offer a theoretical framework detailing how social media and other information technologies influence body image and weight and shape control behaviours in GBMSM. Our findings make clear that body image disturbance and eating pathology among sexual minority men result from a broad and complex array of interrelated biological, psychological, social, and cultural determinants. Uncovering a simple causal mechanism increasingly seems idealistic, especially because matters are further complicated by digital technologies and sexuality, but a more thorough understanding of the many risk factors at play will be required for effective treatment and prevention strategies targeted toward this vulnerable population.

Chapter 3. Study II

Citation: Filice, E., Raffoul, A., Meyer, S.B., & Neiterman, A. (2019). The influence of Grindr, a geosocial networking application, on body image in gay, bisexual and other men who have sex with men: an exploratory study. Body Image, 31, 59-70.

Abstract: Recent evidence indicates use of geosocial networking apps is associated with body image-related issues among gay, bisexual, and other men who have sex with men. The current study aims to elaborate upon these findings by investigating how Grindr, the most widely-used dating app among this population, impacts users' body image and body satisfaction. Using an exploratory, qualitative study design, semi-structured interviews were conducted with 13 current and previous Grindr users and analyzed thematically. Our findings suggest Grindr affects users' body image through three primary mechanisms: weight stigma, sexual objectification, and social comparison. In each case, normative user attitudes and behaviours interact with the app's constitutional elements to affect bodily perceptions in a way that differs in form or intensity from social influence via offline exchanges. These interactions are often enabled by features shared with traditional social networking sites, like asynchronous, text-based communication and technology-assisted appearance augmentation, but certain features unique to Grindr may also play an important role. Moreover, participants identified several protective factors and coping strategies which suggest the relationship between Grindr and body image is dependent on a number of complex interactions between technology, user, and environment. Limitations and suggestions for future research are also discussed.

3.1 Introduction

A burgeoning literature suggests gay, bisexual, and other men who have sex with men (GBMSM) experience body image-related issues, such as body dissatisfaction and disordered weight and shape control behaviours, to a greater extent than heterosexual men (e.g. Matthews-Ewald, Zullig, & Ward, 2014; Morrison, Morrison, & Sager, 2004). Moreover, recent evidence indicates that the association between mobile dating application use (e.g., Tinder) and body image-related outcomes among white heterosexual women is generalizable to GBMSM (Griffiths, Murray, Krug, & McLean, 2018). Dating website and app use is remarkably pervasive among GBMSM, with more than one in every two GBMSM reporting previous or current use of Grindr, the most popular gay dating app (Badal, Stryker, DeLuca, & Purcell, 2018). It is surprising, then, that so little research has investigated how dating app use may contribute to issues of body satisfaction and weight and shape control behaviours in this population. We seek to address this gap by examining how Grindr influences body image-related outcomes among its userbase.

3.1.1 Internet and Geosocial Networking App Use by GBMSM

The use of Internet-based services by GBMSM for the purposes of networking, dating, and sexual partner seeking can be traced to the early 1990s, when the Internet first achieved widespread commercial availability. Chat rooms, email services and websites such as Geocities, planetout.com, and gay.com became popular venues for GBMSM to interact with lesser risk of arrest, harassment, or violence. Data on rates of Internet use by GBMSM during this time are unavailable, but the proliferation of culturally specific terminology, such as M4M (men for men), serve as evidence of its popularity among this demographic (Grov et al., 2014).

The development of new Internet technologies further promoted online networking between GBMSM for sexual purposes, especially after the uptake of smartphones and the introduction of the mobile application (or “app”) marketplace in 2008 (Grov et al., 2014). Geosocial networking apps (GSNAs) use global positioning system technology to connect users based on physical proximity for chat, dating, or sex (Grosskopf, LeVasseur, & Glaser, 2014). Numerous GSNAs have been developed that target a variety of sub-communities, identities, and sexual interests among GBMSM, including Grindr, Jack’d, Hornet, SCRUFF (for men attracted to facial and body hair), GROWLr (for the “bear” community), and Recon (for the “leather” and general fetish community) (Grov et al., 2014).

Currently, Grindr remains the most widely used GSNA among GBMSM, with an estimated 3 million daily active users across 234 countries and territories (Grindr, 2017). A recent study of over 3000 GBMSM revealed that 78.2% of the sample reported some or frequent use of general dating websites and apps (Badal et al., 2018). The most frequently used app reported by this sample was Grindr, with 60.2% of participants reporting some or frequent use, followed by Adam4Adam (44.1%), Jack’d (35.6%), and SCRUFF (34.3%) (Badal et al., 2018). A similar study assessing app use patterns found that, on average, GBMSM begin using apps around 26 years old and have been using them for over 4 years (Goedel & Duncan, 2015). Most reported using apps to meet other men for sexual encounters (38%), whereas others used them to “kill time” when bored (18.5%), make friends with other men (17.4%), find a boyfriend or romantic partner (14.1%), or meet other gay and bisexual men to date (10.9%) (Goedel & Duncan, 2015).

The extent to which Grindr and other GSNAs are used to facilitate social, romantic, and sexual interactions between GBMSM has motivated researchers to investigate their potential role in various sexual orientation-based health inequalities. Most research to date focuses on sexual health, including the effect of GSNA use on the likelihood of having multiple sex partners (Badal et al., 2018; Chan, 2017), condomless insertive and receptive anal sex (Goedel & Duncan, 2016; Landovitz et al., 2013), disclosure of HIV status (Rhoton et al., 2016), antiviral treatment (Goedel, Halkitis, Greene, Hickson, & Duncan, 2016), and HIV/STI testing (Landovitz et al., 2013). However, little research has been done to investigate the link between GSNA use and body image-related outcomes in this population.

3.1.2 Body Image and Weight and Shape Control Behaviours Among GBMSM

Until the early 1990s, research on body image disturbance and disordered weight and shape control behaviours focused predominantly on women, who have been shown to be disproportionately at risk compared to men (Furnham, Badmin, & Sneade, 2002; Muth & Cash, 1997). Recent work examining differences between men has shown that GBMSM display risk levels that not only exceed heterosexual men, but approach those seen among women (Conner, Johnson & Grogan, 2004; Morrison, Morrison, & Sager, 2004).

Studies assessing aggregate disordered eating symptoms have found that sexual minority men (i.e., those who identify as gay, bisexual, two-spirit, queer, or otherwise non-heterosexual) report greater levels of overall symptoms than their heterosexual counterparts (Calzo, Blashill, Brown, & Argenal, 2017). Purging behaviour, either through vomiting or laxative use, is reported anywhere from 3 to 16 times more frequently by GBMSM than heterosexual men (Matthews-Ewald, Zullig, & Ward, 2014; Watson, Adjei, Saewyc, Homma, & Goodenow, 2017). GBMSM are also more likely to report fasting (i.e., not eating for extended periods of time) (Watson et al., 2017), dieting to lose weight (Matthews-Ewald et al., 2014), and using diet pills for weight loss (Austin, Nelson, Birkett, Calzo, & Everett, 2013; Matthews-Ewald et al., 2014;

Watson et al., 2017). Moreover, rates of disordered weight and shape behaviours may be elevated among racialized GBMSM in particular. In one study, 41.9% of African American bisexual boys reported diet pill use compared to 11.4% of white bisexual boys (Austin et al., 2013).

3.1.3 Links Between Internet-Mediated Communication and Body Image-Related Issues

A nascent body of research confirms the existence of an association between dating app use and adverse body image-related outcomes. Strübel and Petrie (2017) found that for men and women, the use of Tinder – a mobile dating app targeting no specific demographic in terms of gender or sexual orientation – was associated with lower body satisfaction as well as greater body shame, appearance self-monitoring, and likelihood of comparing one's appearance to others. Critically, a recent study from Griffiths, Murray, et al. (2018) also showed a small but statistically significant positive correlation between frequency of dating app use and muscle dissatisfaction ($r = .10$) and thoughts about using anabolic steroids ($r = .09$) among 2,733 sexual minority men from Australia and New Zealand. Thus far, the nature of this association remains unclear – in other words, it has not yet been established how or why GSNA use results in body dissatisfaction and a proclivity towards weight and shape control behaviours in GBMSM.

Other Internet-mediated communication technologies that predate GSNAs have been subject to inquiry regarding the underlying processes that link them to body image issues. In studies of social networking sites, like Facebook, Twitter, Instagram, and Pinterest, social comparison is frequently identified as a mediating variable in the relationship between social media use and body image (Fardouly, Diedrichs, Vartanian, & Halliwell, 2015; Fardouly & Vartanian, 2015; Lewallen & Behm-Morawitz, 2016). Festinger's (1954) social comparison theory explains how individuals process social information as well as develop and maintain a sense of self. The original framework posited humans have an innate motivation to acquire an accurate understanding of the self, and to the extent that “objective” measures (i.e., those based on a self-evident, widely accepted referent) are unavailable, they will rely on comparisons with others to accomplish this feat.

Psychologists have since expanded on social comparison theory’s original premises by making a distinction between upward and downward comparison. Wills (1981) states that individuals engage in downward comparison when they evaluate themselves in reference to those who are perceived to be in a relatively worse position. Conversely, upward comparison involves comparing oneself to those thought to be in a more enviable position. As Suls and colleagues (2002) note, it is not only the direction of comparison that determines affective outcome, but the motivations for and salient implications of comparison. Wood (1989) identified three primary motivations for social comparison: self-evaluation, self-improvement, and self-enhancement. Those who are interested in self-evaluation seek to acquire what they perceive as accurate, unbiased information about the self. In contrast, those oriented toward self-improvement seek information with the intention of modifying one’s own characteristics. On the other hand, self-enhancement uses information gleaned from comparison to protect or enhance one’s self-esteem.

Sexual objectification is another process commonly identified as mediating the association between social networking site use and body image-related issues (Manago et al., 2015; Meier & Gray, 2014). Fredrickson and Roberts (1997) originally defined sexual objectification as the fragmentation and reduction of women’s personhood to their physical features and sexual utility. The pervasiveness of sexual objectification in everyday life is said to result in women acculturating to and internalizing observers’ attitudes that they are objects to be looked at and evaluated solely in terms of their appearance, a process dubbed self-objectification.

Self-objectification, in turn, promotes self-surveillance, or compulsive monitoring of the body's appearance, which ultimately leads to body shame, appearance anxiety, and reduced awareness of internal physiological and psychological states (e.g., hunger, fatigue, and anxiety) (Fredrickson & Roberts, 1997).

Overall, the literature offering a mechanistic explanation for the link between Internet-mediated communication and body image has hitherto been devoid of any consideration for GSNAs. Though many of the key features of GSNAs are also present in more traditional social networking sites, the two also differ in important ways. For instance, both allow users to construct a public or semi-public profile in a bounded digital ecosystem, but GSNAs do not make users' network ties publicly visible, meaning interaction is mostly restricted to private dyads (Ellison & Boyd, 2013). Thus, we cannot assume the theories used in the context of social networking sites are necessarily applicable to GSNAs in the same way, if at all.

The purpose of the present research, then, is to explore how use of Grindr, the most widely-used GSNA among GBMSM, is related to body image, body satisfaction, and weight and shape control behaviours. To that end, the current study seeks to answer the following questions:

1. How does Grindr use relate to body image, body satisfaction, and weight and shape control behaviours in GBMSM in the Greater Toronto Area and surrounding regions in Ontario, Canada?
2. How are Grindr users' identities, previous experiences, values and positionality implicated in the relationship between app use and body image, body satisfaction, and weight and shape control behaviours?

3.2 Method

3.2.1 Participants and Procedure

Given the minimal understanding of GSNAs' impact on body image in GBMSM, we opted for a qualitative methodological approach. Qualitative methods are better suited to answering emerging and open-ended questions, where variables and their interrelations are not readily identifiable. They provide a more holistic account of the phenomenon under study, which may then be used as a reference point for subsequent, more focused research questions (Creswell, 2014).

Ethics clearance for the original study design and all protocol modifications were granted by the University of Waterloo's Office of Research Ethics (ORE #31570). Participants were recruited using purposive sampling. In order to maximize heterogeneity of the sample and to be as inclusive as possible to a range of gender and sexual identity configurations, we imposed minimal restrictions on eligibility criteria. Participants were included if they (a) identify as men, man-aligned, man-adjacent, transmasculine, genderqueer, nonbinary, or otherwise not a cisgender woman; (b) identify as gay, bisexual, queer, two-spirit, are sexually and/or romantically attracted to men, or have previously or currently had sex with men; (c) are 18 or older; and (d) use Grindr to an extent they deem personally significant.

In line with previous studies (Blackwell, Birnholtz, & Abbot, 2015; Bonner-Thompson, 2017; Corriero & Tong, 2016), we recruited participants directly from Grindr. The primary investigator (Eric Filice) created a profile on the app and in his description identified himself as a researcher affiliated with the University of Waterloo, along with providing a brief description of the study. Using the private messaging feature, individuals who reached out to indicate interest in the study were provided further details. Partway through data collection, we discovered a clause in Grindr's most recent terms of service that prohibits making unsolicited offers to users for participation in studies. Though we did not send any messages to users without them first messaging us to indicate their interest in the study, we erred on the side of caution by modifying our recruitment methods and acquiring separate consent from participants to reconfirm their willingness to participate. Additional participants were recruited using flyers that were distributed to local organizations that serve 2SLGBTQ+ persons. Participants were recruited from several cities in the Greater Toronto Area in Ontario, Canada as well as surrounding municipalities. In total, 13 individuals agreed to participate in the current study (8 recruited via Grindr, 5 via local organizations). See Table 1 for participant sociodemographic characteristics.

Table 3.1. Participant characteristics

Characteristic	**Value**
Age	
M (range)	29 (18-65)
Sex/gender	
Man	10
Cisgender man	2
Nonbinary	1
Sexual orientation	
Gay	10
Homosexual	1
Androsexual	1
Queer	1
Racial/ethnic/cultural background	
White (Non-Hispanic)	4
White (Hispanic)	1
Black	2
South Asian	3
Columbian	1
Filipino	1
Native American	1

Note. N = 13.

Data were collected using in-person, semi-structured interviews (Qu & Dumay, 2011). Interview questions spanned a range of topics, including motivations for using Grindr, app-specific behaviours and experiences, impression management strategies, and bodily perceptions and practices. The interview guide (see Table 2) contained questions and probes such as: “What has your experience been like using Grindr? Why do you use Grindr? What are some positive/negative experiences you’ve had while using Grindr? Does Grindr influence how you feel about yourself in any way? How? Why did you choose your current display picture? What did you do to prepare your display picture? What do you like/dislike about your appearance? Why?” Interviews lasted 60 minutes on average and were conducted in a public space mutually agreed upon by the primary investigator and participant. To cover any travel expenses and in appreciation of their time, participants were given $20 CAD in cash at the end of the interview. Interviews were audio recorded and transcribed verbatim. Written consent was acquired from all participants to use their anonymized data in the current manuscript. All personal identifiers were removed from the transcripts and pseudonyms are used in the presentation of results.

Table 3.1. Interview guide

What has your experience been like using Grindr?
• How long have you been on Grindr?
• How often do you use Grindr?
• Why do you use Grindr?
• Are you using any other dating apps? Which ones? How do these apps differ from Grindr?
• How does Grindr differ from other social media platforms (Facebook, Instagram, etc.)?
What do you like about Grindr?
• What are some positive experiences you’ve had while using Grindr?
What do you dislike about Grindr?
• What are some negative experiences you’ve had while using Grindr?
Does Grindr influence how you feel about yourself in any way? How?
• What is it about Grindr that makes it have this effect on your self-perception?
• Does the way you use Grindr in any way determine its influence on your self-perception? How?
• Do you think your identity or any other personal attributes shape your experiences with Grindr? How?
Please describe to me your current display picture on Grindr.
• Why did you choose your current display picture?
• What did you do to prepare your display picture?
How would you describe your experiences with body image?

• What do you like about your appearance? Why?
• What do you dislike about your appearance? Why?

3.2.2 Data Analysis

Data were analyzed using Braun and Clarke’s (2006) framework for thematic analysis. Often characterized as a “generic” qualitative methodology, thematic analysis involves searching across the dataset to identify repeat patterns of meaning. Because of its inherent flexibility, it is necessary to make a number of analytic decisions explicit. First, we decided not to use any absolute frequency threshold to determine what constitutes a theme; instead, we judged potential themes based on salience and how well they fit into the broader narrative woven across interviews as they related to the research questions. Second, we searched for both latent and manifest themes in the transcripts where each seemed appropriate. In some cases, we took statements at face value and understood them as participants’ genuine interpretation of the world. In other instances, we tried to identify underlying assumptions, values and ideologies that inform participants’ statements.

Transcripts were analyzed in the following sequence: (1) immersion in the data; (2) line-by-line coding using a code list developed deductively from a theoretical framework; (3) integrating codes into broader candidate themes; (4) refining candidate themes and developing a thematic map that illustrates connections between themes; and (5) concretely defining themes and supplementing with extracted quotations. Theory was used in a pluralistic inductive-deductive manner. Data were coded and themes articulated using extant theories that detail (a) body image disturbance and disordered weight and shape control etiology; (b) sexual orientation-based disparities in body image-related outcomes; and (c) the impact of social media and other information technologies on body image-related outcomes. In other words, rather than coding all data inductively and making theoretical linkages post hoc, theory was used at the earliest stages of coding to guide our understanding of the data. However, in order to ensure our findings were not pigeonholed to fit existing theory, special focus was given to discrepant findings, which were analyzed inductively.

Our research team collaborated extensively in developing and modifying the study protocol as well as analyzing the results. However, our intention was not to scrupulously cross-check coding schema to achieve near-perfect concordance between independent researchers. Because we embrace the subjectivity inherent in qualitative research rather than attempt to sequester it, we are skeptical of efforts to establish a qualitative simulacrum of inter-rater reliability. Instead of minimizing disagreements, we attended to the content of alternative interpretations that may stem from our varying subjectivities and professional backgrounds to establish a more thorough description of the phenomenon under study (Barbour, 2001). All authors agreed on the presentation of the final themes reported in the Results.

3.3 Results and Discussion

Based on the first research question, which explored how Grindr use is related to body image, body satisfaction, and weight and shape control behaviours, three major themes emerged, each offering a distinct mechanism by which Grindr may impact users' bodily perceptions: weight stigma, sexual objectification, and social comparison. Each theme includes several subthemes that address how Grindr's social dynamics or technical composition enable or modify the aforementioned mechanisms. The second research question, regarding how users' identities and experiences are implicated in the relationship between Grindr and body image, is addressed in the fourth major theme: protective factors and coping strategies. See Table 3 for an overview of the major and sub-themes.

Table 3.3. Overview of major themes and sub-themes.

Major theme	**Associated sub-themes**
Weight stigma	Appearance- and weight-based stigma in private conversation
	Online disinhibition promoting weight stigma
	Asynchronous, text-based communication contributing to online disinhibition
	Dissociative imagination contributing to online disinhibition
	Anonymity and attenuated accountability contributing to online disinhibition
	Substance of disinhibited behaviour shaped by Grindr's purpose
	Codifying weight stigma through representations in advertising materials
	Codifying weight stigma through labelling and search functions
Sexual objectification	Sexual objectification in private conversation
	Normative user attitudes and behaviours promoting sexual objectification on Grindr
	Sexualized self-depictions and their relation to interpersonal objectification
	Codifying sexual objectification through labelling and search functions
Social comparison	Presence of appearance comparisons on Grindr
	Motives for comparison and their relation to body image
	Interpretations of comparison and their relation to body image
	Direction of comparison and its relation to body image
	Impression management via appearance augmentation and its relation to directionality of comparison
Protective factors and coping strategies	Self-esteem
	Social support
	Resilience

3.3.1 Weight Stigma

Nine of the 13 participants reported being subjected to negative comments regarding their appearance in private conversations with other users on Grindr. Though comments are periodically in reference to facial features, skin tone, and height, most often they concern body weight, shape and composition. For Parth, a 19-year-old South Asian gay cisgender man, experiences of body stigma were recurrent enough that it was easier for him to describe them in terms of trends rather than detail specific isolated cases:

> I'm a versatile [someone who is willing to assume either the receptive or penetrative position in anal sex], but I prefer to be a vers [versatile] bottom sometimes, and then everyone's like, "hm...you're tall for a bottom." ... And they're like, "yeah, you're too fat for a bottom." I know I'm not the most twinkiest [young and thin] bottom in town or I'm not the most mascular [masculine and muscular] top. All those things backfire at me. They tell me, "yeah, you don't qualify for this sort of thing."

In Parth's experience, appearance- and weight-based comments are often framed by their ostensible instrumentality in sex. Comments like these re-inscribe normative views among GBMSM that in order for anal sex between men to "work," or be adequately pleasurable, there are de facto height and weight limits for bottoms (receptive partners in anal sex) that must not be exceeded. Likewise, tops (penetrative partners) are expected to be of a certain stature and muscularity to properly fulfill their sexual role. Not coincidentally, bottoming is commonly associated with femininity, whereas topping typically conjures images of traditional masculinity. What Parth describes here, in essence, is a culturally-specific rubric that conflates gender expression, sexual behaviour, and bodily aesthetics. In constructing body shape and size as a relevant criterion in matters of gender and sexual dynamics, scrutiny of the former becomes instrumental in policing boundaries of the latter. This results in certain bodies – those that are not sufficiently thin or muscular, depending on their gender role and sexual position – having reduced social and sexual capital in Grindr's sexual economy. In Parth's case, this translates to difficulties in finding willing sex partners who embrace his body. Repeated rejection and appearance-based criticism have also adversely affected his self-esteem and body satisfaction to the point of engaging in unhealthy weight- and shape-related behaviours, including "wear[ing] oversized sweaters and shirts to hide the fat ... so that they [friends] don't get the full body structure."

In what is considered one of the first and most influential sociological accounts of the subject, Goffman (1963, p. 13) defined stigma as "an attribute that is deeply discrediting" and which reduces individuals "from a whole and usual person to a tainted, discounted one." According to this description, stigma is a social process whereby otherwise neutral personal attributes are imbued with symbolic knowledge to impose moral value on persons. Obesity is considered one such trait that marks its possessors of deviance and inferiority. In psychology and health sciences, weight stigma (or weightism) refers to negative attitudes and beliefs directed toward individuals based on their body weight and/or size, which includes stereotypes (e.g., the idea that persons with larger bodies lack self-discipline), prejudice (e.g., being subject to derogatory comments by health care providers), and discrimination (e.g., being selectively disadvantaged in employment opportunities) (Papadopoulos & Brennan, 2015; Puhl & Heuer, 2009).

Though obesity rates among men continue to rise globally (World Health Organization, 2014), few studies have investigated weightism directed towards men. A recent exception to this comes from Himmelstein et al. (2018), who found that approximately 40% of heterosexual men reported experiencing weight stigma. Griffiths, Brennan, et al. (2018) found sexual minority men report experiences of weight stigma at similar rates (38.9%). An even greater proportion of men in our current study reported experiencing weight stigma, but our results presented here are not intended to be statistically generalizable, making comparison across these studies impossible. Future quantitative research should investigate whether weight stigma is greater among GSNA-using GBMSM compared to non-users.

Experiences of weightism have been shown to be associated with lower body satisfaction and disordered weight and shape control behaviours (Eisenberg, Neumark-Sztainer, & Story, 2003; Farrow & Tarrant, 2009; Haines et al., 2006). Other studies show experiences of weightism mediate the association between body mass index (BMI) and psychological quality of life (Hunger & Major, 2015; Latner, Durso, & Mond, 2013), suggesting it is not simply weight itself, but attendant phenomena such as weight stigma that explain why persons with larger bodies experience lower levels of psychological well-being.

Key to weight stigma's pernicious psychological and social effects is that it is not directed at all body shapes and sizes equally. Among women, weightism and BMI demonstrate a linear relationship in that weightism becomes more frequent with increasing BMI (Puhl & Brownell, 2001). This is likely due to Western cultural norms that position thinness as the "ideal" body shape for women (Puhl & Brownell, 2001). In contrast, both gay and heterosexual men tend to value lean muscularity (Tiggemann, Martins, & Kirkbride, 2009). It would follow from this point – and indeed, it has been shown – that weightism has a curvilinear (U-shaped) relationship with BMI among sexual minority men, such that those classified as either underweight or overweight are treated worse than those in the "normal" weight range. However, a strong linear component was also observed: overall, weightism increased with BMI, and those classified as obese experienced the greatest levels of weightism (Griffiths, Brennan, et al., 2018). This is consistent with the findings of the current study that suggest weight stigma among Grindr-using GBMSM periodically addresses excessive or inappropriate thinness and most frequently targets excessive fatness, but rarely imposes an upper limit on muscularity.

As seven of the 13 participants noted, weight stigma and other improprieties may be expressed more frequently in conversations on Grindr than in person due to some of the inherent features of Internet-mediated communication that are shared by other GSNAs and social media platforms more generally. Mateo, a 26 year-old Columbian gay male, argued that because online conversations are mostly text-based, users cannot refer to body language or other paralinguistic cues to gauge the appropriateness of their comments, resulting more frequently in faux pas:

> It's much harder to say what you mean on a text than it is in person because you could be a person who does a lot of body language and who likes to read someone, or you could be a person who reads people and takes into account how they feel. So would I be calling you this and that? Probably not so much in person because I could see how it's affecting you.

Previous research has demonstrated people more frequently display uncivil or infelicitous behaviour online relative to their offline selves (Castellà et al., 2000; Coe, Kenski, & Rains, 2014). Suler (2004) referred to this phenomenon as the online disinhibition effect. In his original framework, he identified a number of constitutional features of the online social environment that promote disinhibited behaviour, including invisibility, or the lack of physical co-presence which precludes non-lexical elements of communication from guiding the direction and substance of conversation. To explain why stigmatizing attitudes are so prevalent on Grindr, two participants also invoked Suler's (2004) concept of dissociative imagination, or the belief that the online and offline worlds are independent, and that the consequences for certain actions in one are not transferrable to the other. Though it remains unclear whether weight stigma is necessarily more prevalent online than in person, recent evidence indicates negative attitudes toward overweight and obesity are nonetheless remarkably commonplace on mainstream social networking sites. A content analysis of over 4,000 Twitter posts containing the word "fat" found that 56.57% were negative, with 64% of those posts being critical of others instead of self-deprecating. Among the negative posts, common themes associated with fatness included gluttony, undesirability, laziness, and stupidity (Lydecker et al., 2016).

Three participants posited Grindr encourages weight stigma and other forms of disinhibited behaviour to an even greater extent than other social media platforms. This was said to be due to the fact that compared to typical social networking sites and even other GSNAs, Grindr more readily facilitates anonymity, which results in feelings of attenuated accountability. Unlike other platforms, Grindr does not require its users to provide a name, any personal information, link to an external social media platform (e.g., Tinder requires a Facebook profile), or even a profile picture before creating an account and being able to message others.

One participant also suggested stigmatizing attitudes differ qualitatively depending on the social networking platform. In addition to occurring more frequently, derisive comments on Grindr are more likely to target one's appearance because the app's intended focus and many resultant conversations pertain to sex and bodies. Albert, a 54-year-old white gay man, explained:

> Facebook is all about politics and entertainment – different subject matter, but I think the same type of behaviour. Because we're men and we're horny and we want sex, and that's why we're using Grindr, it hurts more in a different way ... Absolutely appearance-based discrimination on Grindr. On Facebook it'll be more ideological. I said something you don't like, you're gonna call me an idiot. I personally have never witnessed any body-shaming or negative remarks about my appearance or looks [on Facebook].

In other words, because Grindr exists to connect users for dating or sex, physical appearance bears greater cultural salience, and is therefore more likely to be reflected in various discourses, including those that perpetuate stigma.

In addition to taking place in private conversation between users, four participants noted weight- and appearance-based stigma is codified through Grindr’s marketing strategies and information architecture. Jackson, a 30-year-old Filipino gay man, observed the following visual trends in the subjects featured in Grindr’s advertising materials:

> When you look at the ads, even on Grindr ads, they’re always going to pick the fit, usually tall – they try to diversify a little bit more but the central image is still there – they’re looking for the fit guys, and those are the images they project, not just here but elsewhere. So that is the sort of archetype that people should try to achieve to feel a little bit better about themselves.

Jackson posits these types of cultural representations have a normalizing discursive effect – they construct the muscular mesomorphic body as ideal but also archetypal for GBMSM. Those whose bodies deviate from these popular depictions are thus made to feel inferior to and excluded from “proper” gay, bisexual, and queer identity. Experimental and correlational evidence have convincingly demonstrated that exposure to commercial mass media is linked to body dissatisfaction and disordered eating in men and women (Agliata & Tantleff-Dunn, 2004; Grabe, Ward, & Hyde, 2008). Perceptions of media influence have similarly been shown to mediate the association between sexual orientation and body image concerns in men (Carper, Negy, & Tantleff-Dunn, 2010). However, mass media continue to target and/or depict GBMSM at lower rates compared to heterosexuals (Oakenfull, McCarthy, & Greenlee, 2008), suggesting there is less “competition” in gay-oriented media to steer public opinion. The relative lack of culturally-specific representations that affirm alternative embodiments could explain why weight stigma perpetuated by Grindr’s promotional materials is perceived to be so culturally salient.

Grindr’s design elements and user interface were also criticized for stigmatizing particular embodiments. At the time of writing, Grindr offers six pre-set text-based categories that may be used to describe one’s body appearance: “toned”, “average”, “large”, “muscular”, “slim”, and “stocky”. Ezra, a 24 year-old white queer man, condemned the absence of the term “fat” and mused about the ideological implications of its omission:

> I can’t even choose to be fat on Grindr. I have to be large or stocky. I don’t know what that means. What does it mean to not be able to choose fat in a space? If you can’t choose fat, you’re not allowing fat people in your space. By virtue of that, you’re communicating that fatness does not equal queerness, and that these are two mutually exclusive identities.

Here, Ezra emphasizes the representational utility of “fat” despite its negative connotation (indeed, his position being in line with many who advocate reclaiming the term [Saguy & Wiley, 2005]). The inability to identify as fat suggests the term does and should continue to exist only as a pejorative. The closest alternatives are “stocky” and “large,” which seem decidedly vague and euphemistic. This communicates to users not only that fat people are unwelcome on the app, but that fatness conflicts with the identificatory possibilities of GBMSM.

