

School of Media, Culture and Creative Arts

Unruly Bodies: Monstrous Readings of Biotechnology

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Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgement has been made. This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

Warning: Some of the images contained within this theses may be considered graphic: horror-violence themes.

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There are many people over this journey who have given me the space, time and support I needed to complete this immense undertaking.

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Abstract

In this thesis, I propose the popular culture figure of the zombie as a potent and pertinent metaphor that enables us to examine and understand the complex issues we are confronted with when talking about the body in Biology, from within a cultural position. It may assist us in providing a more comprehensive framework that allows for more inclusive readings of the body, its connections and multi-layered classifications.

Biotechnology, as one of the most predominant technologies of contemporary life, presents not only promises of positive change but also problematic issues of ethics, knowledge production and reductionism, as our bodies are so subject to the readings it offers. These issues are becoming increasingly difficult to unpack as biotechnologies become more complex *and* commonplace as bodies are read more habitually through the lens of biotechnology. While metaphors such as the cyborg and alien have been applied to biotechnological entities and practices, the zombie provides a more useful metaphor through its contemporary positioning *within* in a biotechnological context. This makes it potentially more productive in considering alternate readings and for unpacking complex issues and concerns.

This thesis firstly establishes a foundational set of concepts relating to the monster and biotechnology. A zombie paradigm of traits and characteristics are then extrapolated through popular culture films utilising these concepts. When combined, these concepts and traits form a productive metaphor for the zombie figure which can be applied to biotechnological entities and encounters. The zombie metaphor is then tested through the application of it to the story of the HeLa cell line (a biological tool contaminated with the social story of its donor Henrietta Lacks) and *The Anarchy Cell Line* (2003) (a creative project using the HeLa cell line and my own blood). I will show, through these applications, how the zombie metaphor helps to unpack complex issues around a range of issues such as life and death and how it may undo staunch binary classifications, allowing a more inclusive reading of those who might be subject to Biology as a system of knowledge.

Table of Contents

Declaration.....	1
Acknowledgments.....	3
Abstract.....	5
Table of Contents.....	7
Table of Figures.....	9
Table of Abbreviations.....	11
Introduction.....	13
Part One The Beginning: Science and Social Narratives.....	25
Chapter One The Anarchy Cell Line and BioArt.....	29
Chapter Two Henrietta and the HeLa cell Line.....	53
Chapter Three The Hybrid, The Metaphor and The Monster.....	75
Part Two The Zombie: Cultural Narratives.....	105
Chapter Four From the <i>Zombi</i> to the <i>Zombie</i>	109
Chapter Five The Zombie: Romero's Paradigm.....	133
Chapter Six Shifts in the Paradigm.....	163
Part Three The Zombie Metaphor: Applications.....	195
Chapter Seven Zombie Characteristics: Living-Dead.....	199
Chapter Eight Zombie Characteristics: Human-Nonhuman.....	229
Chapter Nine Zombie HeLa.....	251
Conclusions Zombie Metaphor: Revelations.....	283
Bibliography.....	291
Appendix A: Image Permissions.....	315

Table of Figures

- Page 33 Fig. 1. *The Welcome Guest*, detail installation, size variable, Patricia Piccinini 2011 (Piccinini, 2011)
- Page 46 Fig's. 2 & 3. *The Anarchy Cell Line*, Video still (Verspaget, 2003)
- Page 48 Fig. 4. *The Anarchy Cell Line*, Detail slide dish (Verspaget, 2003)
- Page 58 Fig. 5. Henrietta and husband David Lacks, circa 1945 (Henrietta-David-Lacks, n.d)
- Page 82 Fig. 6. *Cyborg*, Lynn Randolph 1995 (Randolph, 1989)
- Page 82 Fig. 7. *Transfusions*, Lynn Randolph 1995 (Randolph, 1995)
- Page 85 Fig. 8. *Cat's Cradle/String Theory*, ©Baila Goldenthal 2008 (Goldenthal, 2008)
- Page 88 Fig. 9. *Three monsters*, De Monstrorum Natura, Caussis, et Differentis Artist unknown, 1634 (Natura, 1577-1657)
- Page 122 Fig. 10. *Night of the Living Dead*, clip: as it appears in Booth's critical paper on Davis' research. (Booth, 1988)
- Page 123 Fig. 11. Image (2012) by Gilliland in his article "The science of zombies (well, sort of)" as it appeared in the Science news feature of CosmOnline. (Gilliland, 2012)
- Page 140 Fig. 12. *Warm Bodies*, internet meme (Meme, n.d)
- Page 165 Fig. 13. *BRAAAAINS 2012!*, Think Geek Poster (BRAAAAINS, 2012)
- Page 166 Fig. 14. *The Simpsons*, Dial 'Z' for Zombies, Animation Still: 'Zombies looking for Homer's brains' (Baeza, 1992)
- Page 170 Fig. 15. *Zombieland*, Film Still: 'Rule #2 Double Tap' (Fleischer, 2009)
- Page 171 Fig. 16. *Zombieland*, Film Still: 'Zombie Kill of the week' (Fleischer, 2009)
- Page 181 Fig. 17. *Shaun of the Dead*, Film Still: 'Horde' (Wright, 2004)
- Page 186 Fig. 18. *The Walking Dead*, Film Still: 'CDC Explosion' (Darabont, 2010)
- Page 189 Fig. 19. *Resident Evil*, Film Still: 'Zombie Scientist' (Anderson, 2002)
- Page 210 Fig. 20. *The Body of the Dead Christ in the Tomb*, Hans Holbein the Younger (Holbein, 1521)
- Page 211 Fig. 21. Memorial photograph by Alice M. Boughton - the woman on the left is deceased (Boughton, 2010 [1910])
- Page 214 Fig. 22. *Creepshow*, Film Still: 'Zombie rising from the grave' (Romero, 1982)
- Page 221 Fig. 23 *Return of the Living Dead*, Film Still: 'Rotting Zombie' (O'Bannon, 1985)
- Page 225 Fig. 24. *Night of the Living Dead*, Film Still: 'Young girl' (Romero, 1968)
- Page 226 Fig. 25. *Day of the Dead*, Film Still: 'Zombies Feeding' (Romero, 1985)
- Page 234 Fig. 26. *Resident Evil: Extinction*, Film Still: 'Zombie Horde' (Mulcahy, 2007)
- Page 241 Fig. 27. *Resident Evil*, Film Still: 'Sterile Hood' (Anderson, 2002)
- Page 243 Fig. 28. *Day of the Dead*, Film Still: 'Bub' (Romero, 1985)
- Page 243 Fig. 29. *Land of the Dead*, Film Still: 'Big Daddy' (Romero, 2005)
- Page 244 Fig. 30. *Shaun of the Dead*, Film Still: 'Cricket Bat Weapon' (Wright, 2004)
- Page 245 Fig. 31. *Resident Evil: Extinction*, Film Still: 'Ruined Lab' (Mulcahy, 2007)
- Page 245 Fig. 32. *Resident Evil*, Film Still: 'Zombie Scientist' (Anderson, 2002)
- Page 279 Fig's. 33 & 34. *The Anarchy Cell Line*, Whole blood shown in dish with HeLa cells (Verspaget, 2003)

Table of Abbreviations

Dawn – Dawn of the Living Dead

DOTD – Day of the Living Dead

LOTD – Land of the Dead

NOTLD – Night of the Living Dead

ResE – Resident Evil

ROTLD – Return of the Living Dead

R-zombies – Romero's zombies

SOTD – Shaun of the Dead

TAnCL – The Anarchy Cell Line

TWD – The Walking Dead

VHP – The Visible Human Project

Seven Theses – Monster Culture (Seven Theses)

Introduction

Outline

I am an artist who is best known for my work within the field of BioArt. I have worked on projects relating to the ownership of biological matter through the project titled *The Anarchy Cell Line* (2003), and on the injection of the self and the social into scientific practices in the project titles *IncuBra* (2007). This thesis is a theoretical extension of questions raised during a segment of that artistic practice in 2003 and focuses on its resulting exploration of the zombie as a central metaphorical ‘workhorse’ of creative and biotechnological entities, such as the cell line (specifically the HeLa cell line).

At that time, I wondered why stories of monsters, in particular the zombie, were infiltrating the lab amongst me and my creative peers. In this thesis, I examine the zombie’s defining characteristics and position it as a metaphor. I apply this metaphor to the main laboratory workhorse I was exposed to in 2003 during a BioArt residency — the HeLa cell line — to see what it reveals about the relationship between humans and biotechnology. This thesis examines the potential of the zombie to be a useful metaphor with which to unpack complex issues surrounding the body within the context of Biology and how the taxonomies that are applied to it (how the body is ‘ordered’) are revealed through biotechnology. The zombie shares many characteristics with biological workhorses (a term given to the things science experiments upon recurrently), and reveals complex combinations of classifications rather than pure distinctions within science.

As a first port of call in my introduction, I locate where this interest originated within my own history, and ultimately how the research question of “What does the popular culture figure of the zombie reveal about our relationship with biotechnology” revealed itself.

Origins

In 2003 I undertook an artist in residence position at SymbioticA at The University of Western Australia in the Department of Human Anatomy and Biology during which I had started to explore the HeLa cell line. My explorations into the HeLa cell line spawned the artistic project *The Anarchy Cell Line (TAnCL)* that featured a combination – cohabitation – collaboration of my cells (as whole blood) and the cells of the HeLa cell line.

As will be discussed later in the thesis, the HeLa cell line is a ‘cell stock’ used in science (biological research in particular) because of its ‘immortal’ status and its virulence in the petri dish; it’s easy to grow and it grows perpetually in the right conditions. The HeLa cell line is probably one of the most (in)famous cell lines in scientific history. It has become one of the most widely used in biological history: the mass now purportedly measuring in the tons. It was instrumental in the polio vaccination and other key experiments and its infamy results from its association as an infectious cell line that ‘crossed the dish’ into other lines altering them. Taken from an African American woman in the 1950s by the name of Henrietta Lacks, without her consent, the HeLa cell line spawned a lucrative commercial venture (though it was only recently that Henrietta’s previously unmarked grave has been given a tombstone.)