In sum, the impact of Grindr on users’ body image appears to be explained at least in part by weight- and appearance-based stigma. Comments made in private conversation between users often invoke attitudes that valorize thinness or muscularity and disparage fatness. These types of comments may be enabled by the dynamics of online interaction that encourage disinhibited social behaviour – a feature shared by other forms of internet-mediated communication, including more traditional social networking sites. However, one component feature of online disinhibition – anonymity – could be more prominent on Grindr than other GSNAs or social networking sites. As well, disinhibited behaviour on Grindr could be more likely to involve weight stigma because the app’s intended purpose of facilitating casual sex makes appearance a central focus. Separate from individual interactions, Grindr is also thought to codify weight stigma in its selective representation of muscular mesomorphic bodies in its marketing materials, as well as by excluding fatness from the app’s labelling and search functions.

3.3.2 Sexual Objectification

Six participants expressed their frustration with the frequency at which other users display objectifying attitudes and behaviours on Grindr. In contrast to stigmatizing comments, which emphasize the recipient’s deviance or inferiority, objectifying behaviours were said to have a uniquely reductive and/or dehumanizing dimension. Jackson noted that to be on the receiving end of such acts is to feel:

> That I’m an object, basically. That’s what I feels like. You’re sending me a photo of your dick and typically you’re expecting to want to fuck me, I’m assuming. You’re treating me like an object, not a person.

Along with sending unsolicited nude photos, other common behaviours deemed objectifying include being excessively lewd in casual conversation and offering payment in exchange for sexual services.

Though objectification theory was originally developed to explain the lived experiences of women, recent evidence indicates GBMSM are also vulnerable to both objectification by others (Brewster et al., 2017; Wiseman & Moradi, 2010) and the self (Kozak, Frankenhauser, & Roberts, 2009). As well, many of the posited downstream effects of objectification have been observed among GBMSM, including body surveillance, body shame, and disordered eating (Schaefer & Thompson, 2018; Wiseman & Moradi, 2010). Sexual orientation has also been shown to mediate the effect of gender on objectification such that GBMSM are more likely to have experienced objectification than their heterosexual counterparts (Schaefer & Thompson, 2018). To date, this discrepancy has mostly been explained through sociocultural approaches. For instance, Wood (2008) argues that the “male gaze,” a term used to describe heterosexual men’s tendency to perceive and depict women through a lens of sexual desire, is also highly salient among GBMSM. It is suggested that prolonged immersion in the “gay male gaze” leads GBMSM to internalize ideas about the importance of physical appearance, resulting in greater rates of self-objectification (Martins, Tiggemann, & Kirkbride, 2007).

Indeed, findings from the current study suggest objectification may be more common on Grindr than other social media platforms as a consequence of the social and cultural tendencies of its primarily gay/bisexual male userbase. Four participants conjectured the pervasiveness of self- and other-objectification on Grindr is explained by the fact that the app is populated almost entirely by men attracted to other men – these individuals occupy a unique gendered subject position where, unlike heterosexual men and women, they are equally likely to be perpetrators and targets of sexual objectification. Albert explained:

> I objectify men all the time. Why would I be upset if someone did that to me? We keep being told not to objectify women, but as gay men we do it to each other all the time – at least, the majority of gay men I know ... but nobody’s told us not to.

Here, Albert echoes Wood’s (2008) contention that the persistence of certain issues among GBMSM that stem from gender-based power asymmetries, like sexual objectification, reflect a historical community-level reluctance to engage critically with issues of gender-based oppression compared to feminist and lesbian circles. When these individuals then coalesce in a unified digital ecosystem where the implicit goal is to locate sexual partners, objectification is seen as a practical inevitability.

Recent empirical evidence has confirmed that Grindr users are more likely to objectify other men compared to non-users. Additionally, those who reported using Grindr to find sexual partners instead of friends, relationships or networking opportunities were more likely to present themselves in a sexualized manner in their profile, including being topless and focusing on their body to a greater degree in their profile pictures. Moreover, greater levels of self-objectification were reported among those who had a sexualized profile picture and who use the app to find sex partners, suggesting sex-motivated self-presentational strategies underpin the increased levels of objectification on Grindr (Anderson et al., 2018).

Consistent with the aforementioned findings, four participants in our study indicated their choice to display themselves topless, focus on their body, or frame their appearance in an overtly sexualized manner in their profile pictures on Grindr was part of a deliberate self-presentational strategy to stimulate sexual interest in other users and procure casual sex. Aaron, an 18 year-old white androsexual gender-nonconforming person, explained their choice in profile picture as follows:

> I’m always shirtless. Never have I posted a photo on Grindr where I have not been shirtless, showing my body, or teasing – slightly pulling my pants down, or being in boxers, or something like that. Definitely a more sexual pose that you would put on there. I don’t know ... I want guys on there to see that I can ... look good.

An additional four participants confirmed that the abundance of sexualized displays like Aaron’s are a hallmark feature of Grindr. Though it was acknowledged some users display only “headless torsos” in their pictures to conceal their identity, especially those who are not “out,” the majority of cases were thought to be users attempting to telegraph their interest in casual sex. It is conceivable that the preponderance of self-objectifying sexualized depictions also contributes to objectification of others – just as experiences of objectification are internalized with repetition, so to may habitual self-objectification lead individuals to see it acceptable to treat others the same way. Indeed, evidence showing a strong link between self-objectification and objectification of others in gay but not heterosexual men implies the two processes are interrelated, and moreover, that this phenomenon is a unique element of gay male subjectivity (Kozak et al., 2009).

Participants' responses also indicate that like stigma, objectification on Grindr is enabled not only by the existing proclivities of its userbase, but by specific design elements of the app. For instance, one of Grindr's most basic curatorial functions allows users to categorize themselves and systematically filter other users from search results according to either discrete physical features (e.g., weight, height, age, body type) or "tribes," which are culturally-specific terminology that evoke certain gendered and aesthetic schema (e.g., twink, bear, clean-cut, jock). Five participants noted that these categories, though useful for locating potential partners whose traits correspond to one's own erotic preferences, are vulnerable to misuse. Ezra argued, for example, that the ability to screen users based on a limited number of physical features without having to consider the whole person promotes the fragmentation of individuals into their constituent elements, a defining feature of objectification:

> So you have to classify the type of body you have, which literally puts you...you become categories that people can select and choose as if your body and your identity is a choice for someone else to just decide what they want. And then the idea of being able to filter, so you can literally be like, "I only want to see a muscle boy." Even giving people the option? No. People should have to stare at every single fucking body in their face, and if you have to look at a fat person, I don't give a shit.

Ezra also points out that technologies which enable sexual objectification are not deployed equally with respect to bodily aesthetics. In allowing users to tease apart discrete physical features and sort them according to preference, there are clear winners and losers – weight cut-offs and several of the more popular categories like "jock" (i.e., athletic build) and "twink" (i.e., thin and young) serve explicitly to exclude persons with larger bodies from search results. This offers a compelling example of how objectification processes can also be wielded to enact weight- and appearance-based stigma.

Overall, the pervasiveness of objectification on Grindr, like weight stigma, was posited to be a result of interactions between users' existing social-cultural tendencies and constitutional elements of the app itself. Objectification was seen as a logical consequence of bringing together men of a specific demographic who are uniquely vulnerable to being objectified in a digital space structured around sex. Sexualized self-depictions in profile pictures, which are often used to telegraph interest in casual sex, also serve to reinforce interpersonal objectification. A collective mentality oriented toward objectification is further cemented through Grindr's use of appearance-based descriptive categories and tribes, which direct attention to the body over personality and promote reductive and atomizing views of personhood.

3.3.3 Social Comparison

Apart from appearance-based stigma and objectification, six participants noted body dissatisfaction also stems from the act of appearance comparison. Haroon, a 30-year-old Pakistani gay man, asserted that social comparison is indispensable to developing an awareness of self, and that nearly all forms of social influence present opportunities for comparison:

> I mean, obviously you develop this [body dissatisfaction] from society's expectations of you, right? You look at others, and you look at yourself, and you compare and you

> contrast ... You watch movies, you see what is depicted in these images as what you’re supposed to look like, and you compare yourself, and you’re like, y’know, you could work on yourself and have a six pack as opposed to a fat belly.

Haroon suggests interactions and representations need not overtly place the body under scrutiny to foment dissatisfaction. Consistent with this claim, Griffiths, Brennan, et al. (2018) found body dissatisfaction mediates the link between BMI and psychological quality of life independent of weightism, suggesting larger men’s body dissatisfaction is not entirely explained by the stigma they experience. In gay men, appearance comparison has been shown to mediate the link between five different sources of social influence (partners, family, friends, gay community, media), body dissatisfaction and body change behaviours (Tylka & Andorka, 2012).

Participants’ responses did not seem to indicate that social comparison was necessarily more likely to occur in the context of Grindr than other online or in-person interactions, but the direction of comparison and its underlying motivations may differ in a way that alters its psychological impact. Of those who affirmed their tendency to engage in comparison with others, none detailed any scenarios where aspirational, improvement-oriented attitudes predominated over evaluation-oriented attitudes in their subjective interpretations of comparison. Adnan, a 27-year-old South Asian gay man, offers a typical example where comparisons guided by a desire to establish one’s relative standing produce an evaluation focused on the points of divergence between the self and the comparison target:

> In terms of social media – Instagram and Grindr – like, I follow other gay men who I think are attractive, and you see their profiles and these platforms, and obviously you’ll see very muscular guys ... That definitely feeds into how I view myself and I definitely feel like ... not that I want to display myself like that, because you’ll never catch me dead

> out in a crop top, but just knowing that ... I feel like I don’t even have that option because I don’t have the body for it, or I’m not comfortable in my own skin to go out and do that. That definitely feeds in – viewing how other people display themselves on these platforms definitely has this effect on my own self-esteem and how I feel myself.

At no point does Adnan appear to entertain the idea that the muscular physique he sees on other Grindr and Instagram users is reasonably attainable for himself. Instead of being motivated to achieve greater congruence with these users, he languishes in his awareness of their difference. Empirical evidence similarly suggests that comparisons driven by a desire to evaluate rather than improve oneself are more likely to promote body image-related issues. Halliwell and Ditmar (2005) found comparison to thin models was associated with greater appearance anxiety among those predominantly focused on self-evaluation compared to those focused on self-improvement.

Salient interpretations drawn from comparisons also warrant attention, namely, whether one sees themselves as being similar to or different from the target of comparison. At first glance, it seems comparisons that fixate on how one differs from others elicit feelings of body dissatisfaction. However, probing Adnan’s comments further reveals additional contextual elements that suggest this may not always be the case. In his view, muscularity offers practical benefits beyond being aesthetically pleasing – it changes how one may comport themselves and navigate public space. Muscular men are free to wear crop tops without fear of being subjected to harassment (at least in spaces where sartorial forms of gender expression are less rigidly policed according to binary gender norms) because their features which the garment accentuates conform to cultural ideals. Thus, at least to Adnan, muscularity is more desirable or socially serviceable compared to his current physical state. It is therefore in the broader context of upward comparison that cognizance of dissimilarity results in body dissatisfaction. Would Adnan have the same emotive response if he were to perceive himself unlike someone whose appearance he considers suboptimal to his own? We speculate this is unlikely. Suls et al. (2002) similarly contend the psychological impact of comparison depends on the interactions between its motivations (e.g., self-evaluation, improvement or enhancement), interpretations (perceptions of congruence or incongruence), and direction (upward or downward).

The manner in which participants described their own and other Grindr users' presentational strategies gives us reason to suspect upward comparisons outnumber downward comparisons on the app, and indeed, that this discrepancy is more pronounced on Grindr relative to comparisons made in person. Six participants indicated a vested interest in presenting themselves in the most appealing manner possible on Grindr, the underlying motivation often being to maximize one's pool of potential sexual and romantic partners. Some showed interest in catching people's attention through humorous or thought-provoking profile descriptions, but most often, efforts were focused on one's display picture. A number of strategies were identified for producing a more appealing picture, including: using photos that previously elicited positive feedback from peers; using optimal lighting conditions; digitally modifying photos, such as applying filters, removing blemishes, slimming the face or waist, and morphing the jawline; holding in the stomach or adjusting one's posture to minimize the appearance of abdominal fat; and leaving features one is self-conscious about out of frame.

Four participants asserted the majority of Grindr users are modifying their photos or using other impression management strategies in some capacity. In defense of their own habit of retouching their photos, two participants suggested the practice is so widespread that it has come to be considered normative. An additional two participants described Grindr's social dynamic as a sort of "competition" for the limited time and attention of other users. In this context, where success in securing the interest of potential romantic and sexual partners often hinges on capitulating to an objectifying gaze, appearance augmentation becomes virtually requisite to remain competitive. This collective practice of impression management has important implications for the direction in which comparisons are generally being made on Grindr. Instead of comparing respective online personas, people are often comparing their candid, in-person appearance to the meticulously curated – and in many cases digitally altered or fabricated – appearances of others they encounter online. Because these comparisons are asymmetrical at the outset, more often than not they result in feelings of inadequacy and dejection. Albert expressed concern that GBMSM's body dissatisfaction will only worsen as image editing technologies become more sophisticated and competition intensifies:

> We have to be better, prettier, more masculine, more buff. And I think that's taking a huge toll on men because we can't live up to the expectations we create for ourselves and for each other. And I think it's sad, because we're real human beings. We're not super models, which is what I think people are coming to expect more and more on there [Grindr]. So people are killing themselves with technology trying to make themselves like said super models. I'm glad I'm not single, because if I didn't have a husband to go home to I think I would be incredibly depressed, if not suicidal over Grindr.

Albert suggests that because of smartphones, appearance augmentation technologies that were previously accessible only to those in fashion, marketing and mass media have been made available to the general public. With industry insider tools in hand, laypersons may begin to take for granted the authenticity or attainability of the "super model" look and attempt to replicate it. As a result, upward comparisons typically associated with traditional mass media may also be observed in peer-generated media, including Grindr. Previous research has shown that social media users are driven to present an idealized version of themselves (Zhao, Grasmuck, & Martin, 2008) and that this is sometimes accomplished through digitally editing self-photographs (Chua & Chang, 2016). Moreover, Vogel et al. (2014) found Facebook use was associated with both upward and downward social comparison, but only the former was linked to reductions in self-esteem. The authors suggest that because social media offers users the means to present an idealized version of themselves by selectively displaying only their most desirable traits, the majority of appraisals that occur online are upward rather than downward.

Overall, participants' responses indicate social comparison is an additional mechanism through which Grindr use impacts body image. We lack evidence to conclude that Grindr users are in any way more inclined to engage in comparison than non-users, but normative user practices (namely, impression management via appearance augmentation) appear to affect the motives, interpretations and direction of comparison in such a way that its psychological outcomes differ from in-person comparison. Our findings also suggest the established links between social media use, appearance augmentation and upward comparison apply similarly to Grindr. However, additional data are required to conclude whether the body image-related outcomes of social comparison differ meaningfully between Grindr and traditional social networking sites.

3.3.4 Protective Factors and Coping Strategies

Nine of 13 participants suggested that using Grindr adversely affected their body satisfaction to some degree. The remaining four asserted that, at least at the time of being interviewed, the two phenomena were unrelated. Probing further, we uncovered several self-identified psychosocial factors that may differentiate those who perceive themselves to be negatively impacted by Grindr and those who do not. Overall, those with higher reported self-esteem displayed greater satisfaction with their bodies and believed they had more control over how Grindr affects their relationship with their body. Nick, an 18-year-old Black gay man, surmised it was his basal level of self-esteem that shielded him from the psychological harms of stigmatizing interactions and even allowed him to have an enjoyable experience with the app:

> If you’re not strong enough to break through the bad comments, Grindr can destroy you. It can hurt you in a way that you don’t want to be hurt, especially because people on there don’t care about each other. They’re just there to get a nut, and I honestly believe that. But if you are confident in yourself, and you realize your worth, Grindr can be a somewhat good experience. Not out of the blue, but if you weren’t so low self-esteem.

Interestingly, Nick was the only participant to note that Grindr previously contributed to his body dissatisfaction but no longer continues to do so. He began using Grindr at the age of 16, when he still considered himself to be lacking confidence and vulnerable to others’ judgment with regard to his appearance. At this point in time, negative experiences on Grindr often agitated his appearance-related insecurities. Since then, Nick has focused consciously on prioritizing his own emotional well-being as a form of self-preservation, including embracing his physical features that hitherto elicited scorn. Now referring to himself hyperbolically as a “narcissist,” he feels the self-esteem he has cultivated affords protection against the stigma and rejection he experiences on Grindr.

Previous theoretical and empirical research on mass and social media offer potential mechanisms by which self-esteem protects against body dissatisfaction related to Grindr use. In his transactional model detailing how and under what circumstances social media use promotes body image-related issues, Perloff (2014) identifies a number of so-called individual vulnerability factors that drive persons to seek validation through social media, thus making themselves susceptible to the attendant psychosocial processes that lead to body dissatisfaction and its sequelae. Low self-esteem is considered an individual vulnerability factor, as well as depression, thin-ideal internalization, centrality of appearance to self-worth, and perfectionism. Perloff suggests these factors not only encourage social media use in the first place, but also exacerbate mediating psychosocial processes, like social comparison. Empirical evidence has demonstrated those with lower self-esteem are less inclined to repair negative emotions after a failure event, suggesting self-preserving strategies like downward social comparison may be employed less frequently than their comparatively more deleterious upward variants (Heimpel et al., 2002). Additional research indicates low self-esteem predicts body dissatisfaction (Kostanski & Gullone, 1998; Mitchell et al., 2012) as well as moderates the relationship between exposure to objectifying mass media and bodily self-perception (Mischner et al., 2013).

Trait self-esteem, and by extension body satisfaction, were also thought to depend on the level of interpersonal support one receives. Growing up with supportive family and friends that are affirmative towards one’s appearance reportedly offers resilience against derisive comments or rejection on Grindr. Mateo illustrated this point as follows:

> My family was great and I always thought I looked good because my mom, my dad, my brother ... people told me I looked good. I take comments and I accept comments. But not everyone has that. Everyone is always looking for validation, regardless of what you believe.

Mateo’s last remark concerning validation suggests self-esteem is difficult, if not impossible, to cultivate in the absence of social support. A wealth of evidence demonstrating a correlation between the two seems to support this notion (Brown et al., 1986; Goodwin et al., 2004). This would also imply that Nick could not have elevated his self-esteem to “narcissistic” levels without input from others, and indeed, he notes how affirming comments and propositions for sex from other users on Grindr boosted his confidence even while family and peers continued to criticize his appearance. This points to how individuals may turn to Grindr and other forms of social media to receive validation when the necessary social supports are not in place. According to Perloff (2014), this then sets in motion a positive feedback mechanism whereby social comparison and other processes lead to further body dissatisfaction, in turn encouraging still even greater user of social media.

Finally, five participants suggested resisting the harmful effects of Grindr on self-esteem and body satisfaction is a form of resilience that must be developed with time, experience, and sustained effort. Adnan noted, for example, that familiarizing himself with Grindr’s social dynamics through extended use has improved his ability to pre-emptively detect and avoid situations that would stir his appearance insecurities:

> I feel like it [Grindr] doesn’t have a positive effect on how I perceive myself, but I also learned how to navigate it, and how to shield myself from people judging me, so I’ve become ... not immune to it, but I’ve sort of learned to avoid the negative confrontation of people who are out there who are upholding those body ideals and want to project those body ideals onto me. I’ve learned to build that wall where they can’t.

Importantly, Adnan acknowledges that his protective strategies do not afford total invulnerability. It is conceivable that his current techniques mark an improvement over previous forms, or that they may further improve with additional experience. This also implies the degree to which Grindr impacts body image is likely better understood in gradations, rather than a binary state in which Grindr either does or does not have any discernible effect. Moreover, the nature and strength of this relationship seems to depend on the complex interactions between users’ psychological characteristics (e.g. self-esteem), the broader social-cultural environment (e.g., social support), and patterns in app use (e.g., duration and intensity of use, use of protective and coping strategies).

3.4 Summary, Limitations and Future Research Directions

Based on recent findings that show a statistically significant association between dating app use and body dissatisfaction among GBMSM (Griffiths, Murray, Krug, & McLean, 2018), the aim of the current study was to explore how Grindr use is related to body image, body satisfaction, and weight and shape control behaviours, as well as how these relationships vary according to users’ identities, behaviours and experiences. We identified three primary mechanisms through which Grindr impacts users’ body image: weight stigma, sexual objectification, and social comparison. In each case, normative user attitudes and behaviours appear to interact with app-specific elements to affect bodily perceptions in a way that differ in form or intensity from social influence via offline interaction. Though GSNAs differ in structure and function from traditional social networking sites, the aforementioned mechanisms that promote body dissatisfaction are enabled by many shared features, such as asynchronous, text-based communication and technology-assisted appearance augmentation. Some of Grindr’s more distinguishing features could also make the impact of certain mechanisms more pronounced, like the app’s express focus on facilitating casual sex, which was said to contribute to more frequent experiences of appearance stigma and sexual objectification compared to platforms like Facebook and Twitter. Moreover, the presence of protective factors and coping strategies suggests that Grindr, like other information technologies, does not affect body image in fixed ways; rather, its potential impact is dependent on who is using it, how it is used, for what purpose, and in what social and cultural contexts.

One of the most noteworthy limitations of the current study involves the paucity of individuals in our sample who, based on inferences we may draw from existing participants' responses, may indicate a positive relationship between Grindr use and body satisfaction. The majority of interviewees reported being at least partly dissatisfied with their appearance, and few, if any, can be said to present the combination of characteristics participants considered ideally suited to garnering social and sexual capital on Grindr (e.g., white, young, muscular-mesomorphic, masculine gender-conforming). Without interviewing more individuals of this type, we cannot say with certainty that Grindr's relationship with body image is strictly antagonistic. It is conceivable that individuals whose identities and embodiments conform to hegemonic standards, as well as those who already report high body satisfaction, view Grindr as a source of affirmation. Future studies should purposively sample those thought to occupy dominant positions in Grindr's sexual economy to determine whether their experiences differ. Another limitation concerning participant characteristics is the lack of individuals who identify as trans, genderqueer, nonbinary, gender-nonconforming, or otherwise not a cisgender man. Theoretical accounts of trans embodiment and gender dysphoria exhibit striking conceptual similarities to eminent theories of body image disorder etiology (see Salamon, 2004 for an analysis of trans identity as an acknowledgment of the discontinuity between one's internalized body image and physiological coordinates), and evidence indicates gender nonconformity is associated with body dissatisfaction and disordered weight and shape control behaviours (Blashill, 2011; Strong, Singh, & Randall, 2000). Moreover, participants in our study suggested gender and bodily stigma are interdependent in the context of Grindr. It would be worthwhile to inquire into trans individuals' experiences in future studies to gain additional insight into how gender dysphoria and body dissatisfaction intersect, as well as how experiences of gender and bodily stigma differentially impact those who are more visibly gender nonconforming.

In addition to addressing these limitations, future research should examine whether the observations made here apply to other GSNAs. As noted earlier, though Grindr is the most popular GSNA among GBMSM, a plethora of alternatives exist, and many are using multiple apps simultaneously. These apps can differ markedly in terms of the demographics they target as well as how they operate, and consequently there is potential for them to impact users' body image to a different degree or through alternate mechanisms compared to Grindr. For instance, Nick expressed much greater fondness for GROWLr, which he claimed is host to users who overall are more accepting of and sexually attracted to individuals with larger bodies. He goes as far as to describe the app as offering a sort of respite from the pervasive weight stigma he experiences on Grindr. In this sense, it is possible that some GSNAs even offer protection against body dissatisfaction. To establish this, however, future studies will need to disaggregate "dating apps" as an all-encompassing category and analyze how and to what extent they influence body image on an individual basis.

In sum, our findings suggest Grindr's relationship with body image is embedded in a complex web of causation that reflects the situated and emergent interactions between technology, user and environment. As such, efforts to minimize the role information technologies play in maintaining sexual orientation-based disparities in body image disorders must be equally adaptive.

Chapter 4. Study III

Citation: Filice, E., Johnson, C.W., Parry, D.C., & Oakes, H. Shades of digital deception: Self-presentation among men seeking men on locative dating apps. Convergence (revisions submitted March 2021).

Abstract: In recent years, location-based real-time dating apps like Grindr and Tinder have assumed an increasingly pivotal role in brokering socio-sexual relations between men seeking men and have proven to be fertile ground for the study of identity negotiation and impression management. However, current research has given insufficient consideration to how various contextual elements of technology use shape self-presentation behaviour. Through analysis of interview data, we found impression construction on these apps reflects tensions between authentic depiction of the self-concept and self-enhancement qua deception. Whether and the extent to which one engages in deception depends on how a number of technological affordances, platform-specific community norms, and userbase characteristics interact with each other. In part, self-presentational choices were a result of the additive effect of various determinants, some facilitating of deception (e.g., reduced cues, belief in the normalcy of lying, norms of self-objectification and competitiveness, and concerns of managing sexual identity-related stigma) and others constraining (e.g., expectation of brokering physical connection). Impression construction determinants also to some extent interact multiplicatively, that is, in a way where the influence of one is dependent on another. This was most plainly evidenced in the interactions between stigma management concerns, the affordances of audience visibility/control and locatability, and common ground reinforcing social hierarchy.

4.1 Introduction

Over the past couple decades, networked technologies have assumed an increasingly pivotal role in brokering interpersonal connections of a romantic, sexual or otherwise intimate character. In 2019, 30% of US adults reported having previously used an online dating website or mobile dating app, up from 11% in 2013 (Anderson, Vogels & Turner, 2020). Non-heterosexuals are especially keen adopters of such technologies, with approximately four-in-ten individuals in same-sex relationships (37%) reporting having met their partner online compared to 11% of individuals in different-sex relationships (Brown, 2019). As others have noted, there is social and historical precedent for the vigorous uptake of dating technologies by sexual minorities, particularly gay, bisexual and other men who have sex with men (GBMSM). Since same-sex attraction is both (a) culturally stigmatized and (b) an invisible or only partly visible trait, the internet has long been valued as a means of identifying other GBMSM and communicating one's sexual or romantic intentions with lesser risk of harassment, violence, or arrest, in much the same way as the "handkerchief code" deployed in the pre-digital era (Birnholtz et al., 2014; Grov et al., 2014; Gudelunas, 2012).

Dating technologies themselves have undergone significant transformation in recent years. In the first decade of the new millennium, online dating mostly took place through more traditional "web-based dating sites" (Gudelunas, 2012), like Match, eHarmony, and OkCupid. These sites were tethered to personal computers and connected individuals only within a general geographic area, usually manually inputted by the user, and not based on any finer degree of proximity (Blackwell, Birnholtz & Abbot, 2015). Since then, a class of software for mobile devices sometimes referred to as location-based real-time dating apps (LBRTDAs) (Handel & Schlovski, 2012) have gained considerable traction. According to Miles (2018), LBRTDAs are distinguished by their convergent use of spatial coordinates, mobile signal, and satellite position via GPS to situate users with cartographic specificity. Users are then typically displayed to each other en masse in a social grid by order of distance. This is intended to both reduce the time spent searching for potential matches as well as shorten the distance between users, thereby expediting relationship initiation and transition to offline, face-to-face encounter (Miles, 2017), as reflected in the apps' technological infrastructure and marketing which "communicate a narrative of immediacy and efficiency." (Miles, 2018, p. 6) Though some LBRTDAs are popular among heterosexuals (e.g., Tinder, Bumble), these apps have a longer history of use among GBMSM. Grindr is widely considered the first ever LBRTDA. Originally released in 2009, it is expressly marketed for use by "gay, bi, trans, and queer people" (Grindr, 2020). A recent survey of over 3,000 GBMSM revealed Grindr to be the most frequently used app, with 60.2% of the sample reporting some or frequent use. Other widely-used GBMSM-targeted LBRTDAs include SCRUFF, Jack'd, and Recon (Badal et al., 2018).

Many of the most common LBRTDAs present users with a grid or list of profile thumbnails that are arranged in order of geographic proximity to the active user. To access a profile, users click on the thumbnail. From the profile, users can write each other text messages or send a preprogrammed message via one of 3 'taps' on Grindr (i.e., 'Hi there!,' 'You're hot,' 'Are you looking [for sex]?'), a 'Woof' on SCRUFF, or 'cruising' a profile on Recon. Across Grindr, SCRUFF, and Recon, users are afforded many similar markers for profile construction (e.g., display name, geographical distance from other users, online status, demographics, sexual information [e.g., position preference, safe sex practices], relationship status, intent [e.g., chats, friendship, casual sex]), but also certain app-specific options. For example, Grindr users can indicate their gender and pronouns, SCRUFF users can indicate communities (e.g., queer, college, jock) of interest, and Recon users can select 5 (of 26) kink interests. Users on Grindr and SCRUFF can also link their profiles to other social media accounts (e.g., Facebook, Instagram, Twitter). Beyond categorical identity markers, all three GSNAs also provide users open-ended fields to describe themselves, which differ in the amount of allotted space.

LBRTDAs' pervasiveness in contemporary gay male socio-sexual relations has spurred inquiry into their influence on various social-psychological phenomena, including "risky" sexual behaviours (Goedel & Duncan, 2016), relationship development and maintenance (Licoppe, Rivière & Morel, 2016; Møller & Petersen, 2018; Race, 2015), and community structure and dynamics (Miles, 2017; Mowlabocus, 2010). Another area that has captured researchers' interest, and is the focus of the present study, is identity negotiation and presentation of the self (e.g., Birnholtz et al., 2014; Blackwell, Birnholtz & Abbott, 2015; Bonner-Thompson, 2017; Chan, 2016; Jaspal, 2017; Miller, 2015; 2018). It is well established that self-presentation plays an important role in relationship development, and thus is pertinent to dating technologies. Particularly in the early stages of relationship initiation, individuals rely heavily on impressions others generate to determine if they wish to pursue deeper levels of connection (Derlega et al., 1987; Taylor & Altman, 1987). Research suggests that individuals are cognizant of this fact, and on first dates will alter their behaviour to conform with what they assume are the values held by their potential companion (Rowatt, Cunningham, & Druen, 1998). In the present study, we use narrative interview data to explore how various features and contingencies of LBRTDA use interact to shape GBMSM's self-presentation behaviour, including facets of the communication technology itself, individual user idiosyncrasies, and the encompassing social context. First, we present an overview of the literature informing our theoretical framework.