As an artist who already worked primarily with technology, it came as no surprise to me that the SymbioticA laboratory I worked in with other artists was filled with interesting, mixed subject conversations which often included an element of ‘fringe technology’ and popular culture. Hybrid practices are never without hybrid conversations. However, I began to notice that these conversations we were having were specifically (and recurrently) about the zombie. I hadn’t yet connected why the conversation was prevalent during the tension filled moments of working socially with living material in a lab-science context but I had recognised there was a significance

particular to this context. Zombies, at this point, had become for me a highly seductive subject of conversation in the lab, which seemed peculiar.

It wasn't until I started to think and write about BioArt in my Honours Dissertation that I realised that something fascinating was happening with regards to this unique monster and its (almost always) biotech inspired storyline. I hadn't time at that stage to really resolve what was happening with this zombie obsession but I flagged it for later research. Initially I intended my PhD research to be a continuation of my BioArt work/creative practice, but issues of discourse underpinning my practice had become too large and problematic. I found that it was difficult to resolve creative practices within the sciences when there was an inadequate foundation for theoretical interrogation of the complex issues I was encountering during these projects.

The importance of the connections of my practice, tissues and the monster began to reveal itself throughout the formation of my PhD candidacy when I had realised that the figure of the zombie had demonstrated some significant associations with the living tissues I had worked with as an artist in the laboratory. It was my position as a creative humanities researcher embedded in a scientific environment that ultimately enabled me to identify and reflect upon these connections between bio-matter (often referred to in terms of slavery such as 'lab workhorses') and the zombie. These issues provoked questions between the body and the social, and how social connections are denied *and* enforced as an ongoing tension through the construction of binary distinctions within scientific knowledge. I had realised that this was what I needed to explore before continuing my creative research as it would ultimately enable a more useful tool for reading biological (and BioArt) entities.

Structure

I have structured this thesis into three parts within which a number of chapters are located. Because I utilise foundational material that will be explained and developed in order for me to achieve my task, the three parts are helpful for positioning of the discourse within the thesis. It is also important to note that while there were a number of ways of structuring this thesis because of its extremely interwoven elements ('cloud' or lateral mind-mapping structuring would have been ideal) I ended up choosing to talk about the aspects contained within, in a chronological manner. For

practical reasons, this seemed the most appropriate way of presenting a thesis based on the revelations of a premise through personal experiences for evaluation. The structure therefore recounts the events of discovery as they happened \ from my early recollection of the origins of the premise, through to the chronicles of my research on the thesis question. The three parts respectively deal with the beginnings and participants that spawned the research questions, the zombie as an interesting monster, and then the application of the zombie metaphor, the HeLa cell line, and *TAnCL*.

Each section has a 'section synopsis' which positions the general segments pertaining to science, narratives, cultural narratives and applications of the zombie metaphor within the whole thesis. The part synopsis indicate how these segments approach the work in different ways.

In **part one** "The Beginning: Science and Social Narratives", I focus on science narratives regarding lab work (both creative and scientific), cell lines and science theory. I specifically discuss my experiences of the lab and my interaction with it's the occupants including the living tissue during my residency. These led to my reflections and the foundation of this thesis on the zombie and the HeLa cell line. In chapter one, I discuss my creative project *TAnCL* from personal experiences during the project. In chapter two, I recall the story of the HeLa cell line using the available sources on Henrietta's life and her cells, interjected with some of my reactions to these accounts. In chapter three, I cover some of the concepts relating to various theories and concepts that will be useful as foundations during parts two and especially part three. These areas include aspects in science and technology studies (STS) and feminist science studies (FSS) such as the hybrid and the tensions that exist within the scientific system of knowing and ordering, the use and the value of the metaphor within STS, FSS and science itself, and finally a recounting and discussion on classical teratology (the study of abnormalities – 'the monstrous' – within scientific history) and a development of the cultural theory study of popular culture monsters in what I term 'a modern teratology' (because of its potential usefulness within a reading of scientific methodology)

Part two "The Zombie: Cultural Narratives", focuses on cultural narratives surrounding the zombie figure such as in film, history and culture. Part two specifically maps

the zombie's origins from its roots within Vodoun lore to the appropriation of it into popular culture. I then introduce its contemporary form as the popular culture zombie figure, establishing a paradigm from which to work from in the remainder of the thesis. In chapter four I detail more specifically, the zombie in relation to its history from Vodoun religious entity to its popular culture mutation. Chapter five includes an examination of what I have come to consider the zombie paradigm, as it was established through the popular culture film examples of George A. Romero. In chapter six, I examine the popular culture film treatments of the zombie paradigm as it shifts, creating new possibilities for the zombie figure.

Part three "The Zombie Metaphor: Applications", focuses on the application of the zombie metaphor by reading science narratives through zombie narratives and metaphors. In chapter seven, I identify defining characteristics of the zombie which become the foundation of a set of discursive points for its use as a metaphor. In chapter eight, I apply the zombie metaphor to the HeLa cell line, identifying the parallels and some preliminary results of the application. Chapter eight also includes some notes on the correlations between *TAnCL* and the zombie. Chapter nine concludes the findings of the application of the zombie metaphor revealing aspects of our relationship with biotechnology. I also conclude what the zombie of metaphor might do for future research and interrogation of other such lab entities for the purpose of unpacking, addressing and potentially extending 'scientific thinking'.

Significance

The significance of this research is multifaceted.

For humanities researchers, it explores the need for a foundational discourse on examining, understanding, exploring and interrogating living tissue in joint humanities-science contexts and as 'tools of Biology' is proposed. During my own lab experiences, I found that a foundational language with which to consider, express and discuss concerns and concepts in science, was missing. There are very few ways of talking about and reflecting upon the issues in the sciences that are revealed through humanities (and scientific) practitioners. This thesis explores the possibilities for a

new discursive language enabling researchers to interrogate and introduce more inclusive combinations of inquiry into science and the living entities it uses to help construct and establish scientific knowledges. It offers a way through complex issues surrounding scientific discourse as it presents itself to multi/cross-disciplinary researchers. Such work may also (albeit idealistically) undo and refigure systems of knowledge or at least subject scientific (particularly biological) knowledge to interrogation so that the social might be included in its readings of the body.

In science, it is difficult to include layers of understanding that contain social and cultural networks to the objects of study. We know through work already done by Donna Haraway, Lisa Weasel, and Hannah Landecker that these layers exist. Science, however, requires the object of analysis to be stripped down to its parts in order to study it (Weasel, 1997, p. 52). We also know that any materials used in science are not without a history and connections to the social. Useful and relevant metaphors are needed *within* the sciences too that call for a more deeply considered set of traits, connections and inclusions so that the body is understood within a complex network of selfhood, culture and beyond. While science does not employ the use of metaphors for this purpose *within* science to its *practitioners*, it does so for science communication to the masses in very reduced or specific ways, resulting in a ‘flattened concept’ (Marks, 2011, p. 216) of the relating biological subject being discussed. This can be seen, for example, in the story of the HeLa cells from within the sciences when the cells are described as “a monster among the pyrex” (Landecker, 1997, p. 12). One descriptor, a very powerful one, is used here in a limited way offering a limited view of the cells as separated and othered. A more complex and multi-layered metaphor is needed to allow a more complex reading of the objects of study from *within* the sciences too so that more inclusive understandings of bodies might be adopted to encourage the study of bodies as people (which includes a linking of mind and body as a more intact and comprehensive subject), within a culture.

Pertinent Information

The inclusion of The Anarchy Cell Line

In my explorations and examinations of the concepts in my research, I include personal reflections and reminders at various points on *TAnCL* project. *TAnCL* is an

enactment of the concepts proposed herein, albeit applied retrospectively. *TAnCL* additionally acts as a useful bridge between the lab and the reflections because of its positioning as a result of the complex interactions between humanities and science practitioner/agents. While I do not employ the project at great length, it is included in a somewhat significant enough manner that it is worthy of a comment on its use. It is both a bridge between bio-matter and social-matter *and* is a tool with which I can extend to the cell line beyond biological interrogation; *TAnCL* is used to shift HeLa from lab tool to *humanities-science* entity.

Science and science, Biology and biology and Binary Distinctions

Often I refer to 'Biology' and 'Science' as a systems of knowledge and 'biology' and 'science' as a general term (science and biology of). While there are some clear assignments of this usage there are also crossover uses as well where both Biology and biology are in reference. These are (necessarily) not always clearly assigned to allow for the indication these crossovers.

Likewise, there are two uses implied for binary distinctions and their amalgamation that are utilised throughout this research. Self/other, human/nonhuman, mind/body and living/dead all denote references to the use of them as binary distinctions and categories. Self-other, human-nonhuman, mind-body and living-dead all denote references to where these boundaries are blurred and the categories are not delineated.

A Note on 'The Lab'

While it is assumed that the nuts and bolts of a foundational set of concepts that support this particular thesis' premise begins *outside* of the lab, I want to briefly make a case for the laboratory as site where this crossover actually *begins*. The laboratory as a site for layered discourse, some of which is refreshingly disruptive to the staunch position of reading bodies as circumscribed by borders.

The laboratory as *the site* of tissue culture is revealed and used in my research an active, yet flawed, attempt to confine and reinforce categories of distinctions - a method of exclusion as to who and what is included in 'cultures'. 'Cultures', in and

of itself a term of classification, interestingly resonates with the use of the word ‘culture’ in science to describe the growing of cells. The laboratory is a space within which acts of science are carried out. However, the actors/participants (including us, as the audience-participants-consumers of science) are in themselves inconsistent as representatives of the dualistic rituals and tenets of science. All kinds of bodies, entities and configurations inhabit the lab and are indeed produced, created, and made too – not only materially (as petri dish creations) but also in categorisation. Tissue culture, genetic manipulation and viral studies to name a few examples, implicate the lab as ‘site for science’ that is all about hybrid multiple (rather than binary) entities. This is not to emphasize a focus on ‘creation’, but rather to highlight the complexity of the lab as *site for dualisms inhabited by and directed at pluralisms* as it sits within other texts, contexts and actions simultaneously: to abbreviate, ‘laboratory life’ is messy and not reducible.¹ The lab is a place of importance for me within the context of this thesis *because of these inhabitants*. It is *these* entities that this research deals with. Haraway (2004) remarks on the subject of the laboratory:

The laboratory repeatedly figures as an uncanny place, where entities that do not fit, do not belong, cannot be normal – that transgress previously important categories – come into being. (p.275)

The Zombie

Establishing the utility of the zombie as metaphor required significant research into its origins, history and various cultural manifestations/representations. I have interleaved the zombie sections with observations, notes and stories of Biology, allowing for a kind of full circle reflection.

I mainly utilise film examples of the zombie in my analysis of this particular monster. This is because of its prevalence within the zombie genre and its plentiful collection of manifestations of the zombies’ characteristics. It is not my intention to provide a film studies analysis of the merits of screen examples of the zombie, but rather to use a handful of key films to reveal a pattern that has come to represent a paradigm

¹ Referring to Latour and Woolgar’s (1986 [1979]) book *Laboratory Life* as a study of, and from within, the sciences.

within the zombie genre. Film representations of the zombie are the most prevalent format in communicating its traits to a broader community. Film then, provides a good overview of the zombie in popular culture that enables a list of exemplified traits to be accumulated for use in chapter seven and eight. Additionally the particular films from within the genre that I have selected (as the catalogue of films within the zombie genre is exhaustive) identify the popular culture perspective of the context I am discussing, *that of biotechnology* in particular. As I primarily seek out *connections* between the zombie paradigm in popular culture film in particular and the body, materiality and biotechnology I principally utilise a specific selection of films particular to these subjects.

Foundations

The foundational material I have included particularly in chapter three, are comprised of introductory notes, and pertinent perspectives of useful concepts as they relate to the thesis's underlying subject matter. This includes concepts and theories such as monster theory, metaphors in science, the hybrid, science and technology perspectives and more. The content in the foundational concepts chapter is an overview of these areas providing reminders of, or an introductions to their significance. I would have enjoyed including concepts and theories relating to the zombie in Biology in particular. However, the subject of the zombie in a biotechnological context has not yet been discussed in a significant enough way to locate any major and directly relatable existing research. Theories, and connections to theories, on zombies are generally very limited, and where they do exist, they generally refer to philosophy, consumerism and slavery. This is changing as their popularity amongst researchers expands, however not quickly enough in time for this thesis. I therefore mainly use in my foundational concepts chapter (chapter three) work that underpins science, Biology and monster theory, setting up a solid foundation to allow for the potential establishment of concepts and theories of the zombie related to biotechnology and Biology.

HeLa and Henrietta

Accounts of Henrietta Lacks's life, and the cell line established from her body, are *very* limited. On the life of Henrietta Lacks, only one *extensive* account currently exists

written by Rebecca Skloot (2010) titled *The Immortal Life of Henrietta Lacks*. Michael Gold (1986) has written extensively about the history of the HeLa cells in particular in his book called *A Conspiracy of Cells: One Woman's Immortal Legacy and the Medical Scandal it Caused* and this is also utilised in this thesis. Other documents read on the subject are sourced from that same, or from small and general, media reports. While I draw from these other sources and where possible Gold's book, the primary source for my investigations into Henrietta's private life remain Skloot. It is, however, read through the eyes of one person, Rebecca Skloot. I substantially depend on details from her in my accounts of Henrietta's life and some accounts of the moments preceding the procurement of her cells. The other minor media accounts have limitations also in that the material they provide is in minor 'snippets' and rarely with due consideration to the greater context that includes Henrietta's life. The 1997 documentary *The Way of All Flesh* by Adam Curtis (1997) predates Skloot's book and does provide some information on the life of Henrietta and the HeLa cells, but also shares parallels with Michael Gold's 1986 book which predates Curtis's documentary. All of these sources assist in solidifying and informing my account of Henrietta and HeLa stories but does not provide new information. As such, Skloot's and Gold's books are utilised as primary sources of information on Henrietta Lacks and the HeLa cells in this thesis.

The scientific accounts of the HeLa cell are sourced from a wider pool including journal articles and a dissertation (Hannah Landecker's (1997) work which focuses on the cultural theory implications of the HeLa story) however again this is still limited. These areas of inclusion nevertheless are still useful in the context of interrogating scientific and biological practices and materials as they both tell the available story of Henrietta and her cells and also act as a demonstration of the issues surrounding the story telling in science – while Henrietta's story exists, this is a relatively new development in the HeLa history.

Postscripts

Finally, dotted throughout are experiential and reflective excerpts from my time in the lab. These are important reflections on the more emotional connections I have made. They are important because they exemplify the complexity of bio-matter and how it is deeply entrenched in social *experiences* as well as the stories that surround

them. Rather than a distanced reading of biotechnology and biological entities or a reading of the zombie from 'outside' this research is a deeply connective, interwoven, personal *and* intellectual discussion. The postscripts are there to exemplify this 'cat's cradle' (à la Haraway) of interconnectedness.

Part One

The Beginning: Science and Social Narratives

Chapter One: The Anarchy Cell Line

Chapter Two: The HeLa cell Line

Chapter Three: Foundations: the hybrid, the metaphor and the monster

A mass of diminutive vials! They looked like little vases that belonged in a doll house – the things of toys, play and fantasy. But it was serious. Now common (as varieties of ‘easy’ or ‘difficult’ ‘stock’), these cells, cold — nondescript, were countless in number, unfathomable in mass, ready to be recalled into duty. ...kept inside these tiny vases, inside a freezer, inside a room, within a lab with limited access — like matryoshka dolls, their complicated story was nested and veiled.

Postscript notes on The Anarchy Cell Line residency.

Synopsis

Part one maps the origins of the questions I have proposed for this research. It provides an overview of the BioArt project called *TAnCL* I created during an artists in residency term, and background on the 'HeLa' cell line used in the project, which relates to the broader topics in this thesis. Both *TAnCL* and the HeLa cells inspired questions about biological entities in a quest to find more productive and inclusive ways of reading them beyond the reductive options that science offered. In the course of interrogating my BioArt practice, it became clear that the questions I was asking needed new types of languages and metaphors to think through the complex matters I was confronted with in the lab. Part one includes a chapter on such foundational concepts which provides the framework for these new languages and metaphors. These concepts also provide a lens with which to consider the various issues, observations and uses of the zombie.

Part one explores the two 'stories' (and entities) of *TAnCL* and the HeLa cell line which form the basis for positioning the usefulness of metaphors and the figure of the zombie for exploring biotechnological-human relationships in part three

Approach

Chapter one, *TAnCL*, is written in a personal manner as it is my particular account of the project's inception and production. The value of such work is deeply entrenched in the experiences of the project as much as it is in the content of the artwork itself. Chapter two, on Henrietta Lacks and the HeLa cell line, recounts how her cells ended up being one of Biology's most famous and infamous workhorses of science. My desire was to include more of Henrietta as a woman in order to reinforce the sense of humanity that her inclusion gives into what is ordinarily reduced to an almost gratuitous conversation about her cells. The chapter on her and her cells as such interjects, I hope noticeably, with moments of her life in an attempt to reconnect the social to the scientific.

While the first two chapters provide 'origin' stories for later application, and are as stated more personal stories to situate my work, the third chapter moves on to examine the foundational concepts and stories I needed to examine in order to provide a foundation for the procession of this research.

Chapter One

The Anarchy Cell Line and BioArt

This chapter maps my experiences of my creative project *TAnCL* in 2003. It covers the events and observations that led to the questions raised and concepts proposed in this thesis. As such, this chapter explores the origins of those questions and is the most appropriate point to start from. This chapter not only talks about the project but also introduces the practice of BioArt and interdisciplinary research as a foundation for my overall approach.

Primer

In 2003 after a visit to an Art and Science practice laboratory called SymbioticA located at The University of Western Australia, I found myself with some profound questions about some equally profound experiences. This visit led to extended work in the artistic field of BioArt on the project – *TAnCL*. My experience with the formulation and completion of the creative project shapes the main substance of this chapter.

As a student of fine art practice with an interest in creativity utilising technology, specifically digital and medical technologies, I was eager to find out what SymbioticA practiced, how they practiced it and how this related to both the areas of the arts and the sciences. Words like 'BioArt' and 'interdisciplinary studies' were permeating discussions about SymbioticA and I was very interested in finding out more. As I had

previously worked with medical imagery in many of my earlier works (I had come into my studies already as an early career arts practitioner) and was working until my late study years in a very intuitive manner, the information that both study and access to such a laboratory afforded me was very appealing. This kind of work as it crosses over between science and the humanities is considered to be ‘interdisciplinary’ research. I found this way of working exciting and interesting as it extended my commentary on science from a position of being outside of it to understanding some areas of practice and construction from within it. While the focus of this chapter is not entirely on interdisciplinary studies or BioArt, some explanation of these terms will follow this introduction to underpin an understanding of the context in which this project begins.