4.2 Background

4.2.1 Symbolic interactionism and identity negotiation

Scholarship on technology-mediated construction and display of identity has traditionally been undertaken either from the vantage of symbolic interactionism or postmodernism-poststructuralism, which differ primarily with respect to how they make sense of the "performative interval" that interposes the subject's sense of self and social action. Whereas interactionists treat this discontinuity as a springboard to investigate how individuals, in pursuit of consolidating a more-or-less stable interiority, attempt to bridge the divide between expressions and the identities they signify, poststructuralists focus on the disjunct between these poles – or individuals' performative failures – to evidence a purely discursive self devoid of such an interiority (Green, 2007). For postmodernists and poststructuralists, who reject interactionist notions of a socially-derived master-self, virtual environments are quintessential "liminal spaces" wherein identity displays are decoupled from their embodiment, relieved of the constraints of corporeal warrant, allowing for greater experimentation and creative play (Lupton, 1995; Stone, 1996; Turkle, 1995). As Robinson (2007) critiques, however, these suppositions are somewhat of an anachronism based on the backgrounds and usage patterns of modern internet users. While the typical user in the 90's was a white, affluent man with a penchant for fantasy role-playing games, today's users are more heterogeneous in terms of race, socioeconomic status and gender (Duggan & Brenner, 2013), and are oriented to technology more as a way to augment and extend, rather than escape, offline life (Kennedy, 2006; Subrahmanyam & Šmahel, 2010). We hence echo Robinson's (2007) assertion of the continued relevance of interactionist conceptions of self, and by extension dramaturgical analyses of self-expression, detailed in the following section.

4.2.2 Self-presentation

Self-presentation refers to the goal-directed activity of controlling information in order to influence the impressions others form of oneself (Schlenker, 2012). In his original formulation, Goffman (1959) argued that individuals almost always pursue interaction in light of an ultimate objective and/or series of underlying motives, consciously or otherwise. This can include spurring an observer to perceive oneself in a certain way, ensuring sufficient interactional harmony to sustain relationships, or maximizing the social and material rewards of interaction. To that end, individuals will try to impress upon audiences a particular “definition of the situation” (Goffman, 1959, p.4) that would lead them to act voluntarily in ways conducive to the fulfillment of said goals. Because the nature of social reality is such that it can only be inferred to a limited degree of accuracy from communicative gestures, it is not incumbent that these impressions be incidental to or an uncontrived expression of a certain “real” state of affairs for them to achieve their intended effects – the impression fostered need only convince observers of such. Thus, when an individual stages a performance they entreat observers to accept the version of reality offered, including claims as to the true nature of oneself. Of most central concern, then, is whether one’s performance will be credited or discredited. The primary means audiences have of establishing the credibility of a performance is evaluating internal consistency by cross-checking expressions “given” against those “given off.” Expressions given are signifying acts over which the performer has conscious control and can manipulate with relative ease, most usually verbal assertions. Conversely, expressions given off are those that evade conscious awareness or are difficult to control by the performer and thus unwittingly “leak out,” like nonverbal expressions and appearance. The successful performer must ensure any self- or reality-claims made are not contradicted by their actions or contextual information, lest they be revealed a fraud (Goffman, 1959).

Despite Goffman's exhaustive cataloguing of the techniques employed in impression management, Leary and Kowalski (1990) found his framework to be lacking any systematic consideration for the antecedent factors that motivate self-presentation and shape its content. To remedy this, they propose a model separating self-presentation into two distinct processes: impression motivation, or the reasons why people choose to engage in impression management and the factors affecting their drive to do so, and impression construction, or the factors that inform the kind of impression one chooses to generate and how they go about it. Alongside established factors such as self-concept, social norms and audience values, Toma and Hancock (2010) advise communication medium be added to Leary and Kowalski's (1990) two-component model as a determinant of impression construction. However, we are still for want of a mechanistic explanation as to how impression management and communication medium are linked. Borrowing from DeVito, Walker and colleagues (2018), we posit this link occurs in the context of a social-technological "ecosystem" that is constituted through the reciprocal interactions between platforms' technological affordances, behavioural norms, the individual user, and the presentation-relevant social context. We describe these components in turn.

4.2.3 Affordance

Most fundamentally at issue here is how a particular class of technologies (LBRTDAs) influence a specific social process (self-presentation). Implicit to any derivation of this basic question are assumptions of how human and material agencies relate to one another. This includes the degree to which the properties we observe of material artifacts like networked technologies are intrinsic to them or are constituted by collective acts of meaning-making, as well as the level of autonomy humans and non-human artifacts have relative to one another (Faraj & Azad, 2012; Leonardi, 2011). The affordance lens is lauded for recognizing the mutually constitutive relationship between material and social aspects of technology and sufficiently balancing tensions between technological determinism and voluntarism (Faraj & Azad, 2012; Orlikowski, 2007), which accords well with the symbolic interactionist belief in humans' capacity to act in a conscious, willful and strategic matter even when subject to external forces (Blumer; 1969; Snow, 2001). Faraj and Azad (2012, in Majchrzak et al., 2013) define affordances as "the mutuality of actor intentions and technology capabilities that provide the potential for a particular action." In this sense, affordances are not an attribute possessed by actors nor technologies, but an outcome of the relational dynamics between the two. The benefits to examining technology-related social change through the lens of affordance are numerous. First and foremost, the affordance lens allows for high-level analysis of capabilities that technologies provide users in a way that is not restricted to any specific software/hardware or version. Additionally, because this lens transcends any one particular technological form, iteration, or context of use, the findings produced may still be of theoretical importance even after such technologies have undergone dramatic change (Ellison & Vitak, 2015).

4.2.4 Communal common ground

We have established that one of the key means by which networked technologies influence impression construction is through changes to users' self-presentational capabilities made possible by the perceived affordances of these technologies. Another element, Ellison and colleagues (2011) suggest, is the shared contextual knowledge and expectations among collectives of users that shape normative lines of action. Clark (1996) refers to the shared stocks of background knowledge, assumptions, values, procedures and lexicons that are relied upon for meaningful interaction and assumed to be known to any member of a given collective as its "communal common ground." Researchers have long maintained that online platforms can be host to groups of users that collectively negotiate specific communal common ground, as evidenced by popular concepts like “netiquette” (Scheuermann & Taylor, 1997), which describe conventions of politeness unique to networked environments. Previous research has illustrated how shared expectations of normative behaviour in online spaces inform techniques of self-presentation. For example, online daters tend to embellish certain personal details in their profiles in part because they assume others are doing the same (Ellison et al., 2011; Fiore & Donath, 2004; Jaspal, 2017). This observation is illustrative of the logic that inspires our inclusion of communal common ground alongside affordance in examining mediated self-presentation – namely, that it is as much an issue of what users are able to do as it is what they expect and tolerate of each other.

It should be noted that our invocation of communal common ground is not meant to substitute for the concept of community norms, as this would be to assume, potentially incorrectly, that the aggregate of users on gay male LBRTDAs necessarily see themselves as constituting a community. Miles (2017) demonstrates that while gay male LBRTDA users are relatively unified in their understanding of community as a group of like-minded people who have something in common, they were ambivalent as to whether this was something that actually manifested in practice online, some going as far as to frame Grindr, contrariwise, as an “anonymous, self-serving public.” (Miles, 2017, p. 1601) Moreover, to treat community – and the degree of social cohesiveness it implies – as self-evident on gay LBRTDAs belies the extent of stratification and marginalization on these platforms. An abundant literature attest to the pervasiveness of sanctioning and exclusion on the basis of race (Daroya, 2018; Robinson, 2015), ability (Shield, 2018), gender (Lloyd & Finn, 2017), and appearance (Conner, 2019; Filice et al., 2019).

4.2.5 Individual- and context-related factors

Another factor that informs self-presentation decisions on digital platforms is the user themselves and the way they are situated within the broader social context. These elements can be viewed as the psychological and social preconditions that dispose users to present themselves in certain ways online. To wit, researchers have identified a number of individual-level characteristics that bear on self-presentation behaviour in mediated environments, including interpersonal skill (e.g., degree of self-awareness in public, ability to notice and interpret the behaviours, thoughts and feelings of others), motivation (e.g., level of concern for public approval), goals of technology use, and technological competency (i.e., the ability to grasp the available tools of a platform and use them to accomplish one's goals) (Litt, 2012). Demonstrating this point in the context of gay male LBRTDAs, Bonner-Thompson (2017) found Grindr users' choice in presentation style was guided in large part by their motivations – "hypersexualized" displays (i.e., emphasis on the body with full or partial nudity), for instance, were commonly deployed by those aiming to signify sexual availability and stimulate tactile desire in others. Similarly, Miles (2019) identified a series of "practice-based identities" which are differentially mobilized depending on users' level of experience and incentive to broker physical encounter.

Individual differences in self-presentation behaviour do not simply reflect variations in agents' isolated dispositions and predilections, however. As many rightly note, technology users are embedded in broader social, cultural and historical conditions which shape their general lived experience and, in turn, contingencies of use (Baumer & Brubaker, 2014; DeVito, 2017). As Duguay (2016) suggests, one such socio-historical configuration which collectively defines the condition of contemporary sexual minority persons, and which therefore merits focused inquiry into their experiences of mediated self-presentation, is the possession and need to negotiate disclosure of a stigma. Goffman (1963) argues that identities have a moral dimension insofar as they elicit normative judgments from others. Stigma thus refers to attributes of an individual which, as a consequence of routinized forms of reason and meaning (elsewhere defined as dominant ideology (Marx & Engels, 1998 [1845]) or power-knowledge complexes (Foucault, 1978)), are judged to be abnormal, inferior, or intolerable, and which thereby discredit the identity claims made by their possessors in social situations. Scott (2015, p. 156) notes, "The normal and the stigmatized are not essential but relational identities, each defined by contrast to the other. It is the disjuncture between normative expectations and perceived difference that creates the perception of stigma in others." As such, impression management strategies for those with discreditable stigmas such as deviation from cisgender heterosexuality often prioritize concealing the attribute and preventing its inopportune revelation to unsympathetic audiences (Goffman, 1963; Scott, 2015).

4.2.6 Framing the present study

It hence stands to reason that mediated self-presentation behaviour will change alongside technologies, users and contexts. In light of this, self-presentation researchers' focus has shifted in recent years from more traditional web-based dating sites (e.g., Ellison, Heino & Gibbs, 2006; Gibbs, Ellison & Heino, 2006; Guadagno, Okdie & Kruse, 2012; Manning, 2013; Toma & Hancock, 2010; Toma, Hancock & Ellison, 2008) to LBRTDAs (e.g., Duguay, 2017; Ranzini & Lutz, 2017; Ward, 2017) with the gradual supplanting of the former technology by the latter. An additional literature, acknowledging the potential influence of sexual identity on impression construction, specifically examine GBMSM's self-presentation on LBRTDAs (Birnholtz et al., 2014; Blackwell, Birnholtz & Abbott, 2015; Bonner-Thompson, 2017; Chan, 2016; Jaspal, 2017; Miller, 2015; 2018). The current study seeks to extend this line of work while innovating theoretically and methodologically. Specifically, one persistent issue in the extant literature is the focus on the content and strategies of identity display on gay male LBRTDAs to the neglect of the determinants of their construction – in other words, we have a good idea of how GBMSM present themselves on LBRTDAs but only a limited understanding as to why. This is partly a consequence of the limitations of the current procedural fashions. Several works rely primarily on textual and pictorial content analysis of user profiles (e.g., Birnholtz et al., 2014, Chan, 2016, Miller, 2015) and thus can only draw conclusions regarding the content of self-presentations. Without narrative description through in-depth interviews, any conclusions drawn regarding motivations or techniques of impression management, as well as their antecedent factors, can only be conjectural. Adopting an interview-based based approach, we thus ask: how do various elements of the social-technological ecosystem arising from GBMSM's use of LBRTDAs, including affordances, communal common ground and the agent-structure dialectic, interact to shape users' self-presentation behaviours?

4.3 Methodology

This research is part of a larger project in which 40 LBRTDA users across varying gender and sexual identities were interviewed about their use. Said project employed narrative inquiry to examine how LBRTDAs are transforming identities and social practices. We chose narrative inquiry because of its inherent potential to position participants' subjectivities, illuminate examples of agency and cultural contestation, reveal human transformation, and promote advocacy. Narrative inquiry also empowers participants by emphasizing their shared humanity through personal stories of joy, sorrows, struggles, and the activities of daily living (Costa, 2005). Although the goal of narrative inquiry is to foreground the voices of participants, it is time-intensive and does not lend itself to large sample sizes or generalizability at the population level. Instead, it serves as an effective strategy for highlighting the complexity of participants' experiences.

Participants were purposively selected to achieve diversity across gender (e.g. man, woman, trans, nonbinary) and sexual identity (e.g. lesbian, gay, bisexual, queer, straight) (see Table 1). Consistent with other works (Blackwell, Birnholtz & Abbott, 2015; Bonner-Thompson, 2017; Fitzpatrick & Birnholtz, 2018; Miles, 2017; 2019; Møller & Petersen, 2018), participants were recruited directly through LBRTDAs. Members of the research team created accounts on various apps and stipulated in their profile descriptions they were seeking to recruit participants. Similarly to Bonner-Thompson (2017), we opted to have team members display themselves in their profile picture rather than use a generic image, University logo, or leaving the field blank, our reasoning being that this would encourage other users, especially those of diverse sexual and gender identities, to recognize us as "insiders" rather than detached institutional operatives, thus incentivizing participation (Cuomo & Massaro, 2014). Being cognizant of these apps' normative modes of use and the attendant potential for our intentions to be misconstrued (Birnholtz, 2018); a deliberate effort was made to present the researchers in ways that would disambiguate their "off-label use" (Duguay, 2020), such as using pictures wherein they were fully clothed and assuming a more "professional" pose and framing.

When conducting the interviews, interviewers were matched as best as possible to participants according to their gender and sexual identity as to promote feelings of mutual trust and safety, and contribute to conversations that require "insider" or emic knowledge. To ensure the interviews would generate rich and consistent data, we constructed a semi-structured interview guide organized around three research questions: (1) How are LBRTDAs influencing gender and sexual identities?; (2) What impact (positive or negative) are LBRTDAs having on sexual relationships and overall quality of life?; and (3) How do LBRTDAs shape and reconfigure public space? Interviews took place in person in a public, mutually agreed upon location and lasted between 1 and 3.5 hours (mean 90 minutes). Interview quality was monitored through periodic checking of recordings and debriefing with interviewers.

For the purposes of this paper, we analyze the 10 interviews conducted with men who are gay, bisexual, queer, or otherwise interested in other men. All included participants were current or previous users of Grindr and/or SCRUFF, though one participant primarily used Recon. Participants originate from the Greater Toronto Area, Canada, and as such mostly represent a mix of urban and suburban living.

Data were analyzed in an inductive manner resembling constructivist grounded theory (Charmaz, 2014). Using NVivo, open coding was first performed to label relatively granular units of data – e.g., on a line-by-line basis – with constructs mostly derived from participants' own words. This approach was supplemented with axial and theoretical coding, whereby more significant and/or recurring codes were collated and juxtaposed against extant theoretical concepts to frame, extend, and refine the central themes that form the core of our analysis. To ensure "groundedness" in participants' views and experiences, we undertook frequent memo-writing and comparison between data, emerging codes and theoretical concepts, only applying theoretical codes that properly "earned" their way into the analysis (Thornberg, 2012). Trustworthiness (Shenton, 2004) was pursued by having two separate members of the research team independently read and code the transcripts and compare their codes. Although a multitude of themes were uncovered, we focus herein on those related to self-presentation.

Table 4.1. Participant characteristics. All dimensions are taken verbatim from participants' self-description.

Pseudonym	Age	Sex/gender	Sexual identity	Race/ethnicity	LBRTDAs used
Sajan	28	Male	Gay	Bangladeshi	Grindr
Linus	30	Man	Gay	White	Grindr, SCRUFF
Haroon	27	Man	Gay	South Asian	Grindr, Tinder
Nicolas	24	Male	Attracted to masculine-identifying persons	Latino	Grindr
Ethan	26	Male	Gay or queer	White	Grindr, SCRUFF
Mitch	Generation X	Male	Gay	White	Grindr
Jackson	22	Cis male	Homoflexible	White	Grindr
Robert	26	Cis male	Gay	Black	Grindr
Nathan	Older end of the millennial scale	Cisgender male	Gay	White	Grindr, Recon
Benny	Millennial	Trans man	Gay	White	Grindr

4.4 Findings and Discussion

Participants identified a number of techniques and contingencies of self-presentation on GBMSM-targeted LBRTDAs, the overwhelming majority of which relate to the act of profile curation. As others have noted (Ellison et al., 2006), it makes sense to allocate a considerable portion of self-presentation efforts to the profile because it serves as the first point of contact and heavily influences whether and how one chooses to pursue further interaction. In our findings, we identify some of the major trends in impression construction as they relate to profile curation. We then consider factors influencing impression construction, including affordances, communal common ground, and disposing elements of the structure-agent dialectic.

4.4.1 Impression construction trends

Our analysis of determinants of impression construction on gay male LBRTDAs is served by a preliminary exploration of the modes of expression that predominate. Although we observed enormous variation in how participants deployed various expressive techniques, including choice in display picture framing, pose, dress, profile description subject matter, and fixed-choice identifiers (e.g., weight, height, body type, “looking for,” “tribe”), to name just a few examples, participants overall vacillated between two general self-presentation styles vis-à-vis the self-concept: authentic and self-enhancing display. Those endeavouring to present themselves “authentically” did so by indexing their phenomenal sense of self as accurately as they felt possible and with minimal contrivance. Sajan notes, for instance:

> I feel like I should be truthful. Body type I say average. Position I say bottom because I am. I say that I’m single and I’m looking for dates, friends, networking, right now, all those things. I’m open about my HIV status, at least when I was last tested.

Present in similar measure was the desire to craft a specific image, based on audiences’ perceived values and expectations, that would accentuate one’s attractiveness, desirability or worthiness, that is, engage in self-enhancement. Self-enhancing displays were understood by participants as being constructed to some extent irrespectively of the self-concept, as illustrated by their frequent juxtaposing against authentic displays. Jackson explains:

> I don’t like to lie. That said, I don’t like being 130 pounds either, but am I going to lie about being underweight? I don’t know. I never do. But that’s one thing I don’t like putting up there.

Jackson, interestingly, notes feeling compelled to present himself in a way that betrays his self-knowledge as to appear within the latitude of cultural acceptance regarding body weight, despite the moral value he places on truthfulness. Thus, unlike authentic displays, self-enhancing displays pose the possibility of deception when the audience values which one aims to exemplify clash with the traits one knows themselves to possess. The above excerpt also underscores that authentic and self-enhancing displays not only co-exist on the medium, but given their differences in the degree to which they accommodate or impel deception (here defined, irrespective of motive, as to some extent diverging from the self-concept), can present as duelling motives and therefore a point of tension within any individual user.

However, participants also located acts of deception within a hierarchy of severity, ranging from minor fudging of details like height and age to complete fabrication of personal identity (i.e., “catfishing”), which suggests authenticity and enhancement qua deception should be seen not as binary, mutually exclusive self-presentation choices but poles on a continuum. It is possible, as in Jackson’s case, to craft an impression that is mostly faithful to the self-concept save for some small embellishments – it would be reductive simply to label his real or fake. Our findings echo previous research on heterosexuals’ use of social media and dating technologies that demonstrate, on balance, a propensity for authentic self-presentation which is punctuated by modest falsehoods and less frequently by blatant, totalizing deception (DeVito et al., 2018; Ellison, Hancock, & Toma, 2012; Ellison et al., 2006; Hancock & Toma, 2009; Ranzini & Lutz, 2017; Ward, 2017). However, any observed consistencies in the relative prominence of self-presentation styles across technologies and contexts of use could in theory belie differences in the assortment and patterns of interaction between factors involved in their construction. It is to these we now turn.

4.4.2 Affordances’ influence on impression construction

Several elements of GBMSM-targeted LBRTDAs’ technological infrastructure were identified as making certain forms of self-presentation behaviour possible, with some facilitating and others constraining deceptive, self-enhancing display. Among the most influential in this regard, according to participants, is the relative lack of presentation flexibility (DeVito, Birnholtz & Abbott, 2017) when compared to face-to-face interaction. Many of the paralinguistic and nonverbal cues contained in one's physical communicative repertoire (e.g., body language, facial expressions, vocal tone and pitch) are obscured in the primarily pictorial and text-based medium. As such, users are limited in their ability to develop a holistic impression of others prior to meeting in person. This is demonstrated in participants' recurrent accounts of being taken aback in the transition to physical encounter by certain cues that went undetected in online interactions. Mitch recalled once meeting an individual whose manifest skittishness as reflected through their body language came as a complete surprise due to how well it was concealed online:

> So I met this one guy ... I was driving and I had the app open ... and so he messaged me and we started chatting and that was an interesting conversation ... and I took a side trip and I actually met him in person ... It was very weird. He was not at all comfortable, which is too bad because he was really a nice guy ... He just, like, tensed up whenever I got close to him.

LBRTDAs, like other technologies, thus seem to exemplify Walther's (1996) notion that cue impoverishment in electronic communication enables more strategic self-presentation by reducing the range of expressions performers must monitor, control and refine. Incidentally, and much to the performer's benefit, the majority of these missing expressions are those that would typically be "given off" in face-to-face interaction and otherwise discredit a performance. Hence, should one opt to make self-enhancing displays via deception there is reduced threat of their being undermined in due course by one's own efforts. Robert affirms as much in positing text-based communication is a boon in particular to individuals who struggle during face-to-face interaction to successfully wield the entirety of their expressive front in service of making favourable impressions:

> I think a lot of people who do use these apps are socially a little inept ... it’s a lot easier to ... communicate through written language. And texting is a sort of a written language.

The present findings suggest, if anything, that cues are even further restricted in variety and quantity on most GBMSM-targeted LBRTDAs compared to social media and traditional web-based dating sites, which lends to even more streamlined and optimized self-presentation. Most apps, like Grindr, allow for only a single display picture or very limited series of images, whereas on Facebook and other platforms users can curate whole albums containing potentially thousands of photos. Textual description is also usually restricted to a short personal bio and series of pre-set identificatory categories compared to matchmaking sites like OkCupid, which allow for construction of elaborate profiles with lengthy bios and responses to personal questions. Because most apps also lack any kind of visible list of network ties (e.g., friends, followers), personal media stream (e.g., wall or timeline) or public feedback system (e.g., comments and likes), there is little opportunity for other users to supply cues to one’s front, or engage in co-construction of impressions (Ellison & boyd, 2013). Given the salience of cues is inversely in proportion to their abundance, it is noteworthy the degree of inference often made in regard to others’ personality and circumstance based on minor elements of their profile. Nicolas offers a sense, for instance, of how personas can be constructed de novo from as little as one picture:

> I think the most ideal [display picture] would be ... face in photo, with shirt off, in a somewhat tropical or mountainous location ... something exotic ... tan skin, dark hair ... well, you know the stereotypical, like, tall dark man or whatever people look for … maybe holding a dog. Doing something that makes him look a little bit more down-to-earth, so, as though they’re, like, laughing in a candid photo.

Nicolas demonstrates how the imagination is apt to wander in digital contexts where counterfactual cues are readily suppressed. Those with a solid grasp of the cues that remain and the imagined realities they index are therefore presented with a unique signifying economy ripe for capitalization.

4.4.3 Common ground that influence impression construction

The constructivist bent of the affordance lens sensitizes us to the fact that mere enabling of a certain line of action by technology is not enough to guarantee its carrying out. Certain elements of the communal common ground on GBMSM-targeted LBRTDAs work either to amplify or dampen affordances' effect on self-presentational choices vis-à-vis deception. One such norm which generally works in tandem with cue reduction to facilitate deception is the diffuse expectation or belief that the majority of other users are engaging in some degree of self-enhancement contra to their self-concept. With time and experience (e.g., through extended conversation, sharing of additional photos or meeting in person) users seem to develop an appreciation of the potential afforded by the technology for strategic self-presentation and others' penchant for taking advantage of it. A seasoned user who has met enough individuals off Grindr to get a basic sense of any patterned disparities between online and offline selves, Mitch concludes,

> The way I look at it is that nobody is as good looking as they say they are [on LBRTDAs] ... nobody's as successful as they think they are ... But I think people have this expectation when they go on an app that they're going to be able to make a connection with somebody, when the reality of it is that it's all a little bit smoke and mirrors.

Although similar sentiments have been documented at the height of traditional web-based dating sites' popularity (Ellison et al., 2011; Fiore & Donath, 2004), participant narratives indicate that increases in the sophistication and accessibility of self-enhancing technologies like photo retouching software in the intervening years (see Chua & Chang, 2016; Hess, 2015) have contributed to these assumptions being more salient on LBRTDAs.

As Mitch's somewhat disparaging tone would suggest, however, belief in the normalcy of lying on LBRTDAs does not equate to personal tolerance or approval per se. Consistent with prior work (Toma and Hancock, 2012); our participants were generally disapproving of lying as a matter of principle. To understand why perception of preponderance should encourage deception despite widespread moral opposition, we must consider how this norm works in synergy with others – perhaps most plainly, the marketplace ideology endemic to most LBRTDAs which encourages self-objectification and competitiveness among users. Participants repeatedly likened the experience of navigating Grindr's interface to perusing an e-commerce site or brick-and-mortar retailer – large quantities of similar "products" are neatly displayed so that one might make thorough and measured determinations of cost-benefit before deciding between alternatives. This context was suggested to instill in users a sense of imperative to differentiate themselves from their contemporaries in order to capture consumers' limited attention. To that end, self-presentational embellishments can offer a competitive advantage against those who present themselves in a more unvarnished manner. In support of this point, Sajan offers a detailed description of the self-presentation techniques that make him a "good marketer," which tellingly include accentuating and even misrepresenting certain features:

> The way Grindr is set up is that you don't see profiles. You see a grid of faces. It's very visual. And just the way people's brains are set up, they would kind of go towards what they like the most. You're going to be blown away by how much of a good marketer I am. So, I recently updated my profile picture, coiffed my hair to make it perfectly straight

> into a pompadour ... half of my face was lit by the sunlight that was coming in, and made my eyes kind of, like, look brown instead of black.

Hence, expectation of deception may encourage such behaviour not necessarily by fostering personal acceptance, but by introducing a degree of pressure to conform and compete within a socio-sexual economy of oversupply. Other researchers have similarly posited that LBRTDA dynamics exhibit many of the hallmarks of mercantilism, including rational exchange, reductionism, self-optimization, and personal enterprise (Goldberg, 2020; Licoppe, Rivière & Morel, 2016; Roach, 2013). Within this system of relations, self-enhancement can readily be justified as keeping apace with market trends.

Other elements of common ground on GBMSM-targeted LBRTDAs work to constrain or disincentivize deceptive, self-enhancing displays. Among the most pronounced is the expectation of eventual transitioning from online conversation to offline, face-to-face interaction. Indeed, so normatively accepted is this mode of practice that deviation tends to elicit suspicion of untoward motives. Nicolas even suggests a de facto time limit in which users are expected to meet before the possibility for relationship development is foreclosed upon:

> That can take an hour, that can take a week [to transition from interacting on LBRTDAs to in person] ... but ... if you do not meet within the first couple weeks, I'd say 2 weeks max, of having conversation, you won't meet. The conversation is going to die off because it's just an online conversation and it didn't lead anywhere.

Nicolas' point underscores, moreover, that LBRTDAs are normatively perceived as means to a very specific end – that being physical encounter. Conversation for its own sake without any serious prospect of in-person connection is seldom appreciated or actively pursued. Further demonstrating the extent to which this particular mode of use has purchase over alternatives, Miles (2019) found those who seem to forestall the online-offline transition are maligned as "time-wasters" who "misunderstand" the purpose of such apps.

The omnipresent pressure of physical encounter constrains misrepresentation because it sensitizes users to the possibility that any embellishments, omissions or lies in their online presentation will be found out upon re-entry to the full-cue environment. For most, the imminent threat of sanctioning in face-to-face interaction acts as a strong deterrent against any kind of deception beyond what is normatively acceptable. This logic is evidenced in the curatorial decisions of Benny, who felt a sense of obligation to be forthcoming in the early stages of conversation that his genital morphology deviates from cisnormative standards of sex/gender and embodiment:

> [There are] so many different ways that I have put on my profile to portray that I am trans to people. I switch between "FTM" or "trans man", or like, even just "man with a pussy". But sometimes, that doesn't even lead them down the path to understanding that I am a man … with a pussy ... but there is a big class divide on Grindr where it's, like, if you're transgender ... if you're, you know, someone who used to be female, then you're not quite a man, and you're expected to advertise that.

The above provides a useful illustration of how multiple, opposing factors can interact to shape impression construction. LBRTDAs afford Benny the means to strategically construct his self-presentation in a way that elicits favourable reactions from audiences by concealing the ways in which his embodied self deviates from normative expectations. However, Benny uses LBRTDAs with the intention of eventually meeting his conversational partners, some of whom he expects would censure him (or worse) were he not adequately truthful. In a manner consistent with several other trans participants in a recent study by Fernandez and Birnholtz (2019), concerns of safety override the desire for optimized digital self-presentation and encourage "proactive display" of his trans status.