I will then introduce the SymbiotocA fieldtrip and the eventuation of the project *TAnCL*, and how I came to produce (or indeed collaborate) with it, how it was that I even found myself being confronted with some of the questions which lead to it, and finally why this project is so important in the context of this thesis. To explore the project’s journey, I first summarise the setting for the project to establish some of the key contexts that informed the work. Further to the setting for *TAnCL*, I discuss scientific and interdisciplinary studies briefly, as this is the mode by which these projects begin to reveal fundamental connections between process and person/maker, science and humanities readings and interdisciplinary study/practice. Interdisciplinary methodologies often reveal complex structures like knowledge production and object-subject study.² I also reveal the discussions that took place with scientists and artists that first raised the issues that formed the project’s inception. I then go on to discuss the project, its processes, its outcomes and finally my findings – which are not like the scientific use of the word ‘findings’ as answers but rather, findings as questions implicating complex issues in how we understand biotechnology as a process which informs who and what we are.

² For example Donna Haraway in *How Like a Leaf* (2000, p. 166) discusses complex interdisciplinary encounters of students creating new languages from different positions and likewise of the complexity of connections in tandem with the observation of dualisms in Biology.

Interdisciplinary Studies

While I eventually went on to undertake a residency at SymbioticA it was the student excursion that first exposed me to the practices of interdisciplinary artists and scientists, and to the complex issues of scientific knowledge production. At first I considered SymbioticA to be a place of *combined* practices of artistic and scientific processes heralded by the much used term of 'interdisciplinary studies'. I have since come to understand that the concept of interdisciplinary studies is very complex. When it comes to scientific practices that are approached from other fields, I recognised that I was in fact experiencing artistic methodology *visiting* scientific culture; a kind of anthropological immersion in science culture from an artistic locale. Interdisciplinary studies is a term I have never really been comfortable with because the term essentially proposes in this case that one formally practices both science and art, and understands formal knowledge in both fields. Even though one could argue this as conjecture, the implication that both fields are *formally* understood by such a practitioner is still very powerful and as such it reveals the complexity and potential readings of practicing under such a term. While I still strongly believe that these practices (art and science) have many similar methodological approaches, an artist is not necessarily a scientist and a scientist is not necessarily an artist just because one immerses oneself in the other's space or practices. I like to think of these kinds of spaces as on-site experimental anthropological labs more than 'interdisciplinary' sites with formally integrated knowledge in action.

Like Jonas Salk indicates in Bruno Latour and Steve Woolgar's seminal work *Laboratory Life: The construction of Scientific Facts* (Salk, 1986, p. 13), such activities and their resulting discourses can act as a bridge rather than a replacement for how to think through scientific knowledge. While Salk does indicate that 'bridge' is too simple a term because these two cultures (science and humanities) are more intertwined than the word 'bridge' implicates, I too find it a useful term. I see this practice of art using science as a conduit rather than a *replacement* knowledge system for positioning artists working in science in a more productive and dynamic way. It may very well be more

akin to a kind of methodological enactment which helps to make meaningful connections to sometimes disparate, and sometimes parallel, concepts that arise from the production of knowledge in the sciences and society at large that are produced in situ.

BioArt

The practice of working with and from within the biological sciences in particular from an artistic position has come to be known as 'BioArt'. Definitions of it are limiting and in my experience these definitions have not adequately included the full extent nor the reality of the practice. I present for this reason some current definitions of BioArt and expand them to propose a more representative one.

BioArt has been described as an artistic practice which uses biological materials in its production (Holmes, 2011). Kevin Holmes (2011) in "Creativity Bytes: A Brief Guide To Bio-art" describes it as a "living experiment" and such advocates imply that all BioArt is, or must be, alive (Dixon, 2008; Zaretsky, 2005). A published paper by Oron Catts on the subject of the objects practiced upon in BioArt hypothesised that living tissue might be re-categorised as 'semi-living' creating a new category to accommodate its ambiguous position. With these various definitions gaining momentum as the practice becomes more commonplace, the process of defining BioArt is revealing that it is in itself reductive. This parallels the processes of science in which valuable contributions and questions may be excluded through objectification of the 'others' that might defy easy definition and categorisation. In this respect, defining BioArt, redefining the complex subjects it implicates into 'objects', may become detrimental to the nature of creative work which is ultimately *not to close off explorations*, but rather *to open them up* by proposing *new* questions. If such definitions are to be undertaken as a practice of categorisation, various works and trends that can be claimed as BioArt and their important contributions to the discourse of culture, society and biotechnology, may be regrettably excluded.

The artwork *The Welcome Guest* by Patricia Piccinini (2011) is unable to be reproduced here due to potential copyright restrictions.
The Welcome Guest can instead be accessed via http://www.patriciapiccinini.net/newwork/shows/10The_Welcome_Guest_2011/lores/40IMG_9667.jpg

Fig. 1. *The Welcome Guest*, detail installation, size variable, Patricia Piccinini 2011 (Piccinini, 2011)

An extended definition of BioArt might allow for a wider breadth of discourse on biotechnology. Patricia Piccinini's work (above) for example includes a strong *commentary* of the issues surrounding hybrid creatures, natureculture, genomics and biological taxonomies – underpinning discourse on the kind of work done with living systems rather than using the living systems themselves. A new approach to BioArt that I propose for the benefit of the discussions to come would be to consider it as an artistic movement that may include living systems and materials, and/or the technologies and imagery associated with biology, living systems and science in order to produce artistic work that provides a dialogue for commentary on the related technologies, ethics and knowledges associated with Biology. It is important that this kind of work opens up many more possibilities for understanding our relationship with biotechnology.

The SymbioticA Field Trip

As a final year Fine Art student at Curtin University, we had the benefit of having an engaged and forward thinking Professor in our electronic arts unit who was open to, and fascinated by, the potential for 'interdisciplinary practice' from the position of

the artist in technological industries. One such facility that supported the notion of interdisciplinary practice was Australia's only science based and laboratory located enterprise: SymbioticA. Located in the Department of Human Biology and Anatomy at The University of Western Australia, SymbioticA is a subdivision within the department that is set aside for artists, run primarily by artists (with scientific directors) for the purpose of providing artists with the tools, equipment, materials and support to enable their engagement with scientific practice.

Our Professor kept us engaged with that perspective even if the artists that resided at SymbioticA argued and discussed the point of whether artists in science gain enough knowledge to consider themselves science practitioners or not. The scientists seemed to be quite clear that the artists were immersing themselves in science, not adopting a new profession of scientific practitioner. However, many scientists who worked with SymbioticA are recognised as arts practitioners without formal training such as Guy Ben Ary and Gary Cass. This example implies that specialised knowledge in sciences is required for successful practice but that the same is not necessarily inferred for scientists practicing in the arts, even though specialised knowledge may be required for both practices in order for such projects to be effective. However the social and cultural standards for science are set much higher than that of the arts. In some cases, a creative interpreter is useful and this is where collaborative works between artists and scientists tend to be the most interesting as there is a conduit of information flowing between the two practices informing each other. Such work highlights the communication and connections between these systems of understanding often more than the quality of the work itself.

The complexity of interdisciplinary studies and the nuances of what constituted Bio-Art and how we should 'read' it was reinforced when we had a brief day of encountering the projects that were being undertaken by the artists at SymbioticA. I could never really quite put my finger on why artists are so fascinated with what is behind the closed door in the lab. I came to realise that the main attractions of the field for me were the foreign subject matter and its connection to the concept of 'life', along with a strange mixture of parallel and contradictory approaches in Biology and the

opportunity to be enmeshed in discourse on the values assigned in this system of 'specialised' knowledge.

Most striking were the attitudes and methodologies applied to the living tissue itself by scientists and artists alike which were seemingly disconnected to that which the tissue came from, which in turn was disconnected from the culture which the donor came from. It seemed quite rational and practical for the disconnection to take place for the scientists we spoke to. It made some sense; the tissue needed to be *used*. I found there was more reverence for the cadavers in the dissection lab than there was for the tissues in the dishes and that the more fragmented the tissues and parts were, the more seemingly removed the social connections appeared. Much of the practical use of tissues and bodies in the laboratory appeared to be steeped in policy, which was understandably a result of their connected ethics and their resulting laws. The right to use such materials in science was not permitted easily. In order to keep utilising bodies for scientific purposes these policies needed to be upheld and rules obeyed. Reverence was high on the list for all associated rules such as respecting the bodies and hiding their identities during practices that were undertaken while using them. Even though these bodies were not always 'complete', their fleshy presence with markers of familiarity like hair and fingerprints reminded us that these bodies were on loan, that they were still connected to families and would, after duty, be returned for the usual cultural rituals of burial and so on. There was a tension here between physical detachment/disconnection and reverence which was indicated by both policies and personal reactions in varying degrees, dependent on the level of recognisability to belonging to a human body. In contrast, when it comes to a cell, this is so thoroughly detached from the body that it becomes difficult to make the connection at all – these impressions pervaded my thoughts.

Eventually on our field trip, we went to see some more cells. The cells we saw were of course invisible to the naked eye and as such the story told about them was very important to me as a practitioner working from a cultural position. Impressions, stories and inevitably questions were the things that were (and still are to this day) the driving forces behind my visual and intellectual pursuits – so I listened carefully.

The 3T3 cells (3T3 being the 'name' assigned to them) we encountered were from a mouse. One mouse, we were informed, stocked the labs of the world for many years. Words like, 'stock', 'workhorses', 'materials', concepts of 'mass' and such utilitarian terms were swirling around in my head. These terms coupled with my visual preference for comprehending concepts continually conjured images of them generating a profoundly creative, speculative *and personal* experience. How could the cells of one mouse stock the world's resources of mouse cells for study over and over and over for years and years? I asked and the answer was obvious: they had been cultured to the point where such cells, if they were to be recombined, outnumbered and outmassed the mouse donor exponentially. I imagined a giant mouse the size of a bus. It seemed a little easier for the scientific people we communicated with to separate the cells from the donor. I however, was interested in subject matter and the interconnected interwoven stuff of the location of that subject within a society, a culture, with a history. For me, this story contained a multitude of connections to everything else around it. The concept of mass in particular when contextualised and reconnected to the mouse was mind blowing. To me, it was a giant mouse rather than a disconnected, dispersed number of packages of service oriented stock.

As troubled as I was with what I naively saw at the time as disconnected and cold practices in Biology (it was more complicated than that), I eventually signed up for a semester of study with this art lab. I wanted to know why I felt that way, why scientists didn't, or how they managed their practices if they did have similar feelings. I was certainly fascinated as an artist by the works associated with this kind of technology that incorporated living things, but at the same time I was deeply ethically challenged. The practice never sat comfortably with me, however I swore that if I ever did feel comfortable about using tissue without this reverence I felt, I would end my practice in this field.

We had the opportunity to work with the mouse cells on our visit that day. We were going to undertake a process called "splitting" whereby "confluent" cells (that is, cells that have taken up the available space in a petri dish) are disconnected from the cellular bonds they have created, and then split into more dishes. This is a way of growing and multiplying cell stock. As students, we were dissolved of our own confluency

and broken into smaller, more workable groups in order to undertake the lab practice. Each group was given a six well dish (a petri dish with six wells built into one unit) to place the cells in. We were told that the cells might anchor in place better if we scratch something into the dish's base with a pin or sharp object. I had been listening to the ordered methods of the scientists for most of the morning and wondered what would happen if the ordered system of science and particularly Biology and the technology used to demarcate our bodies were to be interjected with unrelenting chaos? What would happen if the mouse grew back monstrously from its cells to claim its connection to what was/is a part of its body? I decided to scratch an anarchy symbol into the dish well that I was using. This was the start of a project that would be known as "*The Anarchy Cell Line*".

Each of the group's cells eventually died and for us this was distressing. It was a meaningful experience because our practice as artists does not ask that we disconnect ourselves but rather try to make connections between thoughts, subjects, objects, environments and cultures. Even though some of us had moved into other areas of the curriculum like food art, working with animals and so on, the "spectral figure" of the 3T3 mouse figured heavily in my thoughts and subsequent work during that study period. I kept wondering 'what of that mouse', 'what of the connections', 'what does this all mean'?

The Inception of The Anarchy Cell Line Project: HeLa Stories

Later during my study, I started to talk to the Science Director at SymbioticA about these issues because I had wondered if similar thoughts ever crossed his mind. They did but perhaps not as often as mine. We considered that perhaps it was because he was not only a practitioner in his field for many years but that he had become accustomed to using these materials. Talking over the story of the 3T3 cells, the scientists told me "that's nothing, there's a cell line called the HeLa cell line". Both the Artistic and Scientific Directors became excited and started to relate to me two different stories with some similarities about an African American woman in America during the 1950s who had become the non-consensual donor of cells. These cells, like the 3T3

cells, had become one of the most widely used (human) cell lines in biotechnology. I watched as the two Directors held a heated debate about the woman's name, one claiming it was Helen Lang and the other claiming this was a pseudonym produced by the hospital to stave off any legal or personal inquiries. All the time I was thinking 'how could this happen'? How big would this woman be if her cells were to come back together? I went home that day and researched the matter further, and found out what the story was all about.

After some investigation I had found that Helen Lang was the name given to the donor in an attempt to distract journalists from the origins of the HeLa cell line. John Hopkins University Hospital, responsible for the production of the cell line, stated that this misinformation was intended to 'protect' the donor and their family rather than the scientific body themselves. My research also revealed that the cells which constitute the HeLa cell line were indeed taken from an African American woman, named Henrietta Lacks, during the fifties without her or her family's consent (ACHRE, 1995; Potier, 2001). Well after her death, the cell line mass which reportedly outweighs Henrietta's mass by tons, has become a multibillion dollar industry. Her family had been fighting for years for recognition of Henrietta's unsuspecting and massive contribution to science. Recognition finally came recently in a number of small ways with various plaques, awards and memorials being held. Science, however, is yet to consider Henrietta's contribution in an appropriate formal or financial manner, despite the sciences having financially and scientifically benefitted from the use and sale of HeLa cells. The use of the cells for various studies was extensive. The HeLa cells were utilised when the vaccination for polio was discovered, they have been used in experiments to better understand the effects of nuclear explosion, they have been sent into outer space on scientific experiment missions, and have been widely used in major research in labs all around the world since they were established (Potier, 2001; Skloot, 2000). It has largely been left to student bodies, communities and educational institutions to keep even the current level of recognition in progress.

I was astounded that an act of what could be considered as wrongful tissue acquisition could have taken place without consent. To add to this wrongful acquisition, there appeared to be a sustained denial for many years of the origins of the cells, and

importantly, the contribution this woman had made through her donation, consenting or not, to science. I felt that disconnected, Henrietta had been reduced to a tool of science and that her cells were something to be used with little regard to the woman who had donated them. What had happened to the mouse and the 3T3 cells had been transferred to apply to human acquisition as well.

What struck me so heavily was that even though this information was available the scientists, science practitioners and Scientific and Artistic Director didn't know very much about the story behind the human cell line that was used so prolifically in their own labs. What could be the reason for this disconnection between the story of the woman and the use of her cells? Had the reductionism in science and Biology gone so far that the biotechnological methodology used to discuss bodies had eradicated the connections I thought we all assumed were important? I wondered why there was no room for some fundamental questions like 'where did this come from?', 'what happened to allow me to use it?' I understood the practicalities of the system in that its focus needed to be on the experiment and the outcome, not about the social connection. I had assumed that the social would be intrinsic in all fields and activities, but it appeared to be almost entirely absent from the scientific production of scientific knowledge. The very system that provides knowledge about our bodies was set up to deny any connections that were useful for understanding the body *in context* and as it is *located within a society*. Not only did the hood we split the cells under epitomise sterility and sterile practices, but it felt like the stories did too. The story had been removed from the 'object' and I had never really comprehended the concept of objectification until I encountered the HeLa cell line and the story of its origin. Could any of this be undone? Should it be undone? Could I at least as an artist bring attention to the messy nature of the service of cells?

The Anarchy Cell Line Project

I started to think about the relationship of tissues to the body and how that body, or its detached and divided parts might become, or still be tethered to, the social. From a humanities perspective, the cell and the person are connected. This is not to imply that scientists or science practitioners don't understand the connection, but rather is

to suggest that they push it to one side in the name of pragmatism in order to produce their work (even though it can be shown that science is not socially distant (Latour & Woolgar, 1986 [1979], p. 281) nor “culturally neutral” (Harding, 2001, p. 291). While the activities I had witnessed in the laboratory appeared ordered and systematic, I understood instinctively that this ordering served the purpose of which an experiment could be actioned with as few distractions as possible. The tension between the activities of scientific experimentation and the social stories woven into those practices and materials was something I thought should be made more perceptible in scientific practice.

I started to think about the possibilities to interject mess and chaos into sterile places with such sterile (or even absent) stories. What if ‘I’ was in the dish too? What if I was also in that space standing looking at my *own* tissue – my cells living outside my body whilst I still lived? What if they were there with Henrietta’s cells? What about the concept of presence? *Is* Henrietta still there if her cells are there? What is it that makes us connected to bits of us? What would our amalgamation do or say about all of this? It became clear during the early stages of this venture that such actions were going to create a complex ethical and conceptual project. Regardless of these complexities, which threatened to open up difficult questions about race and gender in Biology and society, I still wanted to attempt a project of this sort.

As I was developing the project I started to consider more seriously the possibility of sharing a dish with Henrietta. The main point of such an act would be the tension between the words and concepts of ‘sharing’ and ‘colonising’. Because of the culturally non-neutral nature of science, ‘colonisation’ seemed an appropriate word to utilise especially as I would be adding the cells from a white Western woman to those that have been harvested from an African American woman.³ ‘Sharing’ is an important word also in this context as it opens up the concept and impact of colonisation – the naivety (and desire) to experience/dominate/absorb/see other cultures. While I feel I never had enough time to really utilise this powerful and problematic aspect

³ Harding (2001) for example notes that “Sciences have been a part of the imperial and colonial projects of their cultures” (p. 291)

of 'sharing' space with Henrietta's cells, the discussion and the development of this facet was always embraced and consciously present in the project. Upon reflection of the project, I realized that there were compelling connections *and tensions* present in the artwork. With my own racial identity of mixed Polish origin, I recalled my grandmother's accounts of being a prisoner during the Nazi occupation of Poland. During her various forced labour roles, she was witness to the medical experiments in what she called "the experimental hospital". These included experiments enacted upon Polish twins (as the establishment was deeply interested in the subject), and the complete draining of Polish prisoners' blood to sustain the German soldiers. The latter resonated with the project with blood being both a symbol of racial identity *and* a (biological) substance of life (Chinn, 2000, pp. 94-96). Towards the end of the war, my grandmother was marked for 'disposal' in the hospital, narrowly escaping with the assistance of a sympathetic German soldier. In this respect, our blood (in the dish) both came from cultural and family histories that were marked by racial, and medical subjugation. This is in no way a claim of a similar or equal experience but it did resonate with me. Additionally, there is a racial tension between our 'blood'⁴ in that our personal and racial histories *are* different and that I am also a white woman who enjoys western privileges associated with that.