While other researchers have similarly argued that anticipation of future in-person interaction curtails the impulse to lie in online dating (Birnholtz et al., 2014; Ellison, Heino & Gibbs, 2006; Guadagno, Okdie & Kruse, 2012; Hancock, Toma & Ellison, 2007; Ward, 2017), our findings indicate this expectation more inexorably structures interaction on LBRTDAs than previous technologies. One could go as far as to say that brokering rapid physical connection is LBRTDAs' raison d'être (Miles, 2018), whereas in traditional web-based services greater emphasis was placed on sociality within the technology. Thus, on LBRTDAs the prospect of physical encounter could contribute to even further skew towards authentic display.

4.4.4 Influence of agent and structure on impression construction: the case of stigma

As mentioned above, users' social location is likely to influence how they perceive and wield a medium's affordances to achieve their self-presentational goals. GBMSM are unified in their possessing a stigma, that is, a trait which a priori deviates from normative expectations of how individuals should be and therefore discredits possessors' self-image upon revelation to certain audiences. Hence, for GBMSM successful self-presentation is at times reliant on concealment of the trait in question – in this case, nonheterosexual desire, activity and identification. On platforms with more generalized userbases and modes of use, such as Facebook or Twitter, this can be achieved relatively straightforwardly by compartmentalizing indicators of sexual identity while presenting oneself authentically in most other respects. On dating technologies, however, and particularly those less "porous" to use by heterosexuals (Ferris & Duguay, 2020), membership in and of itself can be an indicator of sexual identity. As our findings suggest, this often requires stigma management be performed by way of reducing one's identifiability outright

– either by obscuring personalizing attributes (e.g., name, face, location) or fabricating whole personas.

By virtue of their stigmatization, we would expect to see, overall and other things being equal, higher rates of deception by GBMSM on dating technologies compared to heterosexual men. An incipient literature suggests this might indeed be the case – Ranzini and Lutz (2017) found, for instance, that GBMSM were more likely to engage in deception than their heterosexual counterparts on Tinder. It would be inaccurate, however, to suggest that mere possession of a stigma uniformly predisposes this group to deception. After all, participants in our own study, all self-identifying GBMSM, exhibited considerable variation in presentation authenticity. It seems, rather, that individuals' life circumstances, including the composition and organization of their social network ties in terms of awareness and acceptance of their sexual identity, determine the degree of pressure one feels to strategically manage indicators of stigma through their online self-presentation. Stated differently, the way in which cis-heterosexism pervades the social structures that locate the subject present different pragmatic consequences for expression of nonheterosexual identity, hence incentive for concealment. Sajan, for example, observes a trend whereby individuals who are not "out of the closet" (i.e., have not disclosed their nonheterosexual status) to a majority of members of their networks or to key audiences (e.g., family members, employers) are more likely to engage in deception via obfuscating their identity:

> In a weird way, those who are not out of the closet or those who are, like, maybe in a relationship ... tend to be more vague... They probably have very little information on the profile, right? So that's an example in which the closet would affect it — how they state

> their preferences and reveal information about themselves. ... A lot of them don't have profile pics …[or] profile descriptions at all.

Concerns of stigma management serve not only to illustrate how various facets of technology use act additively to shape impression construction, however – their joint effects are also multiplicative in that the influence of any one element on self-presentation behaviour can be dependent on others. As a case in point, consider the affordances of audience transparency ("the extent to which a platform affords user awareness of who is actually in the audience for persona-linked content" (DeVito, 2017, p. 744)) and visibility control ("the extent to which a platform affords individual determination of what content linked to their persona is visible to others" (DeVito, 2017, p. 744)), which together define users' ability to know and exert control over who can see their expressions online. Generally speaking, participant responses suggest audience transparency and visibility control are low on gay male LBRTDAs compared to most social media platforms. Unlike sites like Facebook or Twitter, where users can employ a number of privacy controls to limit the size of their audience, on LBRTDAs profiles are by default accessible in their entirety by anyone within a certain geographic range who creates an account. Users are therefore restricted in the way of audience control to blocking others on an individual basis – in other words, by strategies of "opt out" rather than "opt in" (Blackwell, Birnholtz & Abbott, 2015). In itself, however, audience transparency/control does not appear to consistently drive users one way or the other vis-à-vis presentation authenticity. A key determining factor is whether there is an appreciable risk of one's expression of nonheterosexuality, as implied by their presence on GBMSM-targeted LBRTDAs, reaching audiences of personal significance who would derive a negative impression. Though the specter of unknown audiences becoming privy to one's same-sex leanings was raised as a possible motivator for deception, this did little to deter participants who were “out” to the majority of their contacts from identifying themselves openly and honestly. Linus explains:

> I’ve never been worried about being recognized, because I’ve always put my face picture on…I was out and I wasn’t worried about people finding out…I see people I know all the time on there, especially classmates or people who are a year above me at school, people who are potentially professional connections. So I don’t worry [as] I have links to my different social media. So yeah, my personal details are pretty much open.

In other words, proper audience visibility/control is prerequisite to authentic display of sexual identity moreso among those for whom nonheterosexuality still constitutes a form of “destructive information” (Goffman, 1959) that would discredit them in the eyes of their most routine and/or significant audiences. In support of this notion, prior research demonstrates LGBTQ+ social media users who remain connected to significant others that presumably would stigmatize their sexual identity employ various visibility control measures to re-segregate audiences, including tailoring privacy features and friend lists (Duguay, 2016) and distributing content strategically across platforms (DeVito, Walker & Birnholtz, 2018).

One additional affordance whose influence on impression construction seems to depend on experiences and concerns relating to stigma management is locatability. An affordance that is characteristically prominent on LBRTDAs, locatability refers to the potential for users to acquire information about others’ geographic location or to transmit their own (Schrock, 2015). Those who anticipate minimal social repercussion from others being made aware of their nonheterosexual identity viewed LBRTDAs’ hybridizing of physical and digital space (Miles, 2018) mostly in terms of possibility for fostering connection. Jackson, for instance, extols Grindr’s precise distance markers for aiding in identifying other GBMSM in physical venues:

> Grindr is a great gaydar. That's another reason I do have it ... so basically when I opened up Grindr at [the local gay bar] when I was partying, suddenly I knew everyone's name, suddenly I knew, like, faces. I'm like, oh, you're this person, you're that person.

Conversely, for those who see their identifiability on GBMSM-targeted LBRTDAs as posing a threat to their fostered self-image, location data represent another form of personalizing information that warrant concealment or strategic disclosure. Mitch explains,

> I've always been a little uncomfortable with the proximity-distance thing. ... It's a privacy thing. I mean, the one thing I do like about the apps is that they provide a level of privacy and anonymity to it, and adding in that distance function, to me, violates that in my mind.

Miles (2019) similarly observed that individuals who are not yet "out" are more hesitant to embrace the locative/hybridizing function of LBRTDAs. The present findings expand on this by demonstrating that hybridity also contributes to deception among this contingent of users in particular.

Finally, persons' positioning within general social structures can also modulate the ways in which the communal common ground of LBRTDAs impel certain presentation strategies. Nicolas' above description of the "ideal" profile picture which evokes a particular racialized and embodied subject ("something exotic ... tan skin, dark hair") speaks to the persistence of norms among this demographic of users that allocate value across categories of sociopolitical difference. GBMSM's common possessing of a sexuality-based stigma does not preclude their reinforcing in the collective imaginary a series of social hierarchies based on a number of additional intersecting stigmas, including but not limited to those towards Blackness, nonwhiteness, effeminacy, transness, disability, serostatus, and fatness. Critically, where one figures within these hierarchies – the stigmas they accrue which undermine their ability to generate a positive impression and reap the attendant relational spoils – shapes the pressure they feel to deceive. Jackson conjectures,

> I find people who are a person of colour on Grindr tend to express less on their profile, they're less likely put up a photo ... they don't chat as much. That's probably because of the stigma and fear ... you don't want to be harassed or anything like that.

Haroon affirms the preponderance of racist discrimination among users through description of an informal "experiment" he performed to determine whether his race was the primary factor leading to his repeatedly being ignored:

> I conducted an experiment. What I did was I used a picture of this television actor from India, and a good-looking one, but he didn't get responses. Poor guy. More responses than I do get, but maybe one or two more ... they're just not into brown skin.

Thus, those whose self-image deviates prohibitively from the normative ideal instantiated by gendered, racial, and other power structures understandably see greater strategic merit in dissimulation.

4.5 Conclusion

To reiterate, the purpose of the current study was to explore how various elements of GBMSM's use of LBRTDAs, including affordances, communal common ground and the agent-structure dialectic, interact to influence self-presentation behaviour. In line with previous research (DeVito et al., 2018; Ellison, Hancock, & Toma, 2012; Ellison et al., 2006; Hancock & Toma, 2009; Ranzini & Lutz, 2017; Ward, 2017), we found impression construction on GBMSM-targeted LBRTDAs reflects tensions between authentic depiction of the self-concept and self-enhancement qua deception. In part, individuals' position on this continuum was a result of the additive effect of various determinants, some facilitating of deception, including reduced cues, belief in the normalcy of lying, norms of self-objectification and competitiveness, and concerns of managing sexual identity-related stigma, and others constraining, including expectation of brokering physical connection. Impression construction determinants also to some extent interact multiplicatively, that is, in a way where the influence of one is dependent on another. This was most plainly evidenced in the interactions between stigma management concerns, the affordances of audience visibility/control and locatability, and common ground reinforcing social hierarchy. Although several of these factors were previously identified within traditional web-based dating sites and heterosexual LBRTDAs, our findings suggest possible changes to their salience in this particular context of use. Importantly, the present study is by no means meant to be an exhaustive survey of the technological, structural and individual factors involved in impression construction; rather, it is intended to serve as an illustration, using impression authenticity as an exemplar, of the complex and recursive ways in which these factors interact in mediated display of identity.

Some limitations inherent to our choice in methods should be acknowledged. As previously mentioned, by using self-report data we were able to gain insight into individuals' motives and reasoning behind self-presentation decisions. However, this type of data is vulnerable to social desirability effects, particularly as they concern misrepresentation – as others have noted, participants are likely apprehensive to be totally forthcoming about how often and to what extent they lie (Ellison et al., 2006; Toma et al., 2008). Additionally, by restricting our focus to LBRTDA use we limit our ability to understand how these technologies figure into users' self-presentational choices across their broader social media ecosystem (DeVito, Walker & Birnholtz, 2018). It is possible that individuals treat Grindr as a "back stage" where they can present their nonnormative sexual identity with abandon whilst maintaining a purely heterosexual front for audiences on Facebook or LinkedIn. Furthermore, the lack of evidence of any departure from the self-concept motivated by a desire for identity experimentation or other forms of creative play could be an artifact of the present symbolic interactionist frame and methods deriving therefrom, including the line of questioning and analytic foci.

Finally, it should be recognized that the self-presentational strategies and contingencies detailed herein are based on description from individuals whose app use mostly conforms to that sanctioned or prescribed by the technology itself, i.e., connecting for physical intimate encounter. This, however, falls short of capturing the gamut of user practises, eliding, among other possibilities, engaging in sex work, coordinating social gatherings, selling drugs, marketing, promoting social campaigns, and having phone/cybersex (not to mention seeking research participants) (Duguay, 2020). Theoretically, these motives for use could impel different self-presentation strategies (e.g., intimidation or supplication over enhancement) or affect the salience of various elements that locate the authenticity/deceptiveness of displays (e.g., expectation of offline encounter). The self-presentational implications of these various forms of “off-label” app use hence merit future study.

Limitations notwithstanding, the present study marks the first attempt at systematically exploring how determinants of impression construction interact in the context of GBMSM-targeted LBRTDAs. Where this work is primarily distinguished methodologically from its contemporaries is with respect to its measured application of the symbolic interactionist frame to demonstrate how users, as multiply-embedded social agents, differentially wield technological affordances in light of their goals and circumstances to effect a plurality of self-presentational phenomena, as well as through use of interviewing to render these underlying contingencies explicit. Ours joins a growing body of work that attest to the importance of giving due consideration to the socially-constructed character of communication technologies, demonstrating how the lived experiences of GBMSM complicate conventional understandings of self-presentation behaviour in digital space. As dating technologies further develop and integrate themselves into everyday practices of social and intimate connection, a more focused eye for such contextual variation will be required to accurately and thoroughly account for the changes taking place.

Chapter 5. Study IV

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Abstract: Location-based real-time dating apps (e.g., Grindr, Tinder) are becoming an increasingly popular technological means of brokering romantic, sexual, or otherwise intimate interpersonal connections. A nascent body of research suggests use of such technologies by gay, bisexual, and other men who have sex with men – who are particularly keen adopters – is associated with aversive states of bodily self-awareness, including body dissatisfaction. Conspicuously, a plurality of previously-identified social-psychological mechanisms underpinning the relationship between networked technology use and body image issues involve goal-oriented interpersonal behaviour intended to generate certain dispositional attributions, or self-presentation. This study seeks to develop a theoretical framework grounded in empirical data that explains how self-presentation behaviour on locative dating apps influences gay, bisexual and queer male users' embodied self-concept. Using an informed grounded theory method, 23 semi-structured interviews were analyzed through constant comparison between data, emerging codes, and extant theoretical concepts. Overall, it was found that various facets of the social-technological ecosystem of dating app use (e.g., technological affordances; medium-specific norms; personal idiosyncrasies; and social, cultural and historical conditions) interact in complex and emergent ways to effect a diversity of self-presentational phenomena (e.g., impression motivation, strategies, and tactics), which impinge on certain variable elements of multiple mechanisms of social influence (e.g., reflected appraisal, social comparison, objective self-awareness) such that their impacts on bodily self-conceptions differ in kind, direction, or degree as compared to interaction in person or other communication technologies. Within this

framework, we identified several self-presentational patterns and contingencies that might account for elevated rates of adverse body consciousness among app-using gay and bisexual men compared to non-users. These include, inter alia, norms encouraging talk of bodies and self-sexualization qua nudity, prioritizing of impression management via aesthetic self-promotion, reduced self-presentation motivation due to perceptions of surplus relational opportunity, widening of comparison asymmetries through selective self-presentation, and the intransigency of the embodied self-concept to assimilating its digitally-contrived presentation.

5.1 Introduction

5.1.1 Information and communication technologies: types and trends

Few if any other modern technological innovations rival Internet-enabled information and communication technologies (ICTS) in diffusion and influence on social dynamics. Between 2000 and 2019, the proportion of US adults who reported using some kind of Internet-enabled device skyrocketed from 52% to 90%, and while significant disparities in adoption persist based on age, income, education, and community type, the "digital divide" overall continues to narrow (Pew Research Center, 2019a). One way in which ICTs are increasingly being used is to broker interpersonal connections of a romantic, sexual or otherwise intimate character. In 2019, 30% of US adults reported having previously used an online dating website or mobile dating app, up from 11% in 2013 (Anderson, Vogels & Turner, 2020). Online dating is especially popular among certain American demographics, including those age 18-29 (48% previously used vs. 38% for those age 30-49, 19% for 50-64, and 13% for those 65+) and adults who identify as lesbian, gay or bisexual (LGB) (55% vs. 28% of heterosexual adults). Whereas 12% of all US adults have married or been in a committed relationship with someone they first met through a dating website or app (11% for heterosexuals specifically), the same figure is 20% for LGB adults (Anderson, Vogels & Turner, 2020).

In the early-to-mid 2000's, online dating for LGBs and heterosexuals alike mostly took place through more traditional "web-based dating sites" (Gudelunas, 2012), like Match, eHarmony, Adam4Adam, and OkCupid. Use of these sites was typically restricted to personal computers, and users would manually input their location data to be matched with others nearby (Blackwell, Birnholtz & Abbot, 2015). Since then, a class of software for mobile devices sometimes referred to as location-based real-time dating apps (LBRTDAs) (Handel & Schlovski,

2012) have gained considerable public traction. According to Miles (2018), LBRTDAs are distinguished by their convergent use of smartphones' cellular signal, Wi-Fi connection, and satellite position via global positioning systems (GPS) to locate users with cartographic specificity and render them visible to one another by precise order of distance. By literally closing the distance between digital interlocutors, LBRTDAs aim to expedite relationship initiation and transition to offline, face-to-face encounter (Miles, 2017), as reflected in their technological infrastructure and marketing materials which "communicate a narrative of immediacy and efficiency" (Miles, 2018, p. 6). While more traditional online dating websites were also designed to broker mixed-mode relationships – those initiated through networked technologies, but which eventually progress to face-to-face interaction (Walther & Parks, 2002) – LBRTDAs encourage the transition from online to offline over shorter periods of time, sometimes within the span of hours or minutes (Birnholtz et al., 2014).

Though some LBRTDAs (e.g., Tinder, Bumble) are popular among heterosexuals, these apps have a longer history of use among gay, bisexual and other men who have sex with men (GBMSM). Grindr is widely considered the first ever LBRTDA. Originally released in 2009, it is expressly marketed for use by "gay, bi, trans, and queer people" (Grindr, 2020). A recent survey of over 3,000 GBMSM revealed Grindr to be the most frequently used app, with 60.2% of the sample reporting some or frequent use. Other widely-used GBMSM-targeted LBRTDAs include SCRUFF, Jack'd, and Recon (Badal et al., 2018). As others have noted, there is social and historical precedent for the vigorous uptake of LBRTDAs by GBMSM. Since same-sex attraction is both (a) culturally stigmatized and (b) an invisible or only partly visible trait, LBRTDAs can serve as a means of identifying other GBMSM and communicating one's sexual or romantic interest with lesser risk of harassment, violence, or arrest, much in the same way as the “handkerchief code” deployed by GBMSM in the pre-digital era (Birnholtz et al., 2014; Grov et al., 2014; Gudelunas, 2012).

5.1.2 Issues of bodily self-awareness and links to ICT use

Aversive states of bodily self-awareness and their related psychosomatic and behavioural issues became an area of major scientific interest in the mid-to-late 20th century. Although observed differences might to some degree reflect changes in diagnostic practices and health service availability, incidence rates of conditions like anorexia nervosa (AN) and bulimia nervosa (BN) rose steadily in Western societies from the 1930s through the 1970s (Currin et al., 2005; Hoek, 2016; Hoek & van Hoeken, 2003; Keel & Klump, 2003). Following a period of relative stability through the 1990s, it appears rates of disordered eating may again be on the rise – a systematic review of recent studies found a significant increase in point prevalence of eating disorders from 3.5% in the 2000-2006 period to 7.8% in the 2013-2018 period (Galmiche et al., 2019).

Young white women overall display the highest rates of body dissatisfaction, appearance investment and disordered body-related behaviours (Demarest & Allen, 2000; Feingold & Mazzella, 1998; Muth & Cash, 1997; Rucker III & Cash, 1992; Tiggemann, 2004). However, this does not preclude the existence of disparities between other social groups. Besides sex/gender, some of the other most frequently observed differences are across axes of sexuality and race/ethnicity. A meta-analysis of 27 studies indicated that GBMSM display higher body dissatisfaction than their heterosexual counterparts (Morrison, Morrison & Sager, 2004). GBMSM also display increased rates of various maladaptive body-related behaviours, including disordered eating (Calzo et al., 2017; Conner, Johnson & Grogan, 2004; Matthews-Ewald et al., 2014; Watson et al., 2017), purging (i.e., self-induced vomiting or laxative use for the purpose of weight loss) (Matthews-Ewald et al., 2014; Watson et al., 2017), use of diet pills for weight loss

(Austin et al., 2013; Matthews-Ewald et al., 2014; Watson et al., 2017), and anabolic steroid misuse (Blashill & Safren, 2014). Other studies have found elevated rates of unhealthy weight control behaviours among persons of colour relative to white persons (Austin et al., 2011; 2013; Story et al., 1995; Tran et al., 2019).

A common explanation for the rise in body consciousness issues beginning in the 1930s involves the contemporaneous shift to visual mass media with the invention of the television, and the resultant proliferation of images depicting unrealistic appearance ideals (Levine & Harrison, 2004; Silverstein et al., 1986; Spitzer, Henderson & Zivian, 1999). In support of this notion, consumption of mass media has repeatedly been linked to body dissatisfaction and disordered eating (for meta-analyses, see Barlett, Vowels & Saucier, 2008; Grabe et al., 2008; Groesz et al., 2002; Levine & Murnen, 2009; Want, 2009). However, recent shifts in media consumption patterns call into question mass media's continued relevance. Since 2010, global media consumption through television, radio, newspapers and magazines has decreased markedly while consumption through mobile internet use has risen from 9.8 minutes per day in 2010 to a projected 112.9 minutes per day in 2018 (Austin et al., 2016). Corporate-owned and funded mass media is also facing greater competition for audiences' attention from social media (ICTs that facilitate sharing of user-generated content) – between 2005 and 2011 the proportion of US adults who use at least one social media site rose from 5% to 72% (Pew Research Center, 2019b).

Like its non-interactive predecessors, social media appears to contribute to body consciousness issues. A series of reviews and meta-analyses indicate, on balance, that social networking site use is associated with body dissatisfaction, internalization of a thin ideal, and disordered eating, and that these associations may strengthen with sustained use over time

(Fardouly & Vartanian, 2016; Holland & Tiggeman, 2016; Mingoia et al., 2017). Some longitudinal studies linking social media usage with greater body dissatisfaction (de Vries et al., 2015; Smith, Hames & Joiner, 2013) and/or desire to undergo body modification (de Vries et al., 2014) at follow-up also suggest this widely-observed correlation reflects that social media negatively impacts body consciousness, rather than body dissatisfaction encouraging heavier social media use.

A smaller body of research suggests LBRTDAs exert similar effects as non-dating-oriented social media platforms. Strübel et al. (2017) found that use of Tinder by men and women is associated with greater body dissatisfaction, body shame, appearance self-monitoring, and likelihood of engaging in appearance comparisons. Another study found adult users of dating apps were more likely than non-users to display a number of unhealthy weight control behaviours, including fasting (not eating for at least a day), self-induced vomiting, and using laxatives, diet pills without a doctor’s advice, anabolic steroids, and muscle-building supplements (e.g., creatine, amino acids, DHEA, hydroxyl methyl-butyrate [HMB], or growth hormone) (Tran et al., 2019). Other studies suggest the link between dating app use, adverse states of body consciousness and maladaptive behaviours similarly apply to GBMSM (Filice et al., 2019; Griffiths et al., 2018; Tran et al., 2020).

5.1.3 Impression management and self-presentation

Based on mediation analyses, a number of social-psychological processes have been identified as possible causal mechanisms underlying the relationship between social media use and adverse states of body consciousness, including social comparison (Fardouly & Vartanian, 2015; Groesz et al., 2002; Hanna et al., 2017; Kim & Chock, 2015; Smith, Hames & Joiner Jr, 2013; Myers & Crowther, 2009), self- and other-objectification (Cohen, Newton-John & Slater, 2018; Fardouly, Willburger & Vartanian, 2018; Manago et al., 2014; Vandenbosch & Eggermont, 2012), and solicitation and receipt of appearance-related feedback (Butkowski, Dixon & Weeks, 2019; Hummel & Smith, 2014; Smith, Hames & Joiner Jr, 2013). Conspicuously, all of the aforementioned processes in some way involve goal-oriented interpersonal behaviour intended to generate certain dispositional attributions, or self-presentation. For instance, comparisons made on social media are often based on users' photographic content, which are strategically captured, edited, and uploaded so as to elicit specific reactions from imagined audiences (Fox & Vendemia, 2016). Anderson et al. (2018) also demonstrate that objectifying (i.e., sexualized) self-depictions on Grindr are part of users' self-presentational strategies to signal interest in casual sex. Similarly, Pounders et al. (2016) found that impression management is a primary motivation for posting selfies on social media, with most wanting to achieve an appearance of being happy and physically attractive.

Schlenker (2012, p. 542) defines impression management as "the goal-directed activity of controlling information in order to influence the impressions formed by an audience." The systematic study of impression management began with the work of Erving Goffman. In his seminal monograph The Presentation of Self in Everyday Life (1959), he agreed with the symbolic interactionist position that joint action depends on participants strategically devising lines of conduct in light of what they anticipate to be one another's expectations and likely responses, which in turn requires each taking the other's role (Blumer, 1969). He extends this point, however, by suggesting that we infer others' positions by attending to their surface appearances rather than any kind of internal, essential substance. His view echoes Cooley's (1902, p. 87) that "the imaginations which people have of one another are the solid facts of society." Because of this, people will manipulate their appearances to steer others' judgments and reactions. Humans are goal-oriented beings, and as such will almost always pursue interaction with some kind of objective in mind, consciously or otherwise. This includes but is not limited to constructing and maintaining the self-concept, bolstering self-esteem via social validation, sustaining the smooth and harmonious flow of interaction, and maximizing social and material rewards from interaction. To these ends, individuals will try to impress upon audiences a particular “definition of the situation” (Goffman, 1959) that would lead them to act voluntarily in ways conducive to the fulfillment of said goals.

Impression management could involve making reality claims pertaining to any number of entities, including persons, groups, objects, locations, events, and ideas. Where the claims being made are in regards to the true nature of oneself, the actor(s) involved can be said to be engaging in self-presentation. Stated differently, self-presentation refers to facets of social behaviour intended to shape others’ attributions of the actor’s dispositions (Jones & Pittman, 1982). As Goffman originally argued, self-presentation is just one lens through which social behaviour can be made sense of – it is also common in sociology to frame social behaviour in technical-rational, political, structural, and/or cultural terms. Ergo, any behaviour can conceivably be used for self-presentational purposes, but not all behaviours are inherently self-presentational (Leary, 1996). Self-presentation behaviour can be distinguished on the basis of its initiating motives or intended ends. Schlenker (2012) suggests that what separates self-presentational behaviour from others is the importance placed on real or anticipated reactions of audiences to one’s conduct. In some cases, audience reactions are the primary and sole concern that guides behaviour; in others, self-presentation is an auxiliary but still-influential motive – other goals might take precedence, but they are nevertheless pursued in a way that preserves one’s self-image. Similarly, like other types of behaviour, self-presentation can vary in the extent to which it arises from automatic versus controlled cognitive processes. A considerable portion of everyday self-presentation behaviour is automatic – that is, it occurs outside conscious awareness; involves relatively minimal expenditure of limited cognitive resources; is autonomous, in that it need not be consciously monitored or maintained once initiated; and is involuntary, in that it is initiated by situational cues or prompts and not by internal forces. However, there are also situations where one is likely to switch to conscious, effortful self-presentation, such as when problems arise that render automated scripts unserviceable; when the actor perceives self-presentation to be crucial to the attainment of goals; and when the actor is uncertain of the type of impression that the situation calls for (Schlenker, 2012).

A limited number of studies have investigated specific social media behaviours that can be considered strategies or tactics of self-presentation and their association with body consciousness, such as photo editing and posting as well as engagement with appearance-focused and digitally retouched visual content (Chua & Chang, 2016; Cohen, Newton-John & Slater, 2017; Fox & Vendemia, 2016; Kleemans et al., 2018; McLean et al., 2015; Meier & Gray, 2013; Mills et al., 2018; Ridgway & Clayton, 2016; Veldhuis et al., 2020). However, no research has yet explicitly investigated the role self-presentation plays in the link between ICT use and bodily self-conceptions. Thus, the purpose of the current study is to develop a theoretical framework grounded in empirical data that helps to explain how self-presentation on LBRTDAs influences GBMSM's bodily self-conceptions.

5.2 Methodology

5.2.1 Study design

This study endeavoured to critically inspect and integrate extant theory and empirical data to develop a theoretical account of how self-presentation on LBRTDAs influences embodied self-conceptions in GBMSM. To that end, it employed an informed grounded theory methodology (Thornberg, 2012). Informed grounded theory has many features in common with the “classic” Glaserian strand of grounded theory (Glaser & Strauss 1967) from which it hails, including the end goal of producing middle-range theory to explain behaviour and processes where none previously existed or existing theory is deemed inadequate, deliberate privileging of inductive data over extant concepts in theory construction, simultaneous involvement in data collection and analysis, and sampling for theory development rather than increasing generalizability of results. The key area of distinction between informed and classic grounded theory relates to how and when existing literature is incorporated. Glaser and Strauss originally argued explicitly against engaging with existing literature prior to data collection, their rationale being that doing so poses the risk of “contaminating” the research process by unduly colouring researchers’ assumptions and interpretive schemas. Informed grounded theory takes the inverse position, asserting that engaging with the literature at the outset can: provide a cogent rationale for a study and justification for adopting a specific research approach (McGhee et al., 2007); highlight pertinent lacunae in the present knowledge base (Creswell, 1998); provide “sensitizing concepts,” (Blumer, 1969) or broad terms/ideas that offer initial but tentative directions for data collection and analysis (Charmaz et al., 2018); and avoid conceptual and methodological pitfalls (McGhee et al., 2007).

5.2.2 Literature review

Given that the goal of this study is theory development, it adopts a slightly different approach to reviewing literature compared to qualitative studies that aim simply to provide conceptual analyses of empirical data. Whereas in the latter case one is typically expected to engage with existing theory only to the extent that it provides a lens through which the research findings can persuasively be articulated, here it is incumbent that a considerable portion, if not the majority of pertinent existing theory is adequately considered so as to ensure novelty and cogency of the emerging grounded theory. While this review was not “systematic” in the sense that it did not adopt predetermined and/or replicable strategies for literature searching, appraisal and synthesis, it manifestly surpasses in scope and detail the background and theory sections of the typical empirical paper and thus merits some post-hoc description of the methods used. Sources included in the literature review were retrieved through a combination of keyword searches of electronic databases (PubMed, JSTOR, Scopus, Google Scholar), article reference lists, and authoritative texts in the substantive area (e.g., Goffman, 1959; Leary, 1996; Rosenberg, 1979). Search terms were gradually refined with increasing exposure to relevant literature and included “body image”, “reflexive embodiment”, “self-concept”, “impression management”, “self-presentation”, “computer-mediated communication”, and “social media”. Arguments from theoretical/conceptual papers as well as findings from empirical papers were collated, summarized, and thematically organized to identify major themes and interconnections.