I may not have fully realised the relationships between the blood origins in the dish at the time but I did instinctively knew that combining them was a potentially loaded action. Nevertheless, I finally decided to add my own cells to some HeLa cells and culture them making those colonized and suspect histories more obvious that most scientific practices blurred. I hoped that it would present some challenges to my audience, such as what would it mean to willingly add one's cellular matter in 2003 to the 60 year old cells of a black woman who had no say in the affair of her own cellular matter being taken during the 1950s? Part of this element of the project required me to consider whether I should request permission to use the cells. Permission was something not afforded to the Lacks family in the first instance. Ultimately I had decided that an act of piracy, while personally and ethically difficult, would speak

⁴ 'Blood' refers here to the sharing of my actual blood as life force and racial identity (the blood of my race') and to Henrietta as a presence of her cells still denotes blood in the latter sense.

more about the matter and benefit the project than an act of virtue which was primarily about what I wanted to happen in the 1950s for Henrietta. There was no doubt that the act of adding my own cells to Henrietta's was a potent statement. The act of the project is where I always felt its potential resided. I had hoped this 'performance' would highlight some of the important questions I felt were not being asked in the practice of science.⁵

Making The Anarchy Cell Line

The easiest cell source and method happened to be the most artistically desirable for me – that of the drawing of blood. I chose blood because of its visceral nature and its related mixed readings as waste *or* medicine once extricated from the body (depending on its context). The context here was mixed – as both abject waste messing up the sterility of the 'lab' (and science) and as medicine to feed the cells, complicating the normally simplified readings the HeLa cells. Blood represents the abject and signals that the opening of the body proper (that is the contained and 'normal' body) has taken place. The implications of opening the body were many in relation to what Marco Marcon (1996) described as the "medical sublime". The medical sublime is the inability to resolve one's experience upon seeing one's own open body (Marcon, 1996, p. 15). Dick Hebdige (1987) (on Kant discussing the sublime) states:

...the sublime challenges the act of judgement itself by suggesting the possibility of limitlessness. The sublime mixes pleasure and pain, joy and terror, and confronts us with the threat of the absolute Other - the limitations of our language and our capacity to think and judge, the fact of our mortality. (p. 5)

This includes seeing one's own bodily fluid which is the signifier of the open body (Kristeva, 1982, p. 3). Blood seemed to me to be the perfect *mess[enger]*. The blood would not only work as a source of cells with which to 'colonise' and as a source of food, but also as a strong metaphor. Serum forms part of the food for cells in cell

⁵ I use 'performance' here to highlight the act of a creative process and its relationship to the importance of the concept. Performance is considered a creative action (discipline even) within the Arts.

culture techniques and the serum from my blood would provide this for the HeLa cells.

In order to add my own cells to the HeLa cells, I needed to ‘harvest’ a large amount of my own blood cells.⁶ I had planned to have enough blood harvested to perform a number of practical and artistic tasks. I needed to add whole blood, in all its mess and redness, to the HeLa cells and also have enough blood to make serum for the feeding of the cells over the duration of the growth period. Serum contains proteins among other elements, minus the cells and the fibrinogens, and is ideal for feeding cells (Brown & Kimball, 1994). Serum becomes an important element in cell culture and the recipe for feeding and maintaining cells requires warmth, sterility, and a “broth” of medium and serum to feed the cells.⁷ Serum splitting is undertaken through the natural process of clotting which, in biotechnology, is sped up through the use of a centrifuge. The purpose is to separate the serum part of the blood from the other parts of the blood. Often foetal bovine serum is used as food for cells which I was never comfortable with because yet again, the commoditisation of such materials was seemingly without ethical responsibility. Ethics approval exists for such practices of course, but these are tinged with grey area exceptions to the rules when the biological advancement exceeds the distress of the donor (ACHRE, 1995).

The act of feeding the cells with biological matter from my own body became a way of expressing responsibility for my own choices and actions in the laboratory. I wondered why the use of one’s own blood wasn’t required in cell culture – if it were, how many more practitioners would consider the cultural stories and the value of knowing the origins of what it was they were *using*? The act of feeding the cells with my own biological material was thus important on both an artistic and a personal level.

⁶ Harvest is the accepted term used in science to procure biological materials for biological experiments.

⁷ Broth is the accepted term used in science to describe a liquid with supportive elements promoting cell growth and stability.

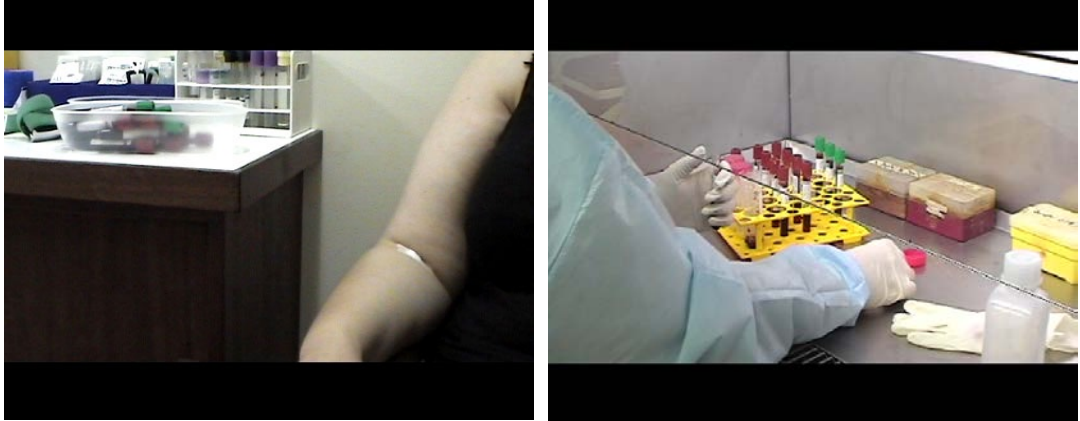
The harvesting of blood for cells and food from my own body was one of the most confronting acts I have undertaken in my career. The process of taking something out of my body for this purpose was a revealing procedure. I saw how biological knowledge production is exposed when it sets aside the understanding of life as connected to many facets both social and physical, from the materials of life. The procedure of phlebotomy (the medical act of taking blood from the body) was confronting particularly in reference to the medical sublime which implicated the abject (a subject I have come to find intrinsic to understanding the strained relationship between society and biotechnology). The quantity of blood was of importance not only because I required it for serum but also because I marveled at how much the nurse was able to take – another welcomed entanglement of science and the social.

I was asked by other artists why I did not choose to use menstrual blood because of its powerful connection to gender and easier collection. It was very important to me in this instance to use intravenous blood to primarily draw attention to the disparity between medical production (tissue and biological matter procurement and use) and the 'self'. As an artistic project menstrual blood would not only focus the discourse too much on gender, it would also implicate menstrual blood as 'waste' too easily. I wanted to question the concept of the fractured body, particularly in the use of biological matter as waste. Even though this is perhaps an arguable point for artists who work with menstrual blood, the gravity of using it would shift focus from the medical to gendered discourse. Ultimately, I felt as though intravenous blood was subtle in the way that it may allow for a more diverse reading of constructed areas of knowledges (gender, race and social) which were more appropriately connected with the implications of the HeLa cell line story and specific enough to offer some networking to cell line procurement procedures. The sterility of the process was also desirable as the sample from Henrietta was procured within the structure of the medical establishment; the hospital. These were all important facets I felt I did not want to obscure.

The process of seeking a way of harvesting the amount of blood I required from my body was difficult to say the least. In a medical context, copious biological matter procurement is seen as 'useful', 'necessary' and even for 'the greater good'. It is understood as a necessary means to find answers that are considered beneficial for a life

to continue in good health. I found that health is an accepted rationale for invasive procedures. Art is not considered by the same criteria nor is it considered to be required for one's wellbeing. Art may possibly be the vehicle to draw attention to the very inconsistencies which might diminish one's wellbeing; however the medical standards for such procedures still stand. My 'unnecessary phlebotomy' required appointments with my local nurse and some documentation which was requested by the nurse of the hosting educational body. Eventually I was sent to a nearby hospital pathology unit to have the blood taken to cater for the serum and for the cell colonisation. The harvesting of blood for social commentary was considered by the medical staff to be more extraordinary than the harvesting of blood for medical inquiry and in fact I was promptly ushered into a more private room to avoid the possibility of medical patients being exposed to my 'non-medical' reaping. I was informed by the phlebotomist that I was the talk of the pathology lab that day. Having large quantities of blood taken for the purpose of an artistic project via a medical facility was 'awkward'. Biology and critical thought intersected in the interactions between myself and the practitioner trusted with the task of harvesting my blood. We discussed my project at which she marvelled at my level of commitment, given the amount of blood being removed. We then made small talk such as what our favourite cheeses were. After the harvest I was given a bag of 14 vials of my own blood, which I placed in the small lunch box esky I had purchased the night before to keep the vials warm (they needed to stay warm to ensure their survival).

My medical blood-letting was a significant act. From my experiences of seeing my own blood leaving my own body, the harvesting of blood was an act that was filled with extreme sensation. Once the blood had been extracted from my body, I rushed back to the lab (which was close by) where I proceeded to place my blood cell stock into the incubator and started the process of extracting the serum from my clotting stock. It was during the moment when I picked up the rather sizable warm-to-the-touch bag of vials, that I realised the gravity of this act. This blood was *still warm*. The blood was so warm that it *warmed the bag it was in*. I had realised this is what it feels like to hold something from inside my body that is now outside of it and *still alive*. Warmth represented life.



Fig's. 2 & 3. *The Anarchy Cell Line*, Video still (Verspaget, 2003)

Furthermore, at the moment when I was confronted with my uncontained blood under the sterile hood, I recognised the magnitude of my 'performance'. Not only did these actions reveal and make vulnerable (both physically and socially) my own opened body but they highlighted the magnitude of the prospect of inhabiting someone else's open body (in the form of HeLa cells combined with my own cells) and all that this might encompass.⁸

The experiences of these early stages of the project were profound, compounded particularly by the instance of an accidental spilling of my blood. I had, during the processing of my blood serum under the sterile hood, knocked over one of the large open vials of blood. A shiny metal surface, made sterile by the practices and rituals I adopted and learned from the experiences of technicians who had used these machines and facilities before me, was now covered in my uncontained whole blood.

⁸ Physical vulnerability relates here to the giving of large quantities of blood as well as the act of combining one's own blood to an existing cell line which is cancerous in nature. This could conceivably (though highly unlikely) form a hybrid cancerous cell stock which could be introduced back into my own body and create cancerous cells in vivo. This issue, while very unlikely, was the main focus of the department as to whether the project should be allowed to continue rather than the ethical considerations of utilising stolen cells and adding cells for purely social discourse. In any case, discussion was undertaken as to whether I needed to apply for a license to create transgenic organisms on that basis. This formed some debate within the department as it was apparently common (but discreet) practice to use one's own cells for experimentation in the virology labs. It was decided that a licence was not needed.

The spilt blood was a far cry from the sterile, clear containers housing the HeLa cells suspended in standardised commercial Dulbecco's Modified Eagle Medium – the pretty pink substance which provides added nutrients to the cell culture.

In a short series of moments I had a counterintuitive medical procedure undertaken involving the harvesting of matter from my own body and felt its life-warmth through the vials of it when it was outside of my body. I had seen it in its essence as bloody mess when I had spilt it in the ultimate juxtaposition of sterile surface and spilt blood further compounded by my own position as ‘artist outside of sterile hood’ and simultaneously ‘artist (as fractured matter) inside of sterile hood’ – both of us living. *I had, in that moment realised the attempts by science to maintain a substantial divide between the self as person and context for biological matter through the lab and its Biology specific processes.*

The ‘stage’: Culture[ing] Blood

Adding blood to the HeLa cells was an ‘act’. Performance plays an important role in both Fine Art and Biology. As I have referred more than once to the word ‘performance’ in this text, I want to reveal some commonalities between biological practices and artistic practices. The position under the microscope that houses the slide is called a ‘stage’. It is a flat but elevated surface which is ultimately the location of that which is viewed by an audience. When the cultured dish of HeLa and my own cells were combined, the dish had been set up to house a round disc or slide which would fit under a microscope. The idea was to watch some of the cell culture – ‘live’ and under the microscope; the viewer would become the audience of the stage.

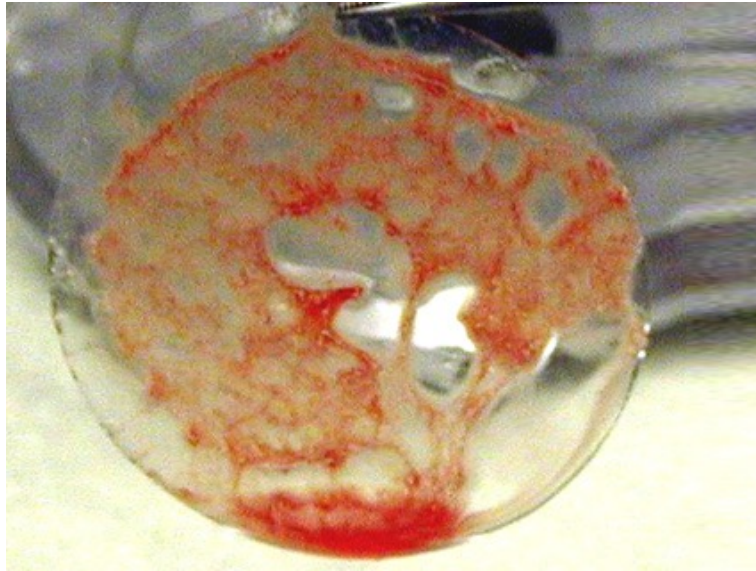


Fig. 4. *The Anarchy Cell Line*. Detail slide dish with HeLa cells and Verspaget's Blood (Verspaget, 2003).

Similarly the space in which invasive medical procedures are carried out is called a 'theatre'. The surgical theatre as well as the theatre in a playhouse is a space where performance and observation of the performance takes place; it is a place for action, agency and participation. These commonalities are not by accident as the history of biological knowledge construction is steeped in observation, gazing, participation and actions of anatomical discovery such as the public autopsies of the 1600s and beyond (Mathiasen, 2010, p. 476; Mitchell, 2012, pp. 2-3).

As an artist working in the lab for the first time, these kinds of connections became important to me; I found that there was a strong link between artistic and biological performativity. The act of adding my blood to Henrietta's cells, and the laboratory and its associated medical procedures (such as the drawing and harvesting of biological matter) were practices located in science but enacted by an artist. These acts were ultimately revealed as acts of 'culturing'. I hoped that through the act of adding of my own cells to Henrietta's cells, using and manipulating the processes and policies of the scientific methods of cell culturing, that I could begin to re-'culture' science.

Discoveries from The Anarchy Cell Line

When I embarked upon *TAnCL* project, I had hoped that it would address some of the issues, concerns and questions I had concerning tissue ownership, lab techniques and the production of systems which set about disconnecting the social from the petri dish. Little did I know that it had revealed much more. I would become aware of the breadth of related questions and findings only over time through deeper reflection and a continued inquiry into theoretical frameworks that had helped me to wade through these issues in the construction of scientific knowledge.

Over time I had found that through the manipulation of cells, separated from the body in very deliberate demarcation processes, there were many fascinating things taking place. Ambiguous boundaries were actually being revealed through the very act of this demarcation. I had started to see that not only was there an ethical issue with the HeLa cell line but also an opportunity to seek out connections, to identify intersections for potential revelation and to perhaps seek out new metaphors to facilitate interrogation of these processes.

Ultimately, the project has enabled me to explore the vague boundaries signified by the cell line and the stories that surround and inhabit it. These were often revealed in my experiences of the lab and its practitioners, through the language used. Language became an interesting signifier of the lifting of the veil over biological matter – this project in particular became populated by wilful and provocative words such as ‘combining’ ‘cohabitating’, ‘collaborating’ or ‘sharing’ in the dish. The HeLa story was populated with words like ‘monstrous’, ‘infamous’, ‘immortal’ and ‘aggressive’. I detail these in chapter two.

As language became a part of my thought process, I became more aware of the conversations amongst my peer group that our time in the labs had generated. Discussions in the laboratory were predominantly saturated with conversations about horror films and, in particular, zombie films. We talked about the latest zombie films, our favourite zombie films and what we liked about zombies. I had not at that point connected the gravity of the subject matter with the context in which it was spawned.

As the binary distinctions central to the HeLa cell were made ambiguous through scientific processes that both obscured and highlighted them, we had by chance started a journey into the borderland. What I hadn't yet realised was that we had inadvertently started a conversation about monsters; those undetermined creatures which inhabit multiple boundaries simultaneously and who deny any possibility of permanent and clear categorisation. Those that inhabit this borderland are by their nature considered monstrous.

Over several years, a series of contemplations on the matter emerged with more clarity and this led me to seek out more information on binary distinctions and how they are, or might be, rendered porous and open. A quote I had come across from Margrit Shildrick (2002) summarises how this project and its revelations might be useful to such theories:

It is not that I want to deny the transformatory aspects of new technologies, but rather to warn against the dangers of replacing one set of boundaries for another. The real task for the postmodernist theorist is surely to take up Anzaldúa's concept of the borderland, that 'vague and undetermined place', as not simply the location of the abnormal, but as the place where all distinctions are undone. (p. 126)

Ultimately, embracing the borderland manifests as chaotic, anarchistic and monstrous. If distinctions are to be undone, fear of chaos makes it easy to be enslaved to the desire for order. Essentially *TAnCL* has become a real life incarnation of the concept of undoing distinctions; at least I hope it has stood as a potential symbol of what a distinction – demolishing 'monster' may look like, all the while exemplifying that such undoing's can exist without the fabric of society crumbling into an apocalyptic heap (although we still desire to explore and muse over a post-apocalyptic boundary-less society safely from within popular culture).

The categories that *TAnCL* appears to occupy are contradictory to one another and simultaneous to each other, and this is where its power resides. These categories found firstly instinctually and eventually through contemplation, are also shared by other symbolic monsters like the zombie (living – dead, human – non human). *TAnCL* I hope offers a way in to the discourse surrounding the ordering of Biology and serves

as an enacted *example* of a theory that opens up, much like my veins for the materials of the project, and like Marcon's medical sublime, a conversation about the delightful and more inclusive messiness of undoing boundaries and binary distinctions.

In the next chapter I talk at greater length about Henrietta Lacks, the donor of the HeLa cell line as an extension of *TAnCL* as it is an integral part of the project. The HeLa cells, as discussed, were not only the catalyst for *TAnCL* but were (and remain so) the most compelling examples of a border dwelling occupant installed within the manufacture of biological knowledge. Her story, of her and her cells, is important as they become the entity upon which the zombie metaphor will be applied in chapter eight.

Chapter Two

Henrietta and the HeLa cell Line

Medicine's most consistent effort – even within the science of genomics, but before that in biomedical research – is to discover ways to read the body. Between this act of reading and the patient's identity, lies a legibility that is social, cultural, and political. (Holloway, 2011) p.153

This chapter discusses the history of the HeLa cell line which is inclusive of the history of the donor Henrietta Lacks, so that the relationship between person and material matter might remain somewhat intact. Attention is paid specifically to the processes of procurement of Henrietta's biological matter and to how her identity was unsuccessfully obscured from the biological and scientific use of her cells, indicating that such a relationship is intractable from either social or scientific readings of the body. The sources on the life and experiences of Henrietta Lacks are very limited to one source – a book by Rebecca Skloot. Likewise, discussions on the HeLa cells and their history are limited also to a small handful of primary sources such as Rebecca Skloot again, Michael Gold's (1986) book *A Conspiracy of Cells: One Woman's Immortal Legacy and the Medical Scandal it Caused* and Hannah Landecker's (1997) paper "Seeking Cellvation™: HeLa Cells and Immortality". This chapter therefore necessarily relies heavily upon these three texts for the information contained within.

The HeLa cell line is one of the most controversial scientific biological 'workhorses' still in use today. It has been the catalyst for various debates on issues in biological experimentation and cultural discourse about Biology. During its 60 years of use in

science, HeLa has challenged and inspired science communicators and cultural theorists alike. The story of how the HeLa cell line was established contests the very foundations of scientific and medical ethics through the manner in which it was procured and how it has been historically and contemporarily used as both medical workhorse and cultural artifice. These issues have informed not only policy over the years but also how culture is enacted upon the processes of reading the body within a scientific context. As we become more entrenched in this biotechnological era, the discourses which address such issues with tissues when 'reading the body' in science have intensified. The HeLa cell line is revealed in this respect as not only an exemplar of a biological workhorse, but also as an exemplar of what a dialogical artifice that bridges discourse between science and the humanities might look like.