5.2.3 Participants and recruitment

Participants for the current study were selected through a combination of purposive and theoretical sampling. Glaser (1978, p. 37) defines purposive sampling as “the calculated decision to sample a specific locale according to a preconceived but reasonable initial set of dimensions (such as time, space, identity or power) which are worked out in advance for a study.” More specifically, we used a sub-type of purposive sampling known as maximum variation sampling, in which participant heterogeneity is sought for the purpose of identifying variations in the dimensions of the phenomena under study as well as the common patterns that cut across variations (Palinkas et al., 2015). The characteristics which we sought to diversify, in light of the notion that subject positions and contexts of use will shape experiences with ICTs (Faraj & Azad, 2012), included age, sex/gender identity, sexual identity, race/ethnicity, community type (e.g., urban, suburban, rural), LBRTDAs currently or previously used (e.g., Grindr, Tinder, SCRUFF, Jack'd, Recon, GROWLr), degree of experience with LBRTDAs (e.g., frequency or duration of use), and primary motivations of LBRTDA use (e.g., casual sex, friendship, long-term relationships, casual conversation, voyeurism).

When analytic categories began to saturate after initial rounds of data collection and analysis, we shifted the sampling strategy to theoretical sampling, which Coyne (1997, pp. 625-626) defines as

> the process of data collection whereby the researcher simultaneously collects, codes and analyses the data in order to decide what data to collect next [...] this type of sampling is selected according to the developing categories in the emerging theory, rather than a concern for variables such as age, class or characteristics of the sample.

In other words, theoretical sampling involves a pointed and selective search for additional data that the researcher presumes will aid in elaborating properties of their theoretical categories, further defining variation within a category, specifying relations between categories, and answering other outstanding questions (Charmaz et al., 2018). For example, at a certain point we adjusted our recruitment strategy to seek participants with more extensive experience with appearance-augmenting technologies (e.g., Photoshop or Instagram filters) to get a better sense of how they affect the embodied self-concept.

Multiple different methods were used to recruit participants in line with previous work, including through Grindr itself (Blackwell, Birnholtz & Abbott, 2015; Bonner-Thompson, 2017; Fitzpatrick & Birnholtz, 2018; Miles, 2017; 2019; Møller & Petersen, 2018), in which the lead author created an account and stipulated in his profile description that he was seeking to recruit participants; local organizations that serve LGBTQ2S+ persons; various social networking sites (i.e., Facebook, Instagram, LinkedIn) (Ferris & Duguay, 2020); and official University communications. In terms of inclusion/exclusion criteria, individuals were eligible if they (a) identified as men or masculine-aligned; (b) identified as gay, bisexual, queer, two-spirit, were sexually and/or romantically attracted to men, had previously had sex with men, or had the intention or desire to have sex with men in the future; (c) were 18 or older; and (d) had used LBRTDAs to an extent they deemed personally significant. In total, 23 individuals located across Canada and the United States participated in the study (see Table 1).

Table 5.1. Participant characteristics. N = 23.

Characteristic	**Value**
Age	
Mean (range)	27.96 (18-65)
Sex/gender	
Man	22
Nonbinary	1
Sexual orientation	
Gay	16
Homosexual	2
Androsexual	1
Pansexual	1
Queer	2
Sexually fluid	1
Place of residence	
Ontario	20
Montreal	1
Arizona	1
New York	1
Racial/ethnic/cultural background	
White (Non-Hispanic)	9
Black	2
South Asian	6
Latino	3
White (Hispanic)	1
Southeast Asian	1

Native American	1

5.2.4 Data collection

With ethics clearance from an institutional review board (ORE #42664), data were collected through in-depth, semi-structured interviews. By definition, all forms of semi-structured interviewing involve a line of questioning that is to some degree prepared in advance (Qu & Dumay, 2011). Here, this involved use of an interview guide designed to broach topics of interest by way of gently-guided questions invoking broad themes interposed with probes to elicit more specific responses. Prior to any data collection, interview questions were developed a priori from sensitizing concepts derived from the literature review, which offered both a rationale and vocabulary. To maintain flexibility required for theory development, questions were continuously reframed, reordered, added, or removed according to the insights they produced (or not). Some frequently posed questions include: “How do you present yourself on dating apps? What motivates you to present yourself in this manner? What is your approach to taking, editing, and selecting a profile picture or series of pictures? How does or doesn’t this presentation accord with the ‘real’ you? How does the way you present yourself on these apps affect the way you think and feel about your body or appearance? The way that others present themselves? How do others’ comments or other forms of feedback on these apps affect how you view yourself?” Interviews were conducted in two separate phases – the first 13 from March to August 2018 and the remaining 10 from December 2020 to February 2021. The first set was obtained as part of a different project exploring the social-psychological mechanisms underlying the relationship between LBRTDA use and body satisfaction in GBMSM (Filice, 2019). Said data also offered insight into the present research question, but were yet to be theoretically saturated in this regard. The remaining ten interviews were obtained to further flesh out conceptual properties and relations. Interviews ranged from 30 to 100 minutes in length (mean 60 minutes) and were conducted by phone, video conferencing software, or in person. Audio recordings were taken and transcribed verbatim. All personal identifiers are removed and names replaced with pseudonyms in presentation of the findings.

5.2.5 Data analysis

In keeping with the provisions of grounded theory, data collection and analysis were performed in parallel. This allowed for the emerging analysis to shape subsequent data collection procedures (e.g., modifying recruitment techniques, interview guide content, etc.) so that incipient categories could be further developed, new connections between categories made, and exceptions to themes discovered (Charmaz, 1996). At the more granular level, analysis proceeded in sequence of open, focused, and theoretical coding. Open coding was first used to label the smallest units of meaning – i.e., on a word-by-word to segment-by-segment basis, depending on the depth and density of participants' descriptions. At this stage, in vivo codes (i.e., adopting participants' own language) were largely used to maintain distance from taken-for-granted assumptions and ensure "groundedness" in participants' realities (Charmaz et al., 2014). This was followed by focused coding, which involves identifying more significant and/or recurring open codes and synthesizing them in ways that best make analytic sense. Finally, focused codes were examined against codes derived from existing theory to frame, extend, and refine the lines of analysis (Charmaz et al., 2018; Thornberg, 2012). To prevent existing theory from pigeonholing the data, the literature review and analysis were performed in adherence with several "data sensitizing principles" (Thornberg, 2012), including theoretical agnosticism (treating extant theories as provisional, disputable, modifiable, and disposable and directing focus to their limitations); theoretical pluralism (considering and comparing different theories so as to maintain a critical distance towards each); theoretical sampling of the literature (re-engaging with the literature after an initial broad review based on concepts and ideas emerging throughout the analysis); and staying grounded in the data (engaging in constant comparison between data, codes and theoretical concepts, and only applying theoretical codes that have "earned" their way into the analysis). The general order of events was as follows: (1) initial concerted literature review, (2) inductive re-coding of 2018 dataset, (3) theory-informed collection of data, (4) inductive coding of newly-collected data, (5) mapping of codes to existing theory, (6) returning to literature to locate theoretical explanations for outlying codes, (7) returning to the field for additional discrepant and/or outlying data, (8) repeating steps (4) through (7) until reaching theoretical saturation, (9) finalizing theory. The below findings represent the theory developed from this synthesis of literature and data.

5.3 Findings and discussion

Working in the symbolic interactionist tradition, Crossley (2006) argues individuals' cognitive representations of embodied aspects of the self and attendant affective responses are inherently social insofar as they emerge from taking the role of specific and generalized others. Hence, what clinical and psychological social psychologists refer to as "body image" can be understood in interactionist terms as the Meadian self-ing process as it applies specifically to the body (Waskul & Vannini, 2006). It would follow that those interactionist-identified interpersonal and social-structural processes that come to bear on the global self-concept – including reflected appraisal, social comparison, and objective self-awareness – exert similar influence on its embodied dimensions in particular (Gecas, 1982; Rosenberg, 1979). As will be shown, each of these processes to some extent undergird the relationship between LBRTDA-mediated self-presentation and bodily self-conceptions in a manner akin to other forms of social influence. We will furthermore demonstrate that the specific contingencies and patterns of self-presentation in the context of GBMSM's use of LBRTDAs influence certain variable elements of these processes such that their effects on bodily self-conceptions differ in kind, direction, or degree as compared to interaction in person or on other ICTs.

5.3.1 Reflected appraisal

The concept of reflected appraisal, also known as the looking-glass self, is associated with the pioneering work of Charles Cooley (1902), who famously argued that individuals' self-conceptions and self-evaluations result from internalizing the perceived judgments of significant others. In metaphorical terms, we treat others' reactions as a mirror (i.e., looking glass) to develop our sense of self. Reflected appraisal has three principle elements: (1) perceptions of our appearance to others; (2) perceptions of others' appraisals of our appearance, or metaperceptions; and (3) an accompanying emotional response to internalizing the imagined perspective of others, most usually pride or shame. As Crossley (2006) notes, the image of our body that is reflected back to us by others forms the bodily "Me" which we think and emote about. Research consistently shows significant relationships between appearance-related commentary and bodily self-conceptions for GBMSM and their gender and sexual counterparts (McArdle & Hill, 2007; Menzel et al., 2010). It could also be argued that reflected appraisal tacitly underpins the direct mechanisms of "social influence" on body image (e.g., teasing and other general appearance-related comments or instructions on how to attain a specific body shape/size) identified by the now-widely-accepted tripartite influence model (van den Berg et al., 2002).

Our findings suggest the relationship between mediated self-presentation behaviour on LBRTDAs and users' embodied self-concept involves reflected appraisal inasmuch as said behaviour supplies the expressions or sign-vehicles that form the basis of perceived judgments.

Participants routinely mentioned how they internalize the judgments of other users as gleaned from their expressive behaviour. Marco, a 22-year-old sexually fluid Latino man, notes:

> One of the struggles I've had has been with my height. I'm a short person and I look a bit younger than I am, so a lot of guys assume that I'm bubbly and I'm a bottom and submissive just from my looks. And once I realized the reaction that guys were having I was like, "Is that really who I am, or is that just the role that people are putting on me?" And I was realizing how the reaction of other people puts thoughts in my mind that I may not even think about before, but then they become something that you start thinking of and it stays in your mind ... so I think it's very damaging when it's negative.

Reflected appraisal is also implicated in the reverse sense: feedback is often self-presentational in nature insofar as concerns of others' perceptions and reactions factor into how it is delivered. Theoretically, therefore, the social, psychological, and technological exigencies that shape other kinds of self-presentation behaviour on LBRTDAs should also be relevant in the context of feedback delivery. Participants acknowledged the capacity of feedback to generate dispositional attributions of the issuer by recipients, and recurringly spoke to an impulse to be cordial – underscoring how affirming, respectful feedback is oftentimes instrumental to effecting a positive impression. Luis, a 22-year-old pansexual Latino man, links being kind with "putting his best foot forward":

> I'm very sensitive, so I always try to show my best. Every day I think about being kind to people and putting my best foot forward.

It is not simply the case that reflected appraisal underpins the link between mediated self-presentation behaviour and embodied self-conceptions. Self-presentational phenomena that stem from the social-technological "ecosystem" (DeVito et al., 2018) of LBRTDA use (Filice et al.,

2021) also influence various elements of this process, including feedback transmission frequency, valence, and assimilation, such that the net effect of LBRTDA use on bodily self-conceptions differs qualitatively or quantitatively from that of non-use or use of other ICTs, like social media. First, consider feedback transmission frequency, or the likelihood that others will convey honest and direct feedback in the first place (Lundgren, 2004). Appearance-related feedback that provokes self-reflection may be expressed more frequently on GBMSM-targeted LBRTDAs than most other contexts due to the self-presentational norms that facilitate discussion of the body. Many platforms' widely-construed purpose of brokering casual sex (or even just intimate connection more generally) establishes bodies as a central point around which negotiations pivot and hence an appropriate topic to broach. In a greater proportion of interactions on platforms like Facebook, in contrast, unsolicited appearance-related comments are likely to be perceived as impertinent, ergo discrediting. Simply put, the same appearance-related comment can be viewed as acceptable or not depending on the specific digital context of its utterance, and because it more readily comports with its embedded social norms, feedback directed at the body poses less a "face threat" (to borrow Goffman's language) to the issuer in the context of LBRTDAs. Andres, a 26-year-old gay Latino man, points to Grindr's distinctly more sexualized standards of etiquette which lend towards talk of bodies:

> There's Grindr manners, and those manners are "What are you looking for?" or "Are you this?" It becomes ... a lot of the manners are very sexualized. A lot of the people who aren't even looking for sex start speaking sexually because it's just kind of the manners on Grindr. So it's not very typical conversation at all. It's not how you would talk to people on the street at all.

Echoing Leary's (1996) notion of the dual restrictive-prescriptive function of social norms as regards self-presentation, Andres suggests Grindr's uniquely sexualized milieu not only loosens cultural embargoes on embodied discussion, but to some degree compels it.

Various forces related to mediated self-presentation also push the balance of feedback valence, i.e., its degree of positivity or negativity in tone (Lundgren, 2004), in different directions. One such force that drives positive feedback on LBRTDAs is selective self-presentation, or the use of those self-presentation tactics germane to mediated interaction in order to refine or enhance any number of personal attributes to a degree beyond what is possible in face-to-face interaction (Walther, 1996; 2007). Selective self-presentation on LBRTDAs is first and foremost enabled by a combination of technological affordances that are common to most forms of digital communication, albeit to varying degrees: presentation flexibility, asynchronicity, and editability. Presentation flexibility refers to users' ability to present facets of their selves through various modalities, content formats, and styles (DeVito et al., 2017). Walther (1996) originally posited that a number of gestures that constitute actors' "front", or expressive repertoire, as a consequence of being partly or wholly reliant on physical co-presence, are often either totally absent in computer-mediated communication or present in an attenuated form. Incidentally, the majority of these missing or subdued expressions are those that are typically "given off" in face-to-face interaction (i.e., those which somehow evade conscious self-presentational monitoring or control and thus pose risk of creating undesired impressions (Goffman, 1959)), including appearance, body language, and setting, leaving intact those that are largely under skillful control. Hence, cue reduction introduces the possibility of crafting more refined displays that have better odds of serving one's self-presentational goals. Online self-presenters also benefit from asynchronicity, or the time lag between transmission, perception, and response to gestures between interlocutors, which provides users near-unlimited time to construct their expressions thoughtfully and carefully, as well as editability, which allows them to alter their self-presentations until satisfied (Walther, 1996, 2007). Together, these affordances enable LBRTDA users, like those of other ICTs, to produce enhanced self-images that are more likely to garner positive, self-esteem-bolstering feedback than their unenhanced, offline appearance. In practice, this most often involves sharing a select number of flattering images of oneself, undertaking visual modifications using augmentative technologies (e.g., Photoshop and other selfie-editing apps, filters), and making strategic use of close-ended identifiers (e.g., weight, height, body type, “tribe”, “looking for”) and open text fields (e.g., name, profile description) to depict oneself favourably. Indeed, for some participants, pre-empting negative feedback and attendant self-esteem threats was an overriding motive for selective self-presentation. Faisal, a 30-year-old gay South Asian man, explains:

> I’m not going to put a picture of my torso until I lose the weight I’ve gained during my marriage ... Before I was more comfortable in my body image. Now, not so much. It’s not that I’m hiding anything, I’m just not comfortable with sharing nude images of myself anymore ... If somebody starts talking to you and they say “nude pics?” and you send them, and they just sort of ghost [end communication without warning or justification], that doesn’t sit so well with you. So I would try to avoid that if I can.

Feedback issued on LBRTDAs might skew more positive for reasons related to the source or transmitter, as well. As demonstrated earlier, feedback is a kind of behaviour that itself is guided by self-presentational considerations, and in usual circumstances issuing negative feedback would be inimical to appearing deferential or respectable. To the extent that users seek to effect such an image, selective self-presentational affordances on LBRTDAs enable this process by making it easier to suppress inadvertent, given-off expressions of negative valence (e.g., disgust, annoyance, disapproval) than in person. Grayson, a 24-year-old gay White man, explains how the asynchronous and delocalized nature of text-based communication instills a sense of confidence to engage in tactical flattery, should the situation call for it:

> People are more comfortable giving those comments that in real life they might just not have the confidence to do so ... it’s the distance, I think. It's much easier to approach certain subjects and people just find it easier to speak online. There's a wall and a time lapse, so it gives them more time to think of responses and good points that in-person conversations they wouldn't have as a buffer. And there's this lack of connection, I suppose – that eye contact or physical proximity that gives people a bit more confidence and they're more comfortable delivering compliments or critiques or criticism.

Of course, simply having the technological affordance-based means to present oneself favourably via positive feedback transmission does not guarantee its occurrence. Receipt of negative feedback on LBRTDAs is not uncommon. One force relevant to mediated self-presentation that can push the balance of feedback toward negativity is recipients’ possession of a stigma, which a priori reduces (“spoils”, in Goffmanian verbiage) the social status of its possessor (Goffman, 1963). If we assume that impression management is a means to achieving a certain desired outcome, appearing congenial is rarely an end in itself; people are often inclined to present as such only to the extent that it advances their goal(s) – typically in the context of LBRTDA use, of securing a partner suitable for them. As Leary and Kowalski (1990) note, motivation to impression-manage is positively associated with the perceived value of the goals dependent thereupon. Hence, insofar as one does not view sexual/romantic relations with a given interlocutor as a desirable outcome there is less motivation to impression-manage. For this reason, those GBMSM in possession of multiple intersecting stigmas, including GBMSM of colour, effeminate and gender-nonconforming GBMSM, disabled GBMSM, and fat GBMSM, are more liable to negative feedback in regards to their appearance. Rishi, a 29-year-old gay South Asian man, speaks to the preponderance of depreciatory behaviour that is disproportionately leveled against those who are less sought after as a result of their being multiply stigmatized:

> Some would say that that I'm masculine, I'm a tall guy, I'm a cisgender man – I think I definitely benefit from that because you'll go on some people's profiles and it'll say “no fats, no fems.” There's a lot of ignorance and contempt towards men who act in an effeminate manner and I don't act that way, so maybe that’s why [feedback on the whole is positive for me] ... I'm able-bodied, so these are just some of the factors that shield me in a way.

Here, Rishi offers a succinct and compelling explanation for some of the variation seen in participants’ accounts of their experiences using LBRTDAs – where one is situated within established social hierarchies will shape how interactions play out and thus psychological outcomes of app use. Moreover, because individuals’ socio-sexual valuations are determined by multiple, mutually (re)constituting systems of exploitation, per intersectionality frameworks (Collins & Bilge, 2016), the relationship between social status and feedback valence can defy simple linear prediction. Rishi’s race makes him vulnerable to criticism in some respects, but his gender expression, bodily dimensions and able-bodiedness “shield” him in others.

It should also be noted that politeness, besides seldom being a self-presentational end in itself, is also not integral to every possible self-presentation strategy users might pursue. Jones and Pittman (1982) identified multiple different self-presentation strategies – behavioural routines designed to produce particular dispositional attributions – including ingratiation (as to appear likeable), intimidation (as to appear dangerous), self-promotion (competent or well-positioned), exemplification (virtuous), and supplication (dependent and/or in need of assistance), all of which conceivably serve different ends and involve different expressive techniques. Procuring casual sex partners is the predominant if not exclusive motive for a plurality of users of several key GBMSM-targeted LBRTDAs (Grindr, especially); among the many possible self-presentation strategies in service of this aim, self-promotion via appearing physically attractive is considered by participants to be of paramount importance – more so, crucially, than appearing congenial, affable, or deferential. To a greater degree than in other contexts (certainly those that are not primarily courtship oriented, like the workplace, but even in those dating contexts that seek to foster more long-term relationships, like OkCupid or Match), appearing attractive is sufficient to achieving one's goals, and by extension being agreeable is superfluous. Hence, the reward structure of GBMSM-targeted LBRTDAs incentivizes above all others a kind of self-presentation strategy that is not contingent on transmitting positive feedback. Alan, a 54-year-old White gay man, laments how the casual sex motive deprioritizes pro-social behaviour on LBRTDAs:

> I think the apps have promoted speed fucking to the point where nobody cares about the real you. They don't want to know about the man behind the body – not wanting to know the human behind the physical fuck machine.

From this fact we can derive another personal self-presentational factor that affects feedback valence, that being the attributions which one's expressive toolkit, or front, furnishes them to convincingly effect. Those who can rely on their appearance to generate an impression of attractiveness or desirability – i.e., those who occupy higher rungs of the socio-sexual hierarchy by virtue of their possessing normatively desired physical features, or who avert having a stigma imposed on them – have less incentive to recourse to subordinate strategies, like being polite. Those who can rest on their aesthetic laurels, so to speak, are lesser compelled to compensate through displays of ingratiation to sway their audiences. This complex mechanism underpins an otherwise pedestrian observation made by several participants: that more conventionally attractive people tend to be ruder. Vijay, a 35-year-old gay South Asian man, explains:

> One could be as crass or as boring on their profile as they like. Who cares about the write-up? There could be no words as long as there's a couple of cute pictures of them in a thong on holiday. Presenting multiple parts of their life is not needed; there's the six pack and that's all you need to know. They just need to show the physicality of what they're here for.

Still other contextual facets of LBRTDA use attenuate individuals' motivation to impression-manage, if not altogether at least via ingratiation, thereby enabling negative feedback transmission. One is the perception of surplus opportunity for tie formation – "choice overload", as it has been referred to in the literature (D'Angelo & Toma, 2016) – brought about by LBRTDAs' distinctive collapsing of space-time to expedite physical encounter. As participants noted, the felt ease of locating desirable others with common intimate aspirations as compared to other networking venues has the residual effect of reducing the perceived value (according to a supply-demand logic) of any individual prospective partner or intimate potential, thus mitigating the urgency of successfully executing a performance serviceable to that end. Oftentimes, and especially among those with greater socio-sexual capital, impression management motives are subjugated by more instrumental concerns, like getting the best deal (i.e., finding someone with an optimal constellation of traits), culling the undesirables, and making best use of one's finite time and energy (see also Filice, Parry & Johnson, 2021) – hence the noted persistence of terse rebuffs along the lines of “no thanks, too fat,” despite their predictably poor reception. Marco identifies as a primary reason for users’ impropriety the assumption that there will always be additional chances to find love or sex, other suitors waiting in the wings:

> You can actually be selective and discriminating on these apps ... you have the power of telling people what you want and what you don't want. I think that's why people will find being negative something that they want to do even if their intentions are good ... because there's more people in the app, you can be certain that you're gonna find someone else that agrees with you.

Presupposing sufficient motive, certain affordances of LBRTDAs can “disinhibit” users to behave in certain ways or pursuant to certain goals that otherwise would pose risk of face threat and attendant pragmatic consequences, contributing further to negative feedback transmission. One such affordance is the capacity for users’ online actions to be identified with a stable offline persona, referred to in different places as identity persistence (DeVito, Birnholtz & Hancock, 2017) or nonymity (Zhao et al., 2008). LBRTDAs, on the whole, were perceived by participants as being relatively more anonymous than the average social networking site, partly because on several platforms (e.g., Grindr, SCRUFF) users are not required to disclose their real names, residence, or any institutional affiliations, but also because the majority of relationships being cultivated are previously “unanchored” to any kind of offline interaction (Zhao et al., 2008). Anonymity was posited to induce a decoupling between one’s online presentation and its perceived practical consequences, i.e., the goal-relevance of impression management (Leary & Kowalski, 1990), thus reducing one’s felt sense of accountability and hence incentive to impression-manage in conformity with normative expectations, including those relating to deference and politeness. Aaron, a 24-year-old queer White man, explains how the usual sanctions for failing to properly observe social mores (e.g., public embarrassment, ostracism, assault, formal reprimand or termination of employment) are less constraining in the context of mediated interaction, where the offending act(s) are to varying degrees dissociated from the actor themselves:

> People think nothing's gonna happen to them and in a way they're right. If it was in person they'd be cowering because they know I could beat them up. But being online behind a picture and text is like, “nothing bad can happen to me, so I could feel good about making other people feel bad.” But then there’s the fact that you could choose not to even have a picture in the first place. Like, how the fuck am I gonna find them? The thing of being online and anonymous just really emboldens people to destress because I think most people are in situations where they can't really vent their frustrations and it’s probably just an escape.

Finally, one other variable element of reflected appraisal which mediated self-presentation impinges upon is the likelihood that a given comment will be internalized or assimilated into the self-concept of the recipient. As research on reflected appraisal shows, internalization does not always necessarily accompany receipt of feedback – as social agents, we have a degree of control over how we think about and respond to feedback (Lundgren, 2004; Wallace & Tice, 2012). One way in which self-presentation on LBRTDAs affects this process is that the aggregate of this behaviour — what users collectively choose to emphasize, downplay, or enhance; the images towards which their modifications skew; the ideal image that is jointly constructed through these actions — contributes to individuals’ perceptions of the sentiment of a generalized other (an amalgam of attitudes perceived to be characteristic of a certain collective)

(Mead, 1934), which is itself not only internalized to great effect, but used as a frame of reference against which the relevance, legitimacy and importance of feedback from particular others is judged. Blake, a 24-year-old queer White man, depicts this idealized image on GBMSM-targeted LBRTDAs in the following manner:

> The same bodies that you see on Grindr are the exact same bodies you'll see on mainstream or corporate queer media ... it's white, masculine, and muscular ... as a fat gay, you don't see yourself literally anywhere in any space.

Benjamin, a 30-year-old gay Southeast Asian man, goes on to illustrate how individual users, in their attempts to abide by these expectations in their own presentation, also perpetuate them:

> The guys who are more comfortable sharing photos of themselves are the ones who have already attained that standard, and the ones who haven't are more likely to present a photo of just their face versus their whole body. Would I have a profile photo of me with my torso if I had that standard? I'm leaning more towards yes, realistically speaking.

In other words, a milieu in which six-packs tend to be showcased and bellies concealed signals a consensus of disdain towards fatness (as well as nonwhiteness, femininity, etc.) which has greater psychological purchase over individuals' idiosyncratic judgments. Furthermore, this can engender a skepticism or dismissiveness towards any affirming feedback that may seemingly defy popular sentiment as reflected in prevailing self-presentational strategies. Thus, those who deviate prohibitively from the collectively-negotiated ideal are not only prone to receiving more negative feedback on the whole, as above, but to resisting what little positive feedback might come their way.

5.3.2 Social comparison

Social comparison is the process whereby individuals imbibe meaning in their own attributes by comparing them to those of others. In his original articulation of the theory, Festinger (1954) suggested that the primary function of social comparison is “reality-testing”, which is specifically called for when the status of a given self-attribute is ambiguous or uncertain. Interactionists would argue that social comparison functions beyond establishing where one’s features “objectively” stand relative to those of others, however, as the meanings of such attributes are themselves socially constructed (Gecas, 1982). Thus, other individuals, groups, and social categories can serve as reference points to establish the relative superiority/inferiority of a particular trait one possesses as well as its statistical and moral deviance/conformity (Owens & Samblanet, 2013). Besides internalization of appearance-related commentary, comparison on the basis of appearance has been identified as one of the other major mechanisms of both in-person and technologically-mediated social influence on bodily self-conceptions (Fardouly & Vartanian, 2015; Myers & Crowther, 2009).

LBRTDA-mediated self-presentation and social comparison are interdependent in that comparisons, ultimately, are made on the basis of perceptual phenomena generated by self-presentation. Inexorably, the outward appearances to which we refer for comparison, both online and offline, will to some degree have been preened or worked upon for self-presentational purposes. Leo, a 23-year-old homosexual White Hispanic man, describes how exposure to others’ presented selves on LBRTDAs triggers the comparison process, thereby introducing alterations to bodily schemata:

> I’ll see people and I’ll think, “I want to do that. I want to be this person,” which on one hand can be motivational, but on the other hand, on the topic of body issues, I find that it

> can be demoralizing. It can nick away at my confidence because I feel, “I don’t have this person’s body. I’m not as beautiful as this person.”

In a similar vein as reflected appraisal, patterns and contingencies of self-presentation within the context of GBMSM’s use of LBRTDAs affect multiple variable elements of this process such that its impacts on embodied self-conceptions differ qualitatively or quantitatively from interaction in person or on other ICTs – those elements being comparison frequency, direction, and internalization.

Firstly, appearance-based comparisons have the potential to take place with greater frequency on GBMSM-targeted LBRTDAs due to normative expectations of use that license display of the unclothed body. Because the widely-conceived purpose of several of the most popular apps is to procure sex, many users see it as appropriate, even advantageous, to depict oneself shirtless or semi-nude as to stimulate desire in observers. Rishi explains:

> Grindr is just so sexualized ... definitely because it's a hook-up app. It's not even, like, for dating – it's solely for the purpose of casual sex, so there's just a lot of pressure to look a certain way and present yourself in a way that makes your body highly desirable or titillating.

As with body-centered conversation, we see a simultaneous relaxing of proscriptions against and intensifying of coercive pressure to engage in sexualized self-presentation. This results in a glut of revealing visual content that lends itself more readily to body-based comparisons – a six-pack can only provoke envy if it is visible, and GBMSM-targeted LBRTDAs encourage their unconcealed flaunting. The same cannot be said of platforms like Facebook, for instance, where different audience compositions (e.g., friends, family, and colleagues as opposed to prospective casual sex partners) and sanctioned modes of use establish self-presentational exigencies that more often preclude self-sexualization qua full or partial nudity. Other studies corroborate our observations of a preponderance of body-focused visual content on GBMSM-targeted LBRTDAs – an analysis of 1400 Grindr profiles found that users were topless in nearly one in three (30%) profile pictures (Anderson et al., 2018).

Self-presentational trends stemming from affordances of presentation flexibility also influence appearance comparison frequency. Though all ICTs are to some degree more cue impoverished than in-person interaction, platforms can differ in whether and how prominently they feature content of a given format (e.g., text, audio, photo, video) (DeVito et al., 2017). As participants suggest, certain personal dimensions translate better across certain content formats – personality is more easily gleaned through text or audio, for instance, while appearance is best conveyed through photos or video. In user profiles, LBRTDAs generally prioritize pictorial content over others, as evidenced by the screen real estate dedicated to photos as well as strict character/word limits for bios on apps like Grindr and Tinder. Hence, LBRTDAs' privileging of appearance in its content generation features means that comparisons, when made, are more likely to be in reference to such. Leo notes:

> I do feel it does negatively affect my body image ... it's more of a physical evaluation, like a comparison complex, meaning I'm comparing myself to someone else who is more physically fit than I am ... because the only dimension of what you see in people online is their physical appearance.