HeLa cells have been used in cancer research, been instrumental in the development of a vaccine for poliovirus, been utilised in nuclear tests, sent into space in early space shuttles, utilised for medications and viral tests, leukaemia treatments, to create drugs for cancer treatments (tamoxifen for example), cloning advancements (in fact they were the first cells to ever be cloned), gene mapping, and employed in numerous comparative human tissue experiments (Landecker, 1997; Perié, 2010; Skloot, 2001). The HeLa cells were also the first cells ever to be commercialised. While their scientific use in history outweighs any other possible use, the HeLa cells pervade many fields of practice in the humanities too. They are used as subject in literary works such as the books and articles of Rebecca Skloot, Hannah Landecker, and Michael Gold, and as an object/subject in the fine arts in such works by Cynthia Verspaget, Jeffrey Kent, and Adam Curtis.

One cannot discuss the continued use of the HeLa cell line in science and not consider its other use in the humanities. The result of its use whether in science (besides its financial profits through sales) and the humanities, the HeLa cell's utilisation does remain largely as intended for altruistic means; the sciences utilise the cells for benefit of research, and the humanities attempt to reconnect the social to the scientific – connecting Henrietta to her cells. Nevertheless, altruistic intent has not overpowered the central utilisation of the HeLa cell line as *product for consumption*. To this very day, these cells can still be purchased. Landecker (1997, p. 1), one of the first humanities

researchers to focus on revealing the story behind the HeLa cells, in fact uses the term “haunted by the body of its donor” when recalling the HeLa cells. The persistent scientific-social HeLa stories reflect much of the paradigm associated with the perceived divide between cells as stock and body as donor or their interwoven stories of “origins and existence” (Landecker, 1997, p. 1). Landecker (1997, p. 25) notes that these cells are purposefully divided from their organism in order to uncomplicate them scientifically even though writing about the cell line has revealed a kind of personification of the cells themselves. While the cells have been *used* by many areas of research seemingly beyond the care for their donor, altruism and exploitation do appear to go hand in hand in many stories of the HeLa cells. It is hoped in the humanities however that through the reconnecting of donor and cell that the exploitation might be countered, the connection of materiality to the social might be bridged, and the exploitation might be given meaning so the HeLa incident becomes a tool for learning rather than simply a story for consumption.

The Cell Line – A Definition

A cell line is considered an ‘immortal’ (continuing) culture of cells. Cell lines are used in laboratory experiments for their unique ability to continue to divide beyond their usual limitation. They are commonly called ‘immortal’ because in ideal conditions they transcend the maximum copy limitations of regular cells called the Hayflick limit (Shay & Wright, 2000). The repeating copies of a cell in its ‘normal’ limited state will degrade the telomeres (the protective DNA caps on the ends of chromosomes contained within the cell) with each copy. Up to fifty-two copies take place in the Hayflick limitation. The telomeres of cancer cells however do not degrade in the same way enabling them to reproduce indefinitely. This ‘indefinite reproduction’ has become associated with the term ‘immortal’ even though there is little evidence between such cells and immortality as a form of indefinite extension of life in an organism (Shay & Wright, 2000). In opposition to the desire and search for cellular (particularly *human*) immortality, this ability for some cells to endlessly divide in the right

environment is also the driving factor behind cancer.⁹ The easiest cells to culture for cell lines are those that are already growing rapidly beyond their 'normal' limitations. By definition, this implicates the tumour as it is in effect a mass of cells that have escaped the Hayflick limit (Mather & Roberts, 2007; Wilson, Davis, Illum, & Zweibaum, 2012, p. 349).

A 'cell line' holds a number of properties which give it its immortal status within science. These scientific qualifications go well beyond the face value definition of 'immortality'. A cell line has usually been 'passaged' at least once into new dishes (Freshney, 2010). Passaging refers to the process of splitting and transferring cell stock as they reach confluency (abundance within the dish) into new petri dishes, or 'sub-cultures', thus keeping the environment conducive to the process of ongoing growth. A cell line is also able to be passaged multiple times without effect from the Hayflick limit, after which they would typically die. These stipulations are applied to differentiate between cell stocks and cell lines, both having different uses as the cell line is able to be observed over several passages making it ideal for research that requires comparative study and extended time frames.

The cell line is procured in a number of ways. Cell immortalisation may occur naturally in some animal cell cultures, specifically rodent, in which a few cells can spontaneously escape the Hayflick limit from a primary culture (that is, a culture that has not been previously passaged) (Mather & Roberts, 2007, p. 209; Rasnick, 2011, p. 160). Cells can be rendered immortal as well. They can be altered through genetic manipulation where genes are introduced that trigger immortalisation (Wilson et al., 2012, p. 349). Suitable cells unlimited by the Hayflick limit, can also be taken from tumours as they have escaped divisional limitations.

⁹ Human immortality is emphasised here because the discussions of finding the key to living longer in the sciences is focused on the human benefits – there have been no discussions that I have found that focus on nonhuman immortality. There has been no expressed desire to apply immortality or life extension to nonhumans. Such applications have only been applied to animals as experimental objects for furthering human benefits.

The HeLa Cell Line

The first human cell line – the HeLa cell line – was established from the biopsied tumour of an African American woman named Henrietta Lacks, in the 1950s. The significance of this particular ‘technique’ (tumour tissue biopsy) along with the success of the HeLa cell lines survival has shaped the history of tissue culture as a process (see Mathers and Roberts (2007, pp. 1-2)). Tumours remain one of the central methods of procuring primary cells for cell line development particularly for cancer targeted research (Gazdar, Girard, Lockwood, Lam, & Minna, 2010, p. 1). What is revealing about the story behind the establishment of the HeLa cell line is not only their re-sounding ‘success’ in scientific discovery, but also the manner in which they were procured: the cells were taken without Henrietta’s informed consent. This has been the focus of much of the discourse surrounding the cell line from outside of the sciences. Henrietta has been positioned through various relationships between medicine and her race, gender and socio-economic status, within the discourses of reading the body in Biology; she is positioned in discourses from both the science and humanities on the subject of biology.¹⁰ Henrietta occupies both sites of contest within the humanities *and* the sciences where the construction of knowledge takes place, that are normally seen as distinct from one another (see Lykke and Braidotti (1996) on ‘the great divide’ which is additionally covered in chapter three). This dual occupation is a result of her cultural and social body being active within a period where the medical system equated social statuses with a particular level of medical responsibility. These levels of care and responsibility, by all historical accounts, were largely dependent upon race, gender and economic status, rendering Henrietta Lacks the perfect candidate for procurement of her biological matter, and the medical and scientific industries as exonerated from many of the social responsibilities of such a harvesting.

¹⁰ See for example some of the most prominent articles, papers and books on the subject from science writer Michael Gold’s (1986) *A Conspiracy of Cells : One Woman's Immortal Legacy and the Medical Scandal it Caused*, journalist Rebecca Skloot’s (2010) *The Immortal Life of Henrietta Lacks* and social science writer and academic, Hanna Landecker’s (1997) “Seeking Cellvation™: HeLa Cells and Immortality”



Fig. 5. Henrietta and David Lacks, circa 1945 (Henrietta-David-Lacks, n.d) Photo courtesy of Joshua Franzos & The Johns Hopkins Institute for Clinical and Translational Research.

Henrietta's Life

The story of Henrietta Lacks, the woman, is not widely known. The immediate Lacks family have been reluctant to divulge their family's history due to the way their mother's story had been sensationalised in the past (Skloot, 2010, p. 51). It is for this reason that comprehensive accounts of Henrietta's life are limited to a small number of writers and journalists. Rebecca Skloot is the primary source for this material as she is the only source that has researched and drawn from the family's accounts on the life of Henrietta Lacks. Such personal accounts are rare when seeking information about Henrietta. Skloot was regarded by the Lacks family as a trustworthy and non-exploitative recipient of this kind of information (Dobbs, 2011). Skloot's book titled *The Immortal Life of Henrietta Lacks* (Skloot, 2010), is perhaps the most comprehensive account of Henrietta's life to date and is drawn upon heavily in this section about Henrietta's life. It should be noted that in addition to the accounts included being limited to that one primary source, the family's recollection is, in effect, mostly mediated through Skloot *and* my reading of her work, rather than from the words of Henrietta herself.

Henrietta Lacks was born in 1920 in Virginia as Loretta Pleasant and was one of ten children to the Pleasant family. Henrietta lived a life of labour in the tobacco fields with her cousin Day (David) Lacks. Eventually Henrietta and Day married in 1941 at the age of twenty and twenty five respectively. The two had spent nearly their entire lives together and it was not a surprise to her family that they would wed (Skloot, 2010, p. 23).

They bore three children (although some accounts mention four, and even five children) (CBSNews, 2010)). The Lacks eventually moved to Baltimore. By many of her family's accounts, Henrietta was considered as forgiving, tough, and loving, and a very giving woman who would always put others before herself. Further evidence about Henrietta's personality and her personal life is very limited. Even Skloot's book chooses an approach of chronological life events and cell line creation over personal perspectives from those who knew Henrietta. It is for this reason that Henrietta's personal characteristics, which I would have liked to have included to reinforce a social connection to the story of her cells, can only be discussed in a very limited way.

Henrietta's Illness

Henrietta had complained about excessive vaginal bleeding, pain and discomfort in her womb for some time and eventually sought out medical opinion. She had told family for a while that she felt something was wrong with her uterus and had in fact upon self-examination found that there was a lump that she thought was not normal (Skloot, 2010, p. 15). She attributed the discomfort in part to having just given birth a few weeks before but at her family's suggestions she sought medical attention