In support of this notion, Griffiths et al. (2018) found that use of image-centric social media platforms (those that feature pictorial or video content more prominently, like Instagram or Snapchat) was more strongly associated with muscularity dissatisfaction and eating disorder symptoms among GBMSM than non-image centric platforms (e.g., WordPress, Blogspot).

Mediated self-presentation behaviour also contributes to differences with respect to comparison direction. Downward comparisons, which involve evaluations of persons thought to be inferior in some respect to oneself, have been linked to boosts in self-esteem and body satisfaction (Johnson & Knoblock-Westerwick, 2014; van den Berg & Thompson, 2007). Conversely, upward comparisons, i.e., those made with persons thought to somehow be in a more enviable position, have been shown to promote negative self-perceptions, lower life satisfaction, and disordered eating (Chou & Edge, 2012; Fardouly & Vartanian, 2015; Frison & Eggermont, 2016; Haferkamp & Krämer, 2011; Meier & Gray, 2013). Symbolic interactionism posits humans' propensity to take the role of others underlies an especial capacity for dissimulation – our ability to introject others' consciousness creates new potentialities for action (e.g., based on others' desires, expected reactions, etc.), producing a fundamental discontinuity between cognition and the social act such that communicative gestures cannot presume always to be an uncontrived expression of internal states (Goffman, 1959; Mead, 1934). This necessarily places limits on humans' "empathic accuracy" (Wallace & Tice, 2012), that is, their ability to divine others' thoughts and feelings, including with regard to the self. As a consequence, social comparison intrinsically has an asymmetric quality in that comparisons are not made between respective self-conceptions, but between one's self-concept and the target's self-presentation, which is at liberty to depart to varying degrees from the self-concept. While this dynamic is present at a basal level irrespective of context, those situations that greater enable selective self-presentation, like ICT-mediated interaction, widen the possible gulf between one's self-concept and their presentation. Barring those exceptional circumstances where the predominant self-presentation strategy is one producing an air of inferiority (e.g., supplication), this results in comparisons, overall, skewing further upward relative to in-person interaction. A growing number of studies confirm that comparisons made on social networking sites are more likely to be upward than downward (Chou & Edge, 2012; Vogel et al., 2014), and our findings suggest the same holds true of GBMSM-targeted LBRTDAs. Noah, a 28-year-old gay White man, notes, for instance:

> It seems to me a truth that people present the best parts of their lives on such things, and it's like you can focus on all the cases of, oh, this person has this or that or looks like this or that, and so yeah, I think it's a negative thing in that way.

In other words, because LBRTDA users have the means (similarly to other ICTs) and motivation (to an extent that sometimes surpasses other forms of ICT use) to portray the embodied parts of their selves in an idealized way on their profile, the perceived disparity between comparer and compared is likely to be larger than in person, and hence the takeaways more self-derogating.

One final element of comparison that varies as a function of self-presentation behaviour and which therefore partly accounts for LBRTDAs' effect on bodily self-conceptions is internalization – whether sizing oneself up against another actually produces a perceptible change in either the substantive or evaluative aspects of the self-concept, and the degree and/or direction of this change (Jones & Buckingham, 2005). As has been noted elsewhere, the cognitive and affective outcomes of comparison are not a given. For example, the effect of comparison direction on self-attitudes has been shown to be moderated by personal and situational factors, like self-esteem and perceived ability to modify the attribute(s) under comparison, such that at most it can be said that downward and upward comparisons only tend to produce positive and negative self-feelings, respectively (Buunk et al., 1990). Another factor that influences comparison internalization, our findings suggest, is selective self-presentation, which as noted above refers to contrivance in the presentation of personal attributes over and above what face-to-face communication allows. To the extent that it produces images that deviate from the self-concept or certain “objective” measures (e.g., weight, height), selective self-presentation is said to be deceptive in nature (Toma & Hancock, 2010). Consistent with previous research (e.g., Ellison, Heino & Gibbs, 2006; Filice et al., 2021; Hancock & Toma, 2009), participants indicated navigating tensions between authentic and deceptive self-enhancing displays on LBRTDAs, as cultivating an attractive but untruthful image might get one’s foot in the door, so to speak, but will present issues at the point of meeting in person. Though self-presentation strategies were said to run the gamut from unpremeditated candour to calculated fabrication, the mean seemed to settle around modest embellishment – what some referred to as a “best foot forward” approach. With respect to presentation of the embodied self, this was achieved through taking multiple photos and posting only the most appealing, concealing unflattering features, and restrained use of photo-augmenting technologies. Leo notes:

> I have seen some people who use the Photoshop liquefy tool, so it actually slims their waist or widens shoulders ... the distortions, the ones that are as extreme as the Photoshop liquefy tool, are extremely uncommon. The filters, I’d say, are incredibly common. I would say at least two out of every three profiles have some sort of filter applied to them to make the photo more pleasing.

The very fact that self-enhancing displays on LBRTDAs are on the whole rather modest as to remain within the latitude of believability could contribute to their internalization during comparison. As Noah underscores, blatantly augmented images are routinely dismissed as unrealistic and hence inappropriate targets for comparison:

> If I could literally tell it [another user’s photo] was photoshopped, then it just enters the fake uncanny valley mode, and I'm not gonna compare myself to a fake person.

Users therefore adopt more subtle augmentative approaches that can avert suspicion of dissimulation but nevertheless make one appear more attractive, including using automated photo editing software (i.e., filters) that very minutely modify skin tone and texture or facial proportions. The net overall effect of the tendency to engage in restrained self-enhancement is a smaller asymmetry between one's "real" self-concept and others' digitally-enhanced self-presentation than is theoretically possible, and resultantly more modest skew upward for comparisons, but greater internalization.

5.3.3 Objective self-awareness

The mechanisms hitherto identified as underlying the relationship between LBRTDA-mediated self-presentation behaviour and users' bodily self-conceptions (i.e., reflected appraisal and social comparison) apply largely to behaviour on the part of others. One additional mechanism was found to account for the effect of one's own self-presentation behaviour on their bodily self-concept, that being objective self-awareness. Echoing the foundational assumptions of symbolic interactionism, objective self-awareness (OSA) theory posits a self-reflexive quality of human consciousness – people are able to apprehend their own existence just as they do other environmental stimuli. One is said to be in a state of objective self-awareness when attention is directed inward and they become an object of their own consciousness. This is contrasted with subjective self-awareness, when attention is focused outward and the self is experienced as a source of perception and action (Duval & Wicklund, 1972). In concordance with Mead's (1934) assertion that the self derives meaning only in relation to others, it is argued that objective self-awareness automatically initiates comparison of the self against certain standards of correct behaviour, attitudes, or traits vis-à-vis the imagined perspective of a generalized other (Duval & Wicklund, 1972). While early formulations of the theory assumed that comparison uniformly results in negative affect, later revisions argue that affective response is related to the magnitude and direction of the perceived self-standard discrepancy – those who see themselves as nearly meeting or exceeding the standard could experience a neutral or even positive response to objective self-awareness (Greenberg & Musham, 1981; Ickes, Wicklund & Feris, 1973).

The present findings suggest users' own LBRTDA-mediated self-presentation is linked to their bodily self-conceptions by way of the user-generated profile, which in a manner akin to mirrors, autobiographical information (e.g., medical reports), and practices of bodily modification and maintenance (e.g., cosmetic surgery, tattooing, exercising, shaving) acts as a stimulus that triggers a switch in the locus of conscious attention from subjective to objective self-awareness. This can occur either in the act of self-presentation (e.g., while taking, editing, or posting photos) or reflecting on its persistent traces (e.g., viewing one's own profile). Lance, a 27-year-old gay White man, explains how retouching his photos for use on dating apps sensitizes him to how certain of his features fall short of internalized ideals:

> I would like the ends [of my eyes] to be a tiny bit more lifted, because I find them a little droopy. But when I'm editing them ... I'm a very self-analytical person, so I think those words, like droopy and stuff ... it's a weird feeling. It's like I shouldn't be doing this. That's why I don't do too much – because if I did then that feeling would just grow, probably.

The creation of digital artifacts of the embodied self for presentational purposes thus can be considered a "reflexive body technique" that effects a split between the embodied "I" and "Me" (Crossley, 2006), prompting rumination on the body's meanings as derived from cultural expectations regarding appropriate uses and appearances.

As intimated above, one element of objective self-awareness which conceivably could vary as a function of communication medium is affective outcome. Elsewhere it has been posited that objective self-awareness results in more positive self-evaluations when it is induced by exposure to artifacts of one's own digitally-mediated self-presentation (e.g., personal profiles on social media) than "traditional" objective self-awareness stimuli, like a mirror (Gonzales & Hancock, 2011). The reason for this, it is suggested, is that selective self-presentation produces changes in the content of self-conceptions, a phenomenon known as identity shift (Gonzales & Hancock, 2008), which narrows or reverses the perceived self-standard discrepancy. In other words, people come to view their "actual" selves and their digitally-contrived self-presentations as being one in the same, thereby mitigating feelings of inadequacy.

Our findings have rather different implications, however. Participants noted frequently experiencing aversive states of bodily self-awareness in direct response to their own selective self-presentation, primarily in the form of dejection and anxiety from perceived failure to meet appearance standards. A possible explanation for this is the general lack of identity shift in embodied aspects of the self which we observed. Contrary to Gonzales and Hancock's (2010) findings, participants retained a clear ontological distinction between their "actual" body and that which they present in an optimized fashion on LBRTDAs and other ICTs. Aaron remarks:

> The whole idea of using filters is just ... not gross, but off-putting to me. It's like, not only am I trying to fool other people into believing I'm something I'm not, but also trying to fool myself. Once my feed ends up just being this catered and manicured look, then at some point I'll look at it and be like, "what the fuck is that?"

Aaron's framing of his digitally-presented appearance as "not me" is revealing in terms of the malleability the embodied self-concept has to reconcile with its dissonant presentation.

Participants’ descriptions suggest certain inherent features of embodied dimensions of the self-concept account for their fixity against identity shift. Specifically, as compared to personality-based dimensions, embodied dimensions’ materiality makes them more directly accessible to sensory experience, hence resistant to being imparted certain alternative meanings (see also Crossley, 2006). Noah encapsulates this notion in his description of the “body-as-fact”:

> It’s probably not a good thing when you're thinking, like, this might be a “flaw” in quotation marks and therefore let me make it look like less of one. It’s like you're almost trying to change facts. It's like you're identifying in yourself what others might see as a flaw and so you're trying to correct it in a way that doesn't really make any sense because it's just, like, in the moment and nothing's going to change about it. All you're changing is the perception of it rather than the actual fact.

Bodily features are thus prime examples of self-beliefs that are relatively unambiguous and have a limited range of interpretations, which according to existing theory are less amenable to change by self-presentation (Bem, 1972; Schlenker & Trudeau, 1990). Hence, objective self-awareness of said features is likely to reflect the “actual”, rather than selectively-presented self, retaining the scale of self-standard discrepancy typical of most everyday contexts. This would explain why other studies have demonstrated that selfie taking, editing, and posting are linked to decreased self-esteem, appearance satisfaction, and feelings of physical attractiveness (Mills, 2018; Shin et al., 2017; Tiggemann, Anderberg & Brown, 2020). The reason why these findings and ours seem to conflict with Gonzales and Hancock’s (2010) may have to do with the latter’s choice of global self-esteem as the outcome measure, which comprises those more pliable, personality-based dimensions of the self-concept alongside its embodied ones.

If anything, selective self-presentation on ICTs may intensify the aversive outcomes of objective self-awareness by making more salient the self-standard discrepancy. More than ever before, embodied self-presentation is a de facto instantiation of perceived standards, owing to the sophistication and accessibility of today's appearance-augmenting technologies. Photo editing apps and social media filters are newly enabling large numbers of people to not only imagine, but actually see what their appearance might look like if it were to more closely conform with normative expectations – as well as experience firsthand (particularly in dating contexts) how interactions might play out differently as a result. Such technologies construct the ideal self with a poignant clarity that cannot be accomplished by the mind's eye alone. Marco conjectures, for example, that his waist would likely not be as great a source of dissatisfaction had he never possessed the technological means to visualize what it otherwise might be:

> I think if Photoshop wasn't available to people like it is now, people would be less negative about themselves, because they don't have that tool that allows them to change their body to what they want to be. They would look at themselves and they'll see who they are and they'll be like, "Okay, that's me, I like me," and that's it. But because they can see how they might look differently, they put that in their mind and it's what fuels them, and it fuels me to think I need to have a smaller waist – because in my pictures I look good with a smaller waist.

5.4 Summary, limitations and conclusion

This work undertook to construct an informed grounded theory of how self-presentation behaviour which constitutes and is constituted by the digital milieu of LBRTDA use influences GBMSM's bodily self-conceptions. Figure 1 distills the basic mechanism that we propose. In essence, various facets of the social-technological ecosystem of LBRTDA use (e.g., technological affordances; medium-specific norms; personal idiosyncrasies; and social, cultural and historical conditions (DeVito et al., 2017; Ellison, Hancock & Toma, 2011; Filice et al., 2021)) interact in complex and emergent ways to effect a diversity of self-presentational phenomena (e.g., impression motivation, strategies, and tactics (Jones & Pittman, 1982; Leary & Kowalski, 1990)), which impinge on certain variable elements of multiple mechanisms of social influence (e.g., reflected appraisal, social comparison, objective self-awareness) such that their impacts on bodily self-conceptions differ in kind, direction, or degree as compared to interaction in person or other ICTs.

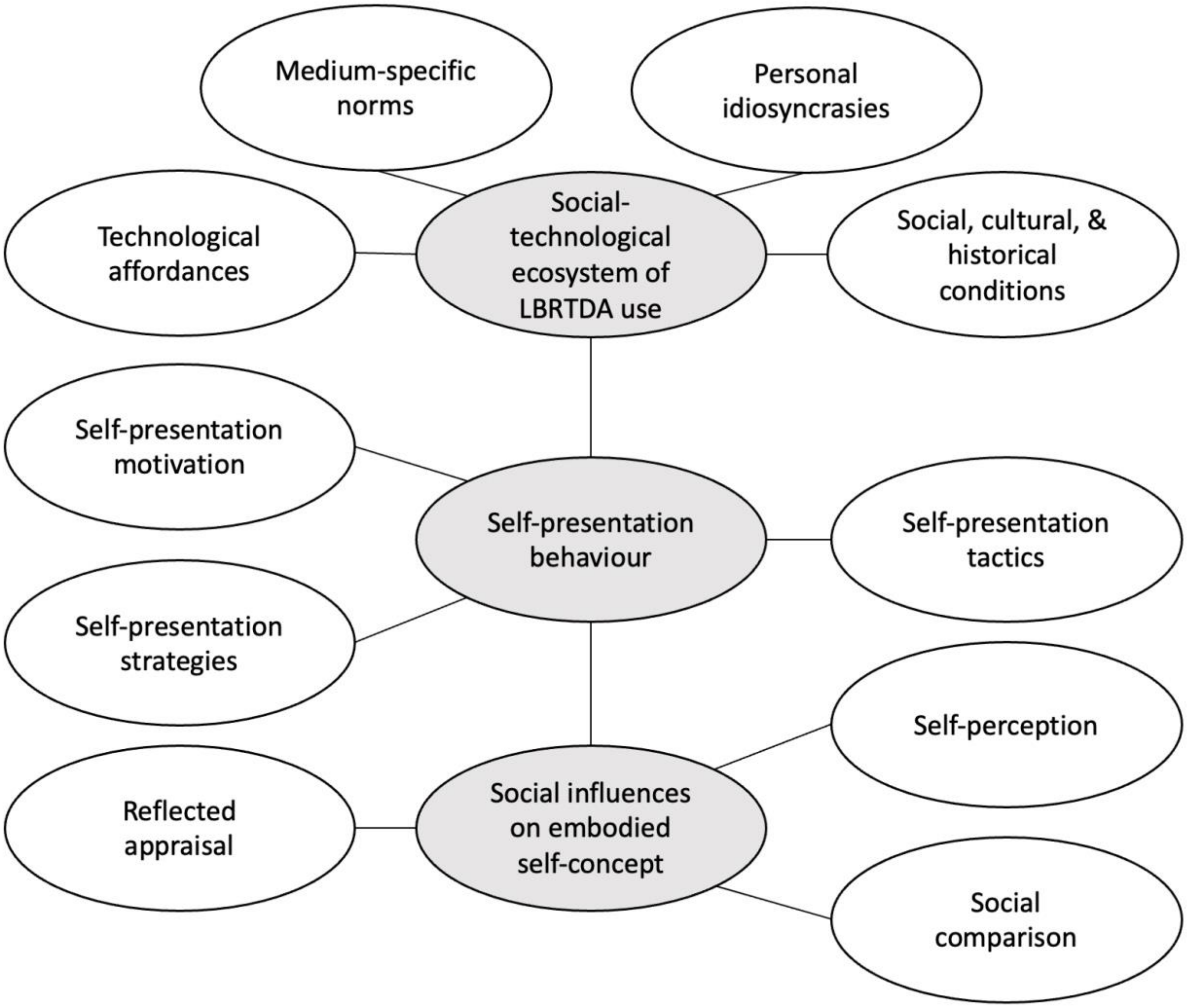
Medium-specific norms
Personal idiosyncrasies
Technological affordances
Social-technological ecosystem of LBRTDA use
Social, cultural, & historical conditions
Self-presentation motivation
Self-presentation behaviour
Self-presentation tactics
Self-presentation strategies
Self-perception
Reflected appraisal
Social influences on embodied self-concept
Social comparison

Figure 5.1. Framework diagram for how self-presentational tendencies as shaped by the social-technological ecosystem of LBRTDA use influence users' embodied self-concept.

Within this framework, we identified several self-presentational tendencies that might account for elevated rates of adverse body consciousness among LBRTDA-using GBMSM compared to non-users. Among those that influence reflected appraisal and its outcomes are norms encouraging talk of bodies, attenuated motivation to impression-manage with the multiply stigmatized, prioritizing of impression management via aesthetic self-promotion, reduced self-presentation motivation due to perceptions of surplus relational opportunity, anonymity-fuelled disinhibition, and appearance ideal construction through collective self-presentation. Factors that affect social comparison, on the other hand, include norms encouraging self-sexualization *qua* nudity, restricting of non-pictorial cues, widening of comparison asymmetries through selective self-presentation, and presentation believability through modesty of self-enhancement. Finally, objective self-awareness is affected by the intransigency of the embodied self-concept to assimilating its digitally-contrived presentation. These processes are likely to some degree mutually reinforcing in promoting adverse body consciousness. However, as we also demonstrate, certain other self-presentational processes function as countervailing forces that undercut the negative effects of LBRTDA use, including the ability of actors to display themselves in a flattering, compliment-garnering manner and audiences to suppress knee-jerk expressions of negative feelings, both of which are made possible by selective self-presentation. Further complicating matters are myriad personal and situational factors that moderate the abovementioned mechanisms of social influence independently of mediated self-presentation behaviour, such as trait self-esteem (Wallace & Tice, 2012), competitive disposition (Garcia, Tor

& Schiff, 2013), and individualist vs. collectivist cultural orientation (Heine et al., 2008). This complex and highly contingent web of causation would explain the significant, albeit weak statistical association between LBRTDA use and body dissatisfaction in GBMSM (Griffiths et al., 2018). Indeed, this work affirms the sociomaterialist position that the social and psychological outcomes of technology use are not pre-determined, but rather depend on how human and material agencies are situationally imbricated (Leonardi, 2011). In other words, whether and how technologies like LBRTDAs affect bodily self-conceptions and other phenomena depend on what they are used for, by whom, and in what broader contexts.

This study, like any other, has its share of limitations that invite refinement through future work. First, although interviewing is better suited than direct observation or content analysis to analyzing the motives or rationales underpinning impression management techniques, self-report data cannot reliably speak to the automaticity of self-presentation behaviour, as the act of probing *ipso facto* forces conscious reflection (Schlenker, 2012). Self-report data are also vulnerable to social desirability bias, particularly as it concerns misrepresentation. Because lying is considered normatively undesirable, participants might not be inclined to be completely forthcoming about how often and to what extent they do so (Ellison, Heino & Gibbs, 2006; Toma, Hancock & Ellison, 2008). It is therefore possible that the extent of deceptive self-enhancement and attendant phenomena like comparison asymmetry are understated. Finally, the paucity of respondents whose motivations of LBRTDA use could be described as “off-label”, i.e., not prescribed or sanctioned by the technology (Duguay, 2020), like engaging in sex work, selling drugs, and promoting social campaigns, limits our understanding of the self-presentation strategies they might uniquely compel and their potential contribution to users’ bodily self-conceptions.

Limitations notwithstanding, the grounded theory presented herein marks the first attempt to empirically examine how technology-mediated self-presentation *as such* affects users' bodily self-conceptions, using GBMSM-targeted LBRTDAs as a case study. Overall, self-presentation was found to offer a useful lens through which to view the varied effects of technology use on embodied sense of self and wellbeing. The ubiquity of networked technologies in realms as diverse as work, leisure, and dating compels us to interrogate the manifold ways in which they transform our relationships with ourselves and each other. As this work shows, doing so will require critical re-examination of even such quotidian and seemingly theoretically-exhausted phenomena as impression management.

Chapter 6. Conclusion

6.1 Summary and conclusion

To reiterate, the overarching goal of the program of research detailed in this thesis was to explore how use of certain popular Internet-enabled ICTs, including social media and LBRTDAs, influences bodily self-conceptions in GBMSM. This effort was spread across multiple studies, each of which addressed more specific questions and/or particular facets of this broad phenomenon.

Study 1 aimed through a critical review of the literature to develop a theoretical model for how social media and LBRTDAs influence bodily self-conceptions and attendant bodily practices in GBMSM. In its existing state, the literature was found to be prohibitively siloed and in need of integration. For instance, extant theory on body image disorder etiology exhibited a bias toward heterosexual women, as evidenced by popular concepts such as thin-ideal internalization, which overlook how appearance ideals vary qualitatively across gender and sexual identity. Theories of sexual identity-based disparities in body image disorders, meanwhile, neglect to consider the role of ICTs, which have been foundational to networking and community building since the early 90s. As a corrective, we proposed an extension to Perloff's (2014) transactional model of social media and body image concerns that includes additions to individual vulnerability factors that would predispose one to seek validation through social media, including minority stress, gender (non)conformity, and perceived self-standard discrepancy; as well as to mediating processes that account for body image-related changes resulting from social media use, including socioculturally-defined appearance ideals, online disinhibition, and objectification. We also submit that such a model should consider the possibility that certain mechanisms underlying social media use can protect or bolster bodily self-conceptions rather than exclusively undermine them, citing exposure to body-positive content as one such example.

Study 2 sought to empirically investigate how LBRTDAs, as a form of ICT with affordances and modes of use distinct from social media, influence bodily self-conceptions in GBMSM, focusing specifically on the case of Grindr, the most widely-used GBMSM-targeted LBRTDA. Three basic mechanisms were found to be relevant in this regard: weight stigma, sexual objectification, and social comparison. Stigma against bodies that are not sufficiently thin and/or muscular was said to be perpetuated interpersonally through disparaging appearance-related comments, and at greater frequency than in-person interaction for reasons related primarily to anonymity-fuelled online disinhibition and appearance-centred conversational norms. Objectification, or behaviours that reduce individuals' worth to the aesthetic facets of their embodiment, was more preponderant by virtue of the app's gender composition and sanctioned purpose of procuring casual sex. Comparisons, meanwhile, tend to skew further upward when made online than in person due to technology-assisted appearance augmentation. Certain other factors were identified that counteract these mechanisms and minimize the deleterious effects of Grindr use, including trait self-esteem, social support, and experience with app use.

Study 3 endeavoured to explore how different elements of the social-technological ecosystem arising from GBMSM's use of LBRTDAs interact to shape users' self-presentation behaviours, using presentation authenticity as an exemplar. Overall, participant description revealed a propensity for authentic self-presentation which is punctuated by modest falsehoods and less frequently by blatant, totalizing deception. In part, individuals' position on the authenticity-deception continuum was a result of the additive effect of various determinants, some facilitating of deception, including reduced cues, belief in the normalcy of lying, norms of self-objectification and competitiveness, and concerns of managing sexual identity-related stigma, and others constraining, including expectation of brokering physical connection. Impression construction determinants were also to some extent found to interact multiplicatively, that is, in a way where the influence of one is dependent on another. This was most plainly evidenced in the interactions between stigma management concerns, the affordances of audience visibility/control and locatability, and common ground reinforcing social hierarchy.

Study 4 sought to develop a theoretical framework grounded in empirical data that explains how self-presentation on LBRTDAs as such influences GBMSM's bodily self-conceptions. Various facets of the social-technological ecosystem of LBRTDA use (e.g., technological affordances; medium-specific norms; personal idiosyncrasies; and social, cultural and historical conditions) were found to interact in complex and emergent ways to effect a diversity of self-presentational phenomena (e.g., impression motivation, strategies, and tactics) which impinge on certain variable elements of multiple mechanisms of social influence (e.g., reflected appraisal, social comparison, objective self-awareness) such that their impacts on bodily self-conceptions differ in kind, direction, or degree as compared to interaction in person or other ICTs. Within this framework, we identified several self-presentational tendencies that might account for elevated rates of adverse body consciousness among LBRTDA-using GBMSM compared to non-users. Among those that influence reflected appraisal and its outcomes are norms encouraging talk of bodies, attenuated motivation to impression-manage with the multiply stigmatized, prioritizing of impression management via aesthetic self-promotion, reduced self-presentation motivation due to perceptions of surplus relational opportunity, anonymity-fuelled disinhibition, and appearance ideal construction through collective self-presentation. Factors that affect social comparison, on the other hand, include norms encouraging self-sexualization qua nudity, restricting of non-pictorial cues, widening of comparison asymmetries through selective self-presentation, and presentation believability through modesty of self-enhancement. Finally, objective self-awareness is affected by the intransigency of the embodied self-concept to assimilating its digitally-contrived presentation. These processes are likely to some degree mutually reinforcing in promoting adverse body consciousness. However, as we also demonstrate, certain other self-presentational processes function as countervailing forces that undercut the negative effects of LBRTDA use, including the ability of actors to display themselves in a flattering, compliment-garnering manner and audiences to suppress knee-jerk expressions of negative feelings, both of which are made possible by selective self-presentation.

If these discrete studies, varied as they are in their foci and nuances, admit any kind of general conclusion, it would be this: In any given social milieu, there exist one or more interactionally-constructed “thought collectives” or consensuses regarding the body which specify (1) its meanings, or through what prisms it is to be viewed (e.g., as an object of aesthetic appreciation, tool for labour, site of carnal pleasure); (2) its importance vis-à-vis other “objects” in the symbolic totality (i.e., how much it preoccupies the collective imagination); and (3) its proper uses and manifestations (i.e., what the body should function and look like). Individuals’ thoughts towards their own bodies consist primarily of their perception of these standards, their perception of the extent to which they match the standard, and their perception of the relative importance of that match (Fallon, 1990). Ours is, in a word, a looking glass body. Among contemporary North American GBMSM, one consensus that has come to achieve the status of hegemonic is that which elevates the body as something to be perfected for aesthetic and sexual consumption, and frames as ideal the White, fair-skinned, trimmed or hairless, muscular-mesomorphic, cisgender, able body. With respect to bodily self-conceptions, ICTs like social media and LBRTDAs function as another medium for sociocultural influence, which is to say, a platform through which individuals can be exposed to social behaviours that reflect and (re)constitute the abovementioned prevailing consensus(es), be it directly through interaction (e.g., instant messaging, liking, or commenting) or indirectly through engagement with persistent traces of past actions (e.g., viewing others' profiles and posts). These consensuses are not necessarily any different from those that predominate offline, qualitatively speaking – the idealized body looks roughly the same in both cases. Where ICTs differ from in-person interaction as to have a demonstrable, largely deleterious effect on users' body attitudes is with respect to how frequently and intensively the subject is confronted with the consensus – in other words, how often and to what extent the embodied self and its discrepancy from the standard is made salient. Receipt of appearance-related feedback, comparison against particular others, and switching of conscious attention to the embodied self are phenomena that similarly induce comparison against the standard and which occur more often and/or to greater effect online. This is partly a consequence of changes to human behavioural routines stemming from perception of technological affordance. Many of these changes relate to self-presentation, or the deliberate attempting to influence others' perceptions of oneself. These include, *inter alia*, feelings of disinhibition to behave in otherwise face-threatening ways, which embolden critical appearance-focused commentary, as well as the potential for enhancement of the self-image beyond what is possible offline, which prompts reflection on one's own imperfections and makes onlookers feel even more inadequate by comparison. However, these effects inevitably also come into tension with the human agency of the user, hence why the psychological outcomes of ICT use are neither total nor uniform. Users can resist to compare themselves to the consensus as reflected by others' behaviour, critique the prevailing consensus, and/or internalize all manner of alternative consensuses according to their goals and values. The process of interpretation is thus a crucial intervening factor between technology use and its downstream effects.

6.2 Contributions

The included works make numerous substantive, theoretical, and methodological contributions to the literature. **Study 1** is the first to provide any kind of theoretical framework that explains how use of social media and LBRTDAs influences bodily self-conceptions in GBMSM. Prior to this, there existed theoretical explanations of body image disorder etiology, heterosexual women's use of ICTs and its effect on body image, and sexual identity-based disparities in body image issues, but no efforts were yet made to integrate their propositions – a crucial deficiency, given evidence showing GBMSM in particular are avid users of such technologies, are disproportionately at risk of body image issues, and present unique pathways to such issues (e.g., GBMSM have qualitatively different body image ideals). The resulting framework also represents a novel departure from that on which it based (Perloff, 2014) by taking into consideration protective processes, which make conceivable the notion that ICT use does not necessarily uniformly result in negative outcomes, and indeed can even improve body image.

Studies 2 and 4 are among the first and still few empirical investigations into the relationship between LBRTDA use and bodily self-conceptions, much less those exploring mechanistic explanations and/or specifically in the context of GBMSM. Indeed, at the point of study 2's conception, there were no existing works that met all three criteria. Most research on GBMSM's use of LBRTDAs focus on sexual health, relationship development and maintenance, and community structure and dynamics. The omission of matters concerning body image is curious, given the subject's rather wide coverage in popular media (Arnold, 2018; Cadogan, 2019; Corrall, 2018; Levine, 2020), which suggests it is due not to its empirical triviality, but to an academic myopia. I would conjecture that this sluggishness in taking up an issue that community members themselves have for some time recognized stems from and reflects an enduring institutional heterosexist bias. This is furthermore, I think, testament to the benefit of research on matters concerning a particular community being conducted by members of that community, for the standpoint of the researcher inevitably comes to bear on the processes of problem identification, data collection and analysis, and representation (Naples & Gurr, 2014).

Study 3 joins a small body of research examining GBMSM's self-presentation behaviour on ICTs, and a smaller one still addressing LBRTDAs in particular. And it is the first, to my knowledge, to go beyond simply describing the patterns in these users' self-presentation strategies and tactics to systematically examine how the determinants of their construction interact. Traditionally, research on ICT-mediated self-presentation, in dating contexts and otherwise, focused on heterosexuals or neglected at all to consider the possible complications introduced by sexual identity. This is critical oversight, as the stigma attached to nonheterosexuality demands circumspect management of its signifiers as individuals navigate the structures of daily life. Using a novel methodological approach relying on interview data rather than content analysis of user profiles, which provided direct access to users' self-presentation motivations, we found that concerns around sexual identity disclosure were intimately bound up with other technological affordances and community norms in shaping how GBMSM present themselves in the online dating context, depicting a level of complexity as regards this phenomenon not before shown in the literature.

Continuing to advance study 2's objective of identifying social-psychological phenomena that explain how LBRTDAs influence GBMSM's bodily self-conceptions, and with the foundational insights of study 3 in hand, **study 4** is also the first known empirical investigation into how self-presentation behaviour as such influences the body image of ICT users in general, let alone LBRTDA-using GBMSM. Until this point, self-presentation was something of a "present absence" (Shilling, 2012) in research on ICTs' effects on body image – it was tacitly assumed as an underlying motivation for "problematic" behaviours like selfie editing and posting, but never analyzed in its own right, with all its attendant complexities (e.g., motives, determinants, patterns). Study 4 corrects this and shows that the ways in which technologies shape how users go about influencing others' impressions is foundational to their influence on bodily self-attitudes, and this observation and the identified underlying mechanisms have likely applicability for users of diverse social locations, not just GBMSM.

6.3 Implications for health promotion practice, policy, and industry

The implications of the included works for public discourse, policy, industry, and health promotion practice are legion. Here I will enumerate just a few of these to give a sense of the breadth of possibilities. First, developers seeking to design more socially-conscious apps and web services might consider implementing new features or modifying existing ones to mitigate the harmful effects of certain identified phenomena, like selfie editing and uncivil behaviour. To encourage the posting of unretouched photos, which could reduce the frequency/intensity of interpersonal comparison and self-rumination, developers might first ensure their apps contain a native camera function alongside the ability to upload external media for posting – ideally, one which offers only minimal editing options (e.g., cropping). The user interface might also be adjusted based on nudging theory to change its choice architecture – i.e., the way choices are presented to users (Thaler & Sustein, 2008; Weinmann, Schneider & vom Brock, 2016) – so that they are more likely to choose to take a new, unretouched photo than upload an existing, highly polished one. This could be done by making the "upload image" button less prominent relative to the "take photo" button, e.g., by relegating it to a peripheral region of the screen. Alternatively, prompts might be displayed that encourage taking a photo on the spot – something to the effect of "Show others the real you by using the in-app camera!" for example. Direct incentives could also be offered to users for using the in-app camera, such as by unlocking certain premium features like Boosts and Super Likes on Tinder or temporary access to Grindr XTRA.

It should be noted, though, that retouching software and filters have quickly become an integral part of people's "digital language", providing new ways of expressing the self and articulating connections. The social utility of augmenting technologies makes the surceasing of their use far from straightforward (Hess, 2015; Tifentale & Manovich, 2015). On the other hand, to reduce the incidence of uncivil behaviour like unsolicited sexual comments and appearance insults, apps could implement moderation tools similar to Twitter's recently-introduced anti-flaming feature, which issues a prompt to users when it automatically detects inflammatory language in their reply and gives them the option to revise it before posting (Statt, 2020). Companies could also amend their terms of service to more strictly prohibit behaviour that harasses, intimidates, or degrades others.

It would also behoove developers to more critically examine the potential discursive consequences of their information architecture choices – to wit, how the curatorial functions on dating apps, like filter categories and tribes, operate as cultural resources for self-knowledge. Allowing users to publicly identify themselves and sort through others on the basis of their height, weight and body type (most usually in reference to fat and muscle composition) reinforces assumptions as to these attributes' social importance and hence the degree to which they come to bear on individuals' self-conceptions. As with filters, though, the solution is unlikely to be as straightforward as eliminating profile sorting features and close-ended identifiers, as many still find it useful to be able to winnow their digital dating pool according to their preferences. Thus, any intervention will need to be sensitive to the ways in which socially-embedded actors actually use technologies to achieve their specific relational goals, lest it be resisted or worked around.

In a similar vein, health promoters seeking to change individual behaviour around social media and LBRTDA use in order to reduce the burden of negative body image would do well to consider the current findings, specifically those that point to the ambivalent outcomes of ICT use. That such technologies do not consistently engender negative bodily self-conceptions, and indeed for some can even be a source of self-esteem, spells problems for any approach aiming to curb or eliminate use outright. Such messaging would likely fail to resonate with large swathes of the general public, given the myriad other benefits of ICTs like providing access to broader networked publics and sources of social support. GBMSM in particular, with their unique motivations and gratifications of ICT use, could view messaging of this sort as being culturally insensitive in light of these technologies' historical importance in circumventing the cultural and legal barriers to forging physical and emotional connections. Health promoters might achieve better results by targeting specific "problematic" behaviours like selfie editing and flaming in order to make ICT use, on the whole, more salutary. For example, social marketing campaigns could be designed around convincing people of the psychological harms of retouching and the merits of "going natural". Preliminary work demonstrating the positive effects of various Internet trends that center on notions of authenticity, such as the #nofilter (Tiggemann & Zinoviev, 2019), #nomakeupselfie (Politte-Corn & Fardouly, 2020) and “Instagram vs. reality” (Tiggemann & Anderberg, 2020) movements, is suggestive of the possible successes to be had with these and similar approaches. Indeed, health promoters who seek to address these particular sorts of behaviours face a somewhat serendipitous situation in that the channels for dissemination of their messages are also the setting where the targeted behaviours are carried out (Korda & Itani, 2011). There is great potential for campaigns to be driven from the grassroots by users themselves, and for the organic emergence of further “body-positive” movements.

6.4 Limitations

The studies included in this thesis, as with any other, have their share of limitations. Some of these are inherent to the chosen data collection methods. As mentioned previously, this thesis is generally underpinned by a social realist epistemology, which assumes that while the institutions and structures of everyday life are created and sustained through joint human action, they also have certain obdurate features that exert “real”, material effects on members of a society. These features can for all intents and purposes exist independently of individuals’ perceptions and thus be misapprehended and/or misrepresented by study informants. The fidelity of the data obtained through interview methods is therefore to some degree predicated on the reliability of participants’ accounts. This can pose an issue in cases where participants have reason to distort accounts of their experiences, attitudes, or past actions, such as when they threaten to undermine a particular self-image one seeks to foster. Much of the subject matter in the included articles has to do with behaviours that are normatively perceived as undesirable or inappropriate, and are hence for perpetrators discrediting, including deception (in this case, via selective self-presentation) and aspersion (particularly that directed at appearance). By virtue of the methodology, we had little choice but to take participants at their word, even though they may themselves be managing impressions and downplaying the extent to which they engage in these behaviours (the post-positivist, quantitative analog of this phenomenon is social desirability bias). Thus, if anything, the prevalence and extent of selective self-presentation via filters and retouching apps, as well as appearance-related comments, may be understated. That said, measures were undertaken to ensure honesty in informants (Shenton, 2004) and thus mitigate these effects, including giving individuals ample opportunity to refuse to participate in the project so as to ensure free and unreluctant offering of data, encouraging participants during the interview preamble to be frank and reassuring them of the confidentiality of their responses, attempting to establish a rapport with participants at the outset to increase their level of comfort, and downplaying status signifiers (e.g., dressing and speaking informally) to minimize impression management motivation.

Some other limitations stem from the composition of the sample, the most notable of which being the paucity of individuals whose embodiments approximate the abovementioned hegemonic consensus. Presumably, it would be a substantially different experience to persistently be reminded via comparison, feedback, etc. of one’s proximity to the standard rather than distance. Rare as they may be (and indeed, the case has been made that the unattainability of certain hegemonic consensuses of self-image is key to preserving their power; Kaufman, 1999), the absence of these individuals’ testimony prevents us from achieving a comprehensive understanding of how the perpetuation of said consensus in ICT-mediated communication affects the gamut of users. In a similar vein, the lack of participants whose motivations for LBRTDA use can be described as “off-label”, i.e., not prescribed or sanctioned by the technology (Duguay, 2020), such as those who primarily use the app for sex work, selling drugs, promoting social campaigns, and having phone/cybersex, limits the transferability (Lincoln & Guba, 1985) of the findings. Though these individuals, too, seem to comprise only a minority of the userbase, they could respond differently to the same kinds of social influence. Those who use the app purely to find and correspond with clients might be less primed to internalize appearance feedback from others or engage in comparison, for example.

I do feel compelled to note, given that this research exists at the intersection of several traditionally post-positivist disciplines, that I do not consider the size of the sample and its lack of statistical-probabilistic generalizability (i.e., the ability to make inferences at the population level) to be a weakness of this research, however. This realist criterion of rigour presupposes that unbiased knowledge can be unproblematically extracted from participants, and thus is incommensurate with the epistemological assumptions that underlie this work. Moreover, generalization at the population level was not a goal of this research. I sought to obtain rich data to reveal the nature and breadth of the phenomena under study, not to determine the prevalence of particular views or experiences (Smith, 2017).

Certain other procedural choices restrict the degree to which the credibility of the findings, i.e., their congruence with reality (Guba, 1981), can be guaranteed. For instance, member checking – granting participants the opportunity to approve aspects of the interpretation of the data that they provided (Carlson, 2010) – was limited to being performed “on the spot” in the course of the interview, wherein I would periodically ask participants to clarify statements they made, ask about hypothetical situations, or pose my theoretical interpretation of their statements back to them and confirm whether it accurately reflected their position. I refrained from any post-hoc respondent validation of emerging frameworks and manuscript drafts out of concern that any potential benefits to this would fail to justify the likely setbacks. As Morse et al. (2002, p. 16) note,

> The problem of member checks is that, with the exception of case study research and some narrative inquiry, study results have been synthesized, decontextualized, and abstracted from (and across) individual participants, so there is no reason for individuals to be able to recognize themselves or their particular experiences ... Investigators who want to be responsive to the particular concerns of their participants may be forced to restrain their results to a more descriptive level in order to address participants' individual concerns. Therefore, member checks may actually invalidate the work of the researcher and keep the level of analysis inappropriately close to the data.

Nevertheless, in foregoing this step, this research is deprived of one important mechanism of ensuring the analysis as a whole usefully explains individual participants' experiences. Interview data could also have been triangulated with observation or content analysis of user profiles and interfaces (such as through appnographic (Cousineau, Oakes & Johnson, 2018) and digital walkthrough (Light, Burgess & Duguay, 2018) methods) to verify and substantiate participants' descriptions, but this would have been prohibitively time-consuming, and given the richness of the interview data, would likely have made analysis unwieldy. However, such methods are better suited than interviewing to teasing out the specific contributions of technological affordances to psychological and social change and thus should be considered in future work of this sort.

6.5 Directions for future research

The research space that exists at the intersection of technology, sexuality, and embodiment remains far from settled even with the inclusion of this thesis. In addition to the nigh-innumerable "unknown unknowns", the current work suggests several "known unknowns" that offer possible directions for future research. First, it is apparent across multiple of the included studies that a powerful safeguard against negative self-attitudes stemming from internalization of the hegemonic body standard as it is perpetuated by many of the most popular GBMSM-targeted ICTs is exposure to and internalization of alternative, more self-affirming standards – ones that instantiate different bodily meanings (e.g., as a vessel for experiencing life's pleasures, as something to be unconditionally cherished) and acceptable forms of embodiment (e.g., as fat, hairy, non-white, effeminate, trans, disabled), as perhaps best exemplified by the discourses of fat acceptance (Afful & Ricciardelli, 2015) and body positivity (Darwin & Miller, 2020). These discourses serve as counterposing "voices" for self-reflection (Crossley, 2006), offering different frames of reference for making sense of one's own embodiment, and in turn precipitating different emotional states (e.g., a greater sense of bodily self-pride or satisfaction; Stevens & Griffiths, 2020). It is unclear, though, how and to what extent such alternative discourses pervade the general digital milieu, much less in GBMSM-dominated digital spaces – in other words, their strength and impact relative to the hegemonic consensus and their distribution across demographics, user motives, and so on. It also remains to be explored how heterosexual and gay/bi/queer men alike reflexively negotiate and respond to these discourses, given their roots in feminist activism and scholarship. For instance, there has been little sustained scholarship on the endemic discourses of the "bear" community, a gay male subculture reputed for its privileging of large bodies as sexually attractive (Quidley-Rodriguez & De Santis, 2017). Thus, the emancipatory potential of this and similar cultural countercurrents remains to be verified.

By extension, it is unknown what role "body-positive" platforms can play in combating technology-related body dissatisfaction. In recent years, there has been a proliferation of dating websites and apps targeting specific subcultures of GBMSM, like bears. These platforms, such as BiggerCity and GROWLr, advertise themselves as catering to like-minded users who subscribe to and embody alternative notions of beauty. Presumably, by virtue of these apps' user composition, they are host to different discursive configurations (e.g., one in which the muscular-mesomorphic ideal is relatively more marginal) that occasion different self-presentation strategies and other interpersonal behaviours compared to more mainstream platforms. However, no effort has yet been made to understand GBMSM's experiences of these platforms. Whether and how these alternative platforms influence bodily self-conceptions on their own, as well as how simultaneous users of these and mainstream platforms apportion their time and energy between them and experience their potentially conflicting influences, are fruitful avenues for future research.

Finally, one other area that remains under-theorized is how LBRTDAs figure into the broader texture and rhythms of everyday life for GBMSM. Data illustrate that only a fraction of users spend more than a few hours on dating apps each day (Goedel & Duncan, 2015). For the overwhelming majority of people, it is highly improbable that these technologies are the sole or even most important influence on their bodily self-conceptions. Yet, most research tends to treat them as existing in a vacuum and ignores how they might interact with other social-environmental influences, including other networked technologies, mass media, and local peer and family networks. Depending on individuals' unique circumstances, these interactions can be synergistic or counterpoising – someone who is used to their appearance being disparaged by family might be more vulnerable to similar such comments on Grindr, whereas another person with a stronger support network may tend to shrug the same types of comments off, for example. Thus, future research that is better attuned to the broader context of LBRTDA use could inquire into such phenomena as: the cumulative effects of various ICTs that comprise one's "social media ecosystem" (DeVito, Walker & Birnholtz, 2018); the means by which individuals cope with and develop resilience against the deleterious effects of ICTs on their bodily self-conceptions; and the social facilitators and barriers to modifying maladaptive ICT usage habits.

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Appendices

Appendix 1 – Recruitment materials

Study II – Recruitment poster

School of Public Health and Health Systems
University of Waterloo

PARTICIPANTS NEEDED FOR RESEARCH IN BODY IMAGE AND GAY DATING APPS

We are looking for volunteers to take part in a study on the influence of geosocial networking apps on body image among gay, bisexual and other men who have sex with men (MSM).
As a participant in this study, you would be asked to partake in a single one-on-one in-person interview.
Your participation would involve 1 session ranging from 30 to 60 minutes.
In appreciation for your time, you will receive
$20 CAD cash immediately following the interview.
For more information about this study, or to volunteer for this study,
please contact:
Eric Filice
School of Public Health and Health Systems

at
efilice@uwaterloo.ca

This study has been reviewed by, and received ethics clearance through a University of Waterloo Research Ethics Committee.

Study IV – Recruitment poster

School of Public Health and Health Systems
University of Waterloo

PARTICIPANTS NEEDED FOR RESEARCH ON BODY IMAGE AND GAY DATING APPS

We are looking for male volunteers age 18+ who identify as gay, bisexual, queer, or otherwise non-heterosexual to take part in a study on location-based real-time dating apps (e.g., Grindr, Tinder, SCRUFF) and body image.
As a participant in this study, you would be asked to partake in a one-to-one interview by phone or video conferencing software (e.g., Skype, Zoom, Facetime).
Your participation would involve 1 session approximately 60-90 minutes in length.
For more information about this study, or to volunteer for this study,
please contact:
Eric Filice

Email: efilice@uwaterloo.ca

This study has been reviewed by, and received ethics clearance through a University of Waterloo Research Ethics Committee.

Appendix 2 – Consent materials

Study II – Information-consent form

Information-Consent Form

Title of the study: Experiences with body image and disordered weight and shape control behaviours among gay and bisexual men who use geosocial networking applications: An interpretive phenomenological study

Principle Investigator/Faculty Supervisor: Dr. Samantha Meyer, School of Public Health and Health Systems, Applied Health Sciences, University of Waterloo. T: 519-888-4567 ext. 39187. Email: samantha.meyer@uwaterloo.ca

Co-investigator: Dr. Elena Neiterman, School of Public Health and Health Systems, Applied Health Sciences, University of Waterloo. T: 519-888-4567 ext. 38221. Email: eneiterman@uwaterloo.ca

Student Investigator: Eric Filice, School of Public Health and Health Systems, Applied Health Sciences, University of Waterloo. Email: efilice@uwaterloo.ca

To help you make an informed decision regarding your participation, this letter will explain what the study is about, the possible risks and benefits, and your rights as a research participant. If you do not understand something in the letter, please ask one of the investigators prior to consenting to the study. You will be provided with a copy of the information and consent form if you choose to participate in the study.

Invitation to participation/What is the study about?

You are invited to participate in a research study looking at Grindr users' experiences of body image, body satisfaction, and disordered weight and shape control behaviours. Past research has shown that gay, bisexual, and other men who have sex with men are at increased risk of having poor body image and eating disorders, but little is known about the role Grindr and other gay dating apps play, if any. We want to look at the nature of this relationship.

I. Your responsibilities as a participant

What does participation involve?

You will be asked to partake in a single one-on-one interview session with the student investigator of approximately 20-30 minutes in length taking place in a mutually agreed upon location and time.

With your permission, the interview will be audio recorded to facilitate collection of information, and later transcribed for analysis.

Who may participate in the study?

In order to participate in the study, you must:

- Be at least 18 years of age
- Identify as a man
- Identify as gay, bisexual, queer, or otherwise not heterosexual/straight **OR** be attracted to/interested in men **OR** have previously had sex with men
- Have some personal previous experience using Grindr

II. Your rights as a participant

Is participation in the study voluntary?

Your participation is completely voluntary. You may decline to answer any of the interview questions if you so wish. You may also end the interview any point. Note that it is not possible to remove your data from the study once collected because all identifying information is removed from the data immediately.

Will I receive anything for participating in the study?

In appreciation of your time, you will receive a one-time payment of $20 in cash from Eric Filice immediately following the interview. The interview must be completed in full to receive payment. The amount received is taxable. It is your responsibility to report this amount for income tax purposes.

What are the possible benefits of the study?

Participation in this study may not provide any personal benefit to you, but will benefit the academic community insofar as we will have a better understanding of the nature of the relationship between geosocial networking app use, body image, body satisfaction, and disordered weight and shape control behaviours. Broader society may benefit from greater knowledge of the social climate of online dating and public health risks faced by gay, bisexual and other men who have sex with men.

What are the risks associated with the study?

The risks for participation in this study are minimal. Some people may get upset discussing their body image, identity or past experiences. If this happens to you, please feel free to skip the questions that you do not want to answer or to stop the interview completely.

Will my identity be known?

All personal identifiers will remain strictly confidential. All identifying information is removed from the data immediately.

Will my information be kept confidential?

Because all identifying information is immediately removed from the data, your name or any other personal identifying information will not appear in any manuscripts, publications, book chapters or conference presentations resulting from this study. However, with your permission anonymous quotations may be used. Notes taken from the interview will be retained for one year in a secure location and then destroyed. Audio recordings will be deleted immediately after transcribing them. Also (and only if you agree), Dr. Samantha Meyer and/or Eric Filice will keep the interview transcript for the period of 5-10 years for future research, but they will make sure that the interview transcript will not have your name or information on it.

III. Questions, comments, or concerns

Who is sponsoring/funding this study?

This study is not funded.

Has the study received ethics clearance?

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE#22698). If you have questions for the Committee contact the Chief Ethics Officer, Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca

Who should I contact if I have questions regarding my participation in the study?

If you have any questions regarding this study, or would like additional information to assist you in reaching a decision about participation, please contact Eric Filice by email at efilice@uwaterloo.ca.

What if the study procedure(s)/topic causes me distress/concern?

Counselling services are provided free of charge to currently registered and co-op students at the University of Waterloo. Visit https://uwaterloo.ca/campus-wellness/counselling-services or call 519-888-4567 ext. 32655 for more information.

The Glow Centre for Sexual and Gender Diversity is located on campus and offers confidential peer support from trained volunteers. Visit https://uwaterloo.ca/feds/feds-services/glow-centre-sexual-and-gender-diversity or call 519-888-4567 ext. 38569 for more information.

CMHA Waterloo Wellington provides 24-hour prevention, assessment, intervention and resolution services for urgent crisis situations. No appointment is required. Crisis line/crisis mobile team (Here 24/7): 844-437-3247. Distress centre phone (24/7 supportive listening): 519-745-1166. Youth line: 519-745-9909 EARS line (advocates for male victims of sexual assault): 519-570-3277, toll free 800-553-2377. Mental health and addictions database: 519-744-5594.

Visit http://chd.region.waterloo.on.ca/en/researchResourcesPublications/contactus.asp for a list of services provided Region of Waterloo Public Health and Emergency services. Information about community legal services are available at http://www.wrcls.ca or 519-743-0254.

Consent Form

By providing your consent, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities.

Title of the study: Experiences with body image and disordered weight and shape control behaviours among gay and bisexual men who use geosocial networking applications: An interpretive phenomenological study

I have read the information presented in the information letter about a study conducted by Dr. Samantha Meyer and Eric Filice, School of Public Health and Health Systems, Applied Health Sciences, University of Waterloo. I have had the opportunity to ask questions related to the study and have received satisfactory answers to my questions and any additional details.

I was informed that participation in the study is voluntary and that I can withdraw this consent by informing the researcher.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE#22698). If you have questions for the Committee contact the Chief Ethics Officer, Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions contact Eric Filice at efilice@uwaterloo.ca.

- ☐ I agree to my interview being audio recorded to ensure accurate transcription and analysis.

- ☐ I agree to the use of anonymous quotations in any thesis or publication that comes from this research.

I agree of my own free will to participate in the study.

Participant’s name: ________________________ Date: ______________________

Participant’s signature: _____________________ Date: ______________________

Researcher’s/Witness’ signature: ___________________ Date: _________________

Study III – Information letter

Date

Dear Volunteer,

You are invited to consider participating in a study conducted by Dr. Corey Johnson, Dr. Diana Parry, and Dr. Lisbeth Berbary, faculty in the Department of Recreation and Leisure Studies at the University of Waterloo. This letter has been sent to you on behalf of the research team, and contains information about the nature of the study, requested commitment as a participant, and your rights as a potential participant.

The main purpose of this study is to understand the impact and implications for gender roles and sexual social practices for adults who use geo-social networking applications (GSNAs). GSNAs are the fastest growing dating applications today, and the research demonstrates that GSNAs are not sites solely for youth who have grown up using technology, but are also frequented by adults frustrated with traditional, off-line means of finding a relationship or sexual partner.

Despite the popularity of GSNAs, they have only recently garnered academic interest. Toward this end, a few empirical studies have explored GSNAs, but they have primarily focused on public health issues (i.e. transmission of sexually transmitted disease) and data security/privacy issues. Consequently, we know GSNAs are popular, but we do not understand how they impact the users' sexual well being. Therefore, the second objective of the proposed research is to understand the positive and negative impacts of GSNAs on sexual relationships, and subsequent quality of life.

We would like to include you in this study of user experience with GSNAs. You are eligible to participate in the study if you are a user of Grindr, Tinder, or Her. We believe that through your individual experience with these applications, that you may have unique perspectives to share.

This study involves one-on-one interviews with one of the study investigators. These will take approx. 60 minutes and take place on a day and time that is convenient to each participant. At the end of each interview, participants will be given a $25.00 gift card to iTunes to thank them for their time.

Participation in this study is voluntary. You may decline to answer any portion of the interview if you so wish. Further, you may decide to withdraw from this study at any time without any negative consequences by advising the researcher. With your permission, the interview will be audio recorded to facilitate collection of information, and later transcribed for analysis. Shortly after the interview has been completed, we will send you a copy of the transcript to give you an opportunity to confirm the accuracy of our conversation and to add or clarify any points that you wish. At the conclusion of the study, a summary report outlining key findings will be sent to all participants. All information you provide is considered completely confidential. Your name will not appear in any report resulting from this study; however, with your permission anonymous quotations may be used. The status of your participation will not be shared. Data collected during this study will be retained for five years the locked office of the principal investigator. Only researchers associated with this project will have access. There are no known or anticipated risks to you as a participant in this study.

If you are interested in participating in this study, please reply to this email or contact Dr. Corey Johnson at corey.johnson@uwaterloo.ca. Dr. Johnson would be pleased to answer any questions you might have and can provide you with additional information to assist you in reaching a decision about participation.

We would like to assure you that this project has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee. However, the final decision about participation is yours. Participants who have concerns or questions about their involvement in the project may contact the Chief Ethics Officer, Office of Research Ethics at 519-888-4567, Ext.36005 or Maureen.nummelin@uwaterloo.ca.

We hope that the results of the study will be of benefit to our understanding of the use of GSNAs and their effect on users. We very much look forward to speaking with you and thank you in advance for your assistance in this project.

Yours Sincerely,

Corey Johnson, PhD
Professor
Recreation and Leisure Studies
University of Waterloo
Corey.johnson@uwaterloo.ca
519-888-4567 x32716

Lisbeth Berbary, PhD
Assistant Professor
Recreation and Leisure Studies
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Diana Parry, PhD
Professor
Recreation and Leisure Studies
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dcparry@uwaterloo.ca
519-888-4567 x33468

Study III – Consent form

By signing this consent form, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities.

I have read the information presented in the information letter about a study being conducted by Dr. Corey Johnson, Dr. Diana Parry, and Dr. Lisbeth Berbary of the Department of Recreation and Leisure Studies at the University of Waterloo. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my interview/focus group to be audio recorded to ensure an accurate recording of my responses.

I am also aware that excerpts from the interview/focus group may be included in the thesis and/or publications to come from this research, with the understanding that the quotations will be anonymous.

I was informed that I may withdraw my consent at any time without penalty by advising the researcher.

This project has been reviewed by, and received ethics clearance through a University of Waterloo Research Ethics Committee. I was informed that if I have any comments or concerns resulting from my participation in this study, I may contact the Director, Office of Research Ethics at 519-888-4567 ext. 36005.

With full knowledge of all foregoing, I agree, of my own free will, to participate in this session and to keep in confidence information that could identify specific participants and/or the information they provided.
YES NO

I agree to have my interview/focus group audio recorded.
YES NO

I agree to the use of anonymous quotations in any report or publication that comes of this research.
YES NO

Participant Name: ____________________________ (Please print)

Participant Signature: _________________________ Date: ______________

Witness Name: ________________________________ (Please print)

Witness Signature: ____________________________ Date: ______________

Study IV – Information letter

Information-Consent Form

Title of the study: Digital looking glass or funhouse mirror?: Self-presentation on location-based real-time dating apps and reflexive embodiment in men seeking men

Principle Investigator: Dr. Samantha B. Meyer, University of Waterloo. Email: samantha.meyer@uwaterloo.ca

Co-investigators: Dr. Elena Neiterman, University of Waterloo. Email: elena.neiterman@uwaterloo.ca

Dr. Diana C. Parry, University of Waterloo. Email: dcparry@uwaterloo.ca

Student Investigator: Eric Filice, University of Waterloo. Email: efilice@uwaterloo.ca

To help you make an informed decision regarding your participation, this letter will explain what the study is about, the possible risks and benefits, and your rights as a research participant. If you do not understand something in the letter, please ask one of the investigators prior to consenting to the study. You will be provided with a copy of the information and consent form if you choose to participate in the study.

What is the study about?

Previous research has shown that use of dating apps like Grindr and Tinder can affect the ways one perceives and evaluates their own body and appearance. We aim through this study to gain a better understanding of the mechanisms by which this occurs among gay, bisexual and other men who have sex with men, focusing specifically on the process of self-presentation, or the manner in which one goes about displaying themselves online.

I. Your responsibilities as a participant

What does participation involve?

You will be asked to partake in a single one-on-one interview session with a student investigator of approximately 60-90 minutes in length either by phone or video conferencing software (e.g., Skype, Zoom, Facetime).

Some of the questions you will be asked include the following:

- What dating apps are you currently using or have used previously?
- Why do you use dating apps? What are you expecting to get out of them?
- How do you present yourself in your profile picture(s)? What did you show?

- What are you aiming to achieve with the way you present yourself? Why do you present yourself this way?
- How does your presentation affect how you feel about your appearance?
- How do you feel when you encounter someone whose appearance you think is superior to your own?

Demographic questions will also be asked, such as:

- How do you identify in terms of sex/gender?
- How would you describe your racial, ethnic or cultural background?

These questions are asked in order to describe the characteristics of the participants in this study as well as to examine differences and trends across these characteristics.

With your permission, the interview will be audio recorded to facilitate collection of information, and later transcribed for analysis.

Who may participate in the study?

Individuals are eligible to participate if they:

(a) identify as men or masculine-aligned;
(b) identify as gay, bisexual, queer, two-spirit, are sexually and/or romantically attracted to men, have previously had sex with men, or have the intention or desire to have sex with men in the future;
(c) are 18 or older; and
(d) have used any combination of location-based real-time dating apps (e.g., Tinder, Grindr, SCRUFF, Recon, Jack'd, Hornet) to an extent they deem personally significant.

II. Your rights as a participant

Is participation in the study voluntary?

Your participation is completely voluntary. You may decline to answer any of the interview questions if you so wish. You may also end the interview any point.

Will I receive anything for participating in the study?

No remuneration will be provided for participation in this study.

What are the possible benefits of the study?

Participation in this study may not provide any personal benefit to you, but will benefit the academic community insofar as we will have a better understanding of how self-presentation behaviour on dating apps influences users’ body image.

What are the risks associated with the study?

There is a short-term risk that the topics covered in the interview conversations would cause some emotional distress as you reflect on your body image, sexuality and use of information technologies. These are most likely to be low severity.

Will my information be kept confidential?

Your participation will be considered confidential. Identifying information will be removed from the data that is collected after transcribing the audio recording, and stored separately. Your name will not appear in any manuscripts, publications, book chapters or conference presentations resulting from this study. However, with your permission anonymous quotations may be used.

Collected data will be encrypted and securely stored by the research team for a minimum of 7 years in locked offices and on password-protected computers. We will keep identifying information for a minimum of 1 year, after which point the data will be anonymized. You can withdraw consent to participate and have your data destroyed by contacting us within this one-year period. All records will be destroyed according to University of Waterloo policy. It is not possible to withdraw your consent once study results have been submitted for publication. Please note that the de-identified dataset may be shared publicly (e.g. in data repositories or with other researchers)

When information is transmitted over the internet privacy cannot be guaranteed. There is always a risk your responses may be intercepted by a third party (e.g., government agencies, hackers). University of Waterloo researchers will not collect or use internet protocol (IP) addresses or other information which could link your participation to your computer or electronic device without first informing you.

Study IV – Oral consent script

Study procedures:

You are invited to participate in a one-on-one telephone interview that will take about 60-90 minutes. I will ask you questions relating to your use of dating apps, the manner in which you present yourself on these apps, and the effect this self-presentation behaviour has on the way you think about your body and appearance. I will take handwritten notes as well as use an audio recorder to make sure I don’t miss what you say.

Risks:

There is a short-term risk that the topics covered in the interview conversations would cause some emotional distress as you reflect on your body image, sexuality and use of information technologies. These are most likely to be low severity.

Benefits:

Participation in this study may not provide any personal benefit to you, but will benefit the academic community insofar as we will have a better understanding of how self-presentation behaviour on dating apps influences users' body image.

Voluntary participation:

Your participation is completely voluntary. You may decline to answer any of the interview questions if you so wish. You may also end the interview any point. If you decide to stop participating, there will be no consequences to you. If you decide to stop we will ask you how you would like us to handle the data collected up to that point. This could include returning it to you, destroying it or using the data collected up to that point.

Your participation will be considered confidential. Identifying information will be removed from the data that is collected after transcribing the audio recording, and stored separately. Your name will not appear in any manuscripts, publications, book chapters or conference presentations resulting from this study. However, with your permission anonymous quotations may be used.

We will keep identifying information for a minimum of 7 years and our study records for a minimum of 7 years. We will keep identifying information for a minimum of 1 year, after which point the data will be anonymized. You can withdraw consent to participate and have your data destroyed by contacting us within this one-year period. Only those associated with this study will have access to these records which are encrypted and password-protected. It is not possible to withdraw your consent once papers and publications have been submitted to publishers. All records will be destroyed according to University of Waterloo policy.

When information is transmitted over the internet privacy cannot be guaranteed. There is always a risk your responses may be intercepted by a third party (e.g., government agencies, hackers). University of Waterloo researchers will not collect or use internet protocol (IP) addresses or other information which could link your participation to your computer or electronic device without first informing you.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee. If you have questions for the Committee contact the Office of Research Ethics at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

If you have any questions regarding this study, or would like additional information to assist you in reaching a decision about participation, please contact Eric Filice by email at efilice@uwaterloo.ca.

By providing your consent, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities.

Consent questions:

- Do you agree to your interview being audio recorded to ensure accurate transcription and analysis?

- Do you agree to the use of anonymous quotations in any publication that comes from this research? Do you understand that you may be referenced by your demographic characteristics (e.g., “A 23 year-old Black gay man”) and/or a pseudonym?

- Do you agree of your own free will to participate in the study?

  [If yes, begin the interview.]
  [If no, thank the participant for their time.]

III. Questions, comments, or concerns

Who is sponsoring/funding this study?

This study is not funded.

Has the study received ethics clearance?

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE#42664). If you have questions for the Committee contact the University of Waterloo’s Office of Research Ethics at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

Who should I contact if I have questions regarding my participation in the study?

If you have any questions regarding this study, or would like additional information to assist you in reaching a decision about participation, please contact Eric Filice by email at efilice@uwaterloo.ca. You may also contact the principle investigator, Dr. Samantha Meyer, at samantha.meyer@uwaterloo.ca.

Appendix 3 – Interview guides

Study II – Initial interview guide (prior to first interview)

1. **What is your experience like using Grindr?**

- How long have you been on Grindr?
- How often do you use Grindr?
- When are you most likely to be on Grindr? Why at this time?

- Why do you use Grindr? What are you looking for?
- How do you decide who you want to talk to? Do you have any kind of screening process?
- How does a typical conversation go?

- What are some positive experiences you've had while using Grindr? Why was this a good experience?
- What parts of using the app do you enjoy?

- What are some negative experiences you've had while using Grindr? Why was this a negative experience?
- What parts of the app do you dislike, or feel could be improved?

- Do you use any other dating apps? Which ones?
- How do these apps differ from Grindr?
- Why do you use these apps in addition to Grindr?

- Does Grindr influence how you feel about yourself? How? Can you think of an example?
- Does Grindr influence any other aspects of your life? How? Can you think of an example?

2. **Can I see your display picture? Why did you choose this picture?**

- Why did you choose your current display picture?
- Is having a display picture on Grindr important? Why?
- What do you look for in others' display pictures?
- What makes a good display picture?
- What makes a bad display picture?
- What did you do to prepare your display picture? What work goes into it?
- Do you feel there is a difference between how men present themselves on Grindr versus in-person?
- Have you had an experience where someone's online presentation was different from what they were like in-person? How did this go?

3. **How do you take care of yourself?**

- How would you describe your current level of health or wellness?

- Do you feel like your current behaviours are healthy? Why or why not?

- What is a typical day like for you? How do you keep yourself mentally and physically healthy?
- Do you have any kind of meal plan? What do you like to eat?
- Is what you eat important to you? How does eating make you feel?
- Is physical activity important to you? Why?

- How would you describe your appearance?
- What is your ideal appearance? How would you like to look? Does this differ from how you feel you currently look?
- How do you feel you should look? How does this differ from how you currently look?
- What makes you feel like this is a look you should have?
- Is there an appearance that you fear having or wish to avoid?

- What do you like about your appearance? Why?
- What do you dislike about your appearance? Why?
- Overall, would you describe your view of your own appearance as positive or negative?

4. **Demographic information:**

- What sex/gender do you identify as?
- What is your age?
- How would you describe your sexual orientation?
- How would you describe your racial, ethnic or cultural background?
- Do you have any accessibility considerations you think are relevant and wish to disclose?

5. **Is there anything else you'd like to talk about? Is there anyone in particular to whom you feel I should refer about this topic?**

Study II – Final interview guide (at time of last interview)

1. What is your experience like using Grindr?

- How long have you been on Grindr?
- How often do you use Grindr?
- Why do you use Grindr? What are you looking for?
- Are you using any other dating apps? Which ones? How do these apps differ from Grindr?
- How does Grindr differ from other social media platforms (Facebook, Instagram, etc.)

2. What do you like about Grindr?

3. What do you dislike about Grindr?

4. Participants have thus far described to me a range of impression management techniques they use to have a very tightly curated image of themselves on Grindr that shows them in the best light possible — not going below your shoulders, using filters, facetune, sucking in your stomach.

- How do you think this collective practice affect individuals?
- How do you think this affects Grindr's social climate?
- Is there greater incentive to present oneself in this way on Grindr than other forms of social media? Why?

5. How do people's behaviour on Grindr differ from their in-person selves?

- How does this behaviour affect you?

6. Do you find yourself making comparisons with others on Grindr?

- Does this occur more frequently on Grindr than on other social media apps? Than in person?
- How does Grindr facilitate these comparisons? Marketing strategies? App design?

7. Have you been subject to what you feel is objectification on Grindr?

- How do you feel Grindr encourages or prevents sexual objectification?

8. Do you feel the way you use the app in any way influences its effect on your body image and/or self-esteem? Why?

- Length of time using the app, frequency of app use, number of apps used concurrently, intentions for app use

9. Do you feel Grindr's user interface could, in any way, shape your thoughts or interactions on the app? How?

10. What do you think influences whether Grindr harms someone's body image or self-esteem? Why are some people badly affected while others are not?

11. Where is Grindr implicated in the social norms of the broader gay community?

- Does Grindr have any particular social norms? What are those norms?
- How do they differ from broader "gay community" norms, if at all?

12. How do you feel your identity influences your experience of Grindr?

- Age?
- Race?

- Gender?
- Sexual orientation?

13. What would you change or improve about Grindr, if anything at all?

Study III – Interview guide

LEAD ONE: Explore how GSNA's are influencing gender identities within straight, bisexual, lesbian and gay communities.

1. Tell me about how you identify in terms of sexuality and gender, racial identity, social class, and generationally?
    a. How do you feel your sexuality or gender fits into popular notions of our understandings of straight, LGBTQ?
    b. Tell me about how your sexuality and gender is seen by those around you. Parents, friends, colleagues.
    c. Tell me about how you feel your sexuality and gender is portrayed on social media and the apps?
    d. Tell me about how you feel your race is portrayed on social media and the apps?
    e. Can you comment on any class or generational assumptions related to the app use?

2. Tell me about your decisions to joins geo-social network-dating apps.
    a. Which apps have you used?
    b. How long have you used them?
    c. What do you like/dislike about them?
    d. Do you use multiple apps? If so, which ones?
    e. Do you pay for your app use? Why or why not?
    f. What are your favorite features in your apps/across your apps? How do the facilitate and/or prohibit your interactions

3. Tell me specifically about your sexuality and gender in relation to your profile on Tinder/Grindr/Her/Scruff.
    a. What do you have listed as your sexual preferences? Gender preferences? How do you see these being related or not? Are they consistent or do the vary across apps? How so?
    b. What pictures do you have? How did you choose them? Do you have public and private pictures? What determines how you share private pictures?
    c. What information do you have in your bio about your gender/sexuality?
    d. What other considerations went into developing your profile?

4. Tell me how you perceived other people to generally portray themselves on the Tinder/Grindr/Her, etc. in relation to gender and sexuality.
    a. How do you feel about these portrayals?
    b. Tell me your perceptions of how people of different sexualities and genders portray themselves on apps. What are the different "types" of users?
    c. How do people differentiate themselves?
    d. What attracts you to certain profiles?
    e. What deters you from certain profiles?

    f. Have you ever been surprised by a profile? How come? Have you ever been wrong in your assessment of a profile? Can you tell me more about that?

5. Tell me what gender norms or sexual expectations you feel are a part of these online communities.
    a. How are different sexualities and genders accepted, excluded, included, etc. What do you do in relation to these situations?
    b. What are the norms for conversations? How are they related to gender or sexuality?
    c. What are typical expectations you have for what a meet-up will look like? Can you tell me a story about one of your exchanges? Is anyone off limits?
    d. How might a user's sexuality or gender profile set up different norms depending on what your profile is like/what kind of user you are?
    e. Do you think your race plays a role? Your generational cohort?

LEAD TWO: Understand the positive and negative impacts of GSNA's on sexual relationships, and subsequent quality of life.

1. Tell me how you feel the use of this app might change the way people interact with others in day-to-day life.
    a. How might this app facilitate or hinder in person relationships?
    b. Friends? Potential partners? Peers?
    c. Have you ever quit the apps? If so, why? Did you come back? If so, why?
    d.
2. Tell me about how Tinder/Grindr/Her, etc. has impacted your own perceptions/experiences of your sexuality and gender.
    a. What impact has it had on your relationships? Dating?
    b. On intimacy? Sex life?
    c. On sense of self? Belonging? Attractiveness? Etc.

3. Tell me about some experiences using the app that stand out to you.
    a. Positive? Negative? Neutral?

4. Tell me what you feel the overall impact of using Tinder/Grindr/Her, etc. has had on your life in general.
    a. Met partners?
    b. Made friends?
    c. Influenced your self-image?
    d. Changed the way you date in general?
    e. Influenced your attitudes or morals?
    f. Influenced your social behaviours?
    g. Do you feel you spend too much time on the apps or not enough?

LEAD THREE: Describe how public spaces are shaped and reconfigured through the use of GSNA's.

1. Tell me about how you use one of the GSNA's on a daily basis.
    a. What helps determine your use? Setting, location, feeling?
    b. What are some considerations in your use? Safety? Recognition by peers?

2. Tell me about how your location/ public or private setting impacts your use of GSNAs.

3. Tell me about how you might present yourself any differently on Tinder/Grindr/Her, etc. than you do in your daily life.

4. Tell me about a time you met in person with someone from Tinder/Grindr/Her.
    a. Where did you meet? How was it decided?
    b. How was it different or similar to speaking online?
    c. How does a connection on Tinder/Grindr/Her, etc. differ (if it does) from a connection made elsewhere?
    d. How is your communication different (or not) with these connections in comparison to people you connect with in person? (The content you talk about the way you talk to each other)

5. Do you use the apps when you are at a social event and/or bar setting? How?
    a. Do you believe that the apps compliment your interactions in this setting? If so, how? Do you have an example?
    b. Do you believe that the apps impede your interactions in this setting? If so, how? Do you have an example?
6. Does your use of the apps differ when you travel?
    a. Do you use any of the travel features?
    b. Do you use the apps differently when you travel?
    c. Any interesting stories about that?

7. Tell me about a time you saw/recognized someone you knew on Tinder/Grindr/Her, etc without planning to meet up with them.
    a. A friend? Past partner? Colleague?
    b. How did you navigate that? Match with them for fun? Ignore them? Talk about it in person later?
    c. Does the possibility of seeing people you know on Tinder/Grindr/Her impact how you use it?

Study IV – Initial interview guide

Interview question	Guiding probes	Theoretical rationale
How do you use dating apps?	What apps are you currently using?	ICT uses and gratifications
	What apps have you used previously?	
	If you discontinued use of any apps, at what point did you do so, and why?	
	How long have you been using dating apps?	
	How frequently do you use dating apps?	
	Are there any apps you use more or less frequently than others? Why?	
	Why do you use dating apps? What are you expecting to get out of them?	
	Do your expectations or reasons for use differ between apps? How so?	
What has your experience been like using dating apps?	How has using dating apps affected the way you think and feel about your body or appearance? If it has had an effect, why? If not, why not?	General media effects on reflexive embodiment
	Has your experience differed markedly between any apps?	

How do you present yourself on dating apps? What impression are you looking to give other people?	How do you present yourself in your profile picture(s)? What did you show? What did you not show? What type(s) of image(s) did you wish to project? What approach did you take to taking the photo(s)? Choosing among photos? Editing or retouching the photo(s)? Uploading the photo(s)?	Tactics and content of self-presentation
	How do you present yourself in your profile description? What types of statements do you make? Do you adopt a particular style with respect to phrasing, grammar, punctuation?	
	How do you present yourself using pre-set identifiers (e.g., age, weight, height, race/ethnicity, body type, tribe, looking for)? How accurate are your selections?	
	How do you typically present yourself in conversation with other users – what's your conversational approach? What substantive topics do you usually attempt to broach? What style do you employ in terms of phrasing, grammar, punctuation? What approach do you take in terms of the timing or frequency of your messages?	
	Are there any other ways to express yourself through dating apps that haven't been mentioned?	
What motivates you to present yourself in this manner?	What are you aiming to achieve with the way you present yourself? Why do you present yourself this way?	Motives of self-presentation
	How does your presentation style factor into achieving your goals as they relate to dating apps?	
	How does getting along with others factor into your choice in presentation style?	
	How does your presentation style play a part in managing and regulating your emotions?	
	How does your presentation style factor into forming and maintaining your identity or sense of self?	
Why did you choose to present yourself in this way in particular?	What do you consider to be norms of social dating apps as they relate to presentation – how are you expected to present yourself? How do those norms inform your presentational choices?	Determinants of impression construction
	How do other users' values and expectations inform your presentational choices?	
	How does the way you envisage yourself factor into your presentational choices?	
	Imagine your ideal self – how does this differ from your present self? How does this vision of your ideal self factor into your presentational choices?	

	What types of images do you wish not to be? What are you afraid of looking like or being? How does this undesired self factor into your presentational choices?	
	Do you find these factors ever conflict with each other – particularly how you see yourself versus what you feel is expected of you from others? How do you manage these conflicts in your presentation style?	Tactics that deal with self-presentation dilemmas and authenticity
	Do you ever present yourself in a way that is somehow inconsistent with the “real” you? – in other words, do you ever lie? How? Why?	
How does your own presentation on dating apps influence the way you see yourself, particularly with respect to your appearance and body?	How does your presentation affect how you feel about your appearance? For example, how does posting a flattering photo make you feel? If you have ever intentionally posted an unflattering photo, how did that make you feel?	Self-presentational influences on self-concept vis-à-vis self-perception
	What effect does making minor digital enhancements to your photos have on your sense of self? Major enhancements? What about excluding certain features from your photos? What about slightly or majorly fudging numbers or details in your personal bio or description? In essence, how does modifying yourself affect your self-esteem?	
How does the way in which others present themselves on dating apps influence the way you see yourself, particularly with respect to your appearance and body?	How do you feel when you encounter someone whose appearance you think is superior to your own?	Self-presentational influences on self-concept vis-à-vis social comparison
	How do you feel when you encounter someone whose appearance you think is inferior to your own?	
	How often do you find you encounter superior, more attractive others compared to inferior, less attractive others on dating apps? How does this balance compare to in-person interactions? To other social media? If there is a difference, what do you attribute it to?	
	Under what circumstances or with whom are you more likely to make comparisons based on appearance?	
	How often do you find yourself making comparisons on dating apps relative to in-person interaction? To other forms of social media? If there is a difference, what do you attribute it to?	
	Do what degree, on average, do you think other users’ appearances accord with their ‘real selves?’	
	When you make comparisons on social media, what exactly are they in reference to? For example, are you comparing your appearance in your profile to others’ profile appearances? Others’ profiles to your ‘real self?’ Your ‘real self’ to what you imagine are others’ ‘real selves?’	

How do others' comments and feedback on dating apps influence the way you see yourself, particularly with respect to your appearance and body?	What kinds of feedback are you more likely to take seriously or internalize?	Self-presentational influences on self-concept vis-à-vis reflected appraisal
	Whose feedback are you more likely to take seriously or internalize? What personal characteristics are relevant? (Whose opinions matter most to you, and why?)	
	If you had to describe in broad strokes the type and tone of feedback you receive on dating apps, how would you do so? How does this compare to in-person interaction? To other social media? What do you attribute this difference to?	
	Have you been on the receiving end of negative feedback? Under what circumstances does this usually happen? Who are the types of people that make these kinds of comments?	
	How often do you issue negative feedback to others on their appearance online? Have you ever done so? If so, what about the situation or person compelled you to do so? If not, what prevents you from doing so?	
	Why do you suspect some people make rude, negative, or crass comments if the general thrust of these apps is to put your best foot forward and make a positive impression?	
How does the ease of creating a desirable or favourable impression on dating apps compare to other contexts?	Is it any easier to present yourself the way you'd like on dating apps relative to in-person interaction? To other forms of social media? Why?	Influences of CMC on self-presentational deftness and authenticity
	How does the fact that communication is primarily text-based on dating apps help or hinder you in creating your ideal impression?	
How does your motivation to appeal to others through your presentation on dating apps compare to other contexts?	Are you more or less motivated to present yourself in an idealistic way on dating apps relative to in-person interaction? To other forms of social media? Why?	Influences of CMC on impression motivation and determinants of impression construction
	How does your behaviour on dating apps compare to in-person interaction? More/less bold and risky? Aggressive? Polite? What do you attribute this difference to?	
	How do you find others' behaviour on dating apps compares to their in-person behaviour? What do you attribute this difference to?	
Demographic information	How do you identify in terms of sex/gender?	
	How would you describe your sexual identity or orientation?	
	How old are you?	
	How would you describe your racial, ethnic or cultural background?	

Study IV – Final interview guide

- How do you use dating apps?
    - What specific apps are you currently using?
    - What apps have you used previously?
    - If you discontinued use of any apps, at what point did you do so, and why?
    - How long have you been using dating apps?
    - How frequently do you use dating apps?
    - Are there any apps you use more or less frequently than others? Why?
    - Why do you use dating apps? What are you expecting to get out of them?
    - Do your expectations or reasons for use differ between apps? How so?

- What has your experience been like using dating apps?
    - How has using dating apps affected the way you think and feel about your body or appearance? If it has had any affect, why? If not, why not?
    - Has your experience differed markedly between any apps? Why/why not?
    - How would you describe dating apps' impact vis-à-vis other communication technologies, like social media? How do they compare? How do they interact with each other?

- How do you present yourself on dating apps? What impression are you looking to give other people?
    - How do you go about attaining this impression? Walk me through your process of producing a profile picture or series of pictures, from capturing the photo through editing and choosing among alternatives.
    - Are there features of yourself you seek to accentuate in your photos? Are there features you seek to obscure or minimize? How do you go about doing so? Why?
    - What is your approach to profile descriptions and pre-set identifiers, like tribes?
    - What motivates you to present yourself in this manner? What are you aiming to achieve with the way you present yourself?
    - To what degree does this presentation accord with the "real" you? Does yours feel like an honest representation of yourself?
    - What drives you to pursue this level of honesty in your presentation? What prevents you from embellishing yourself further?
    - To what degree do you feel your presentation style is consistent with others on these apps? Are others relatively equally as self-aggrandizing and honest? More? Less? Why?
    - How do you know when someone else is depicting themselves dishonestly? What cues or visual signs do you look for? Do you consider yourself skilled at detecting deception? How did you develop this skill?

- How does the way you present yourself on these apps affect the way you think and feel about yourself, particularly with respect to your body or appearance?
    - How does making these aesthetic enhancements in your pictures affect the way you think about your appearance? When applying a filter, cropping an image to remove your body from frame, etc., how does it affect your bodily self-esteem?

        What do you take away from that experience, or what message does that send to you?
    - If you've ever posted a photo that felt flattering but to some degree inauthentic, how did that make you feel?
    - How does receiving affirming feedback from others in response to your augmented presentation make you feel? In other words, if you've ever posted a picture that you felt was somewhat misleading and received a compliment, how did that make you feel?

- How does the way that others present themselves on these apps affect the way you think and feel about your appearance?
    - In a typical instance in which you encounter someone whose presentation makes them seem attractive, what goes through your mind?
    - What determines whether someone whom you encounter makes for a reasonable target for comparison? Are there certain types of people to whom you're more inclined to compare yourself? Who are you likely to disregard?
    - What about the digital environment on dating apps affects how you make appearance-based comparisons? Do you find yourself doing it more or less often compared to your day-to-day in-person life? Are the inferences that you draw from comparison more or less likely to be self-critical? Why?
    - When you make comparisons on social media, what exactly are they in reference to? For example, are you comparing your appearance in your profile to others' profile appearances? Others' profiles to your 'real self?' Your 'real self' to what you imagine are others' 'real selves?' What implications do you think this has for the degree to which the comparisons you make are "fair" to you?
    - How does being made plainly aware that someone has digitally augmented their presentation influence your inclination to compare yourself to them?
        - Does noticing that someone has clearly used photoshop to cinch their waist rule them out as an appropriate target for comparison, for instance?
        - Where do you draw the line? At what point is someone's presentation so distorted as to make them an inappropriate target for comparison?
    - In what ways do the comparisons you draw with others on dating apps differ from those with individuals on the usual social networking sites, like Facebook or Instagram?
        - How do they differ from comparisons made with various types of microcelebrities or influencers?

- How do others' behaviour, including but not limited to comments and feedback on dating apps, influence the way you think and feel about your appearance?
    - How frequently do you find yourself receiving comments on your appearance in an average conversation on apps versus real life? What do you attribute this difference to?
    - If you had to describe in broad strokes the type and tone of feedback you receive on dating apps, how would you do so? How does this compare to in-person interaction? To other social media? What do you attribute this difference to?

  - How often do you find yourself on the receiving end of negative feedback on these apps? Under what circumstances does this usually happen? Who are the types of people that are likely to make these types of comments?
  - How often do you issue negative feedback to others on their appearance online? Have you ever done so? If so, what about the situation or person compelled you to do so? If not, what prevents you from doing so?
  - Why do you suspect some people make rude, negative, or crass comments if the general thrust of these apps is to put your best foot forward and make a positive impression in order to secure a romantic or sexual partner?
  - How does anonymity factor into one's decision to observe tacit rules of politeness? How do dating apps differ in the degree to which they enable anonymity?
  - How does the abundance of potential partners on dating apps influence how people interface with one another? The fact that these apps enable connection with large, almost endless numbers of people influence the feedback process?
  - What determines how likely you are to take a certain bit of feedback seriously, or internalize it? Are there certain features of the sender – certain individuals whose opinion matters more to you? In a hypothetical scenario where you receive a comment, positive or negative, about your appearance from someone on Grindr versus, say, a close family member, which would greater affect you? Why?

- How would you describe the aggregate of users' self-presentation strategies on these apps? What features, overall, tend to be emphasized, or concealed, or enhanced, and in what direction? What would a composite image of people's self-presentation look like?
  - What message does this composite image send to you? How does it affect the way you view those features?
  - Have you ever received positive feedback in response to a feature of yourself that could be considered stigmatizing? How often does this happen – relative to insults, for instance? How does this make you feel? Are you trusting of this feedback – are you inclined to internalize it? Why or why not?

- Demographic/background information
  - How do you identify in terms of sex/gender?
  - How would you describe your sexual identity or orientation?
  - How old are you?
  - How would you describe your racial, ethnic, or cultural background?

Appendix 4 – Feedback materials

Study II – Feedback letter

University of Waterloo
Date:
I would like to thank you for your participation in this study entitled "Experiences with body image and disordered weight and shape control behaviours among gay and bisexual men who use geosocial networking applications: An interpretive phenomenological study." As a reminder, the purpose of this study is to examine Grindr users' experiences of body image, body satisfaction, and disordered weight and shape control behaviours.

The data collected during interviews will contribute to a better understanding of how the use of Grindr and other gay dating apps is related to body image and disordered weight and shape control behaviours.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE#22698). If you have questions for the Committee contact the Chief Ethics Officer, Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

Please remember that any data pertaining to you as an individual participant will be kept confidential. Once all the data are collected and analyzed for this project, I plan on sharing this information with the research community through seminars, conferences, presentations, and journal articles. If you are interested in receiving more information regarding the results of this study, or would like a summary of the results, please provide your email address, and when the study is completed, anticipated by December 2018, I will send you the information. In the meantime, if you have any questions about the study, please do not hesitate to contact me by email as noted below.

Eric Filice, BSc, PhD Candidate
University of Waterloo
School of Public Health and Health Systems
efilice@uwaterloo.ca

Study III – Feedback letter

Department Letterhead
University of Waterloo

Date

Dear **(Insert Name of Participant),**

I would like to thank you for your participation in this study entitled "XXXXXXXXXXXXXXXXXXXXXXXXX". The main purpose of this study is to understand the impact and implications for gender roles and sexual social practices for adults who use geo-social networking applications (GSNAs). Your experiences and motivations for using this type of app will help to better understand the role these apps play socially, and in the gender, power, and social dynamics of the their users.

We anticipate that this information will assist in understanding the positive and negative impacts of GSNAs on sexual relationships, and subsequent quality of life.

Please remember that any data pertaining to you as an individual participant will be kept confidential. Once all the data are collected and analyzed for this project, we plan on sharing this information with the research community through seminars, conferences, presentations, and journal articles. If you are interested in receiving more information regarding the results of this study, or would like a summary of the results, please provideyour email address, and when the study is completed we will send you the information.We expect that this study will be complete by August 2019. In the meantime, if you have any questions about the study, please do not hesitate to contact us by email or telephone as noted below. This project has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee. Should you have any comments or concerns resulting from your participation in this study, please contact Dr. Maureen Nummelin, Director, Office of Research Ethics at 519-888-4567, Ext., 36005 or maureen.nummelin@uwaterloo.ca.

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Study IV – Feedback letter

University of Waterloo
Date
Dear **(Insert Name of Participant),**

I would like to thank you for your participation in this study entitled “Digital looking glass or funhouse mirror?: Self-presentation on location-based real-time dating apps and reflexive embodiment in men seeking men” As a reminder, the purpose of this study is to better understand how self-presentation behaviour on dating apps influences users’ body image.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE#41053). If you have questions for the Committee contact the Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions contact Eric Filice at efilice@uwaterloo.ca.

Please remember that any data pertaining to you as an individual participant will be kept confidential. Once all the data are collected and analyzed for this project, I plan on sharing this information with the research community through seminars, conferences, presentations, and journal articles. If you are interested in receiving more information regarding the results of this study, or would like a summary of the results, please provide your email address, and when the study is completed, anticipated by April 2021, I will send you the information. In the meantime, if you have any questions about the study, please do not hesitate to contact me by email as noted below.

Best regards,

Eric Filice
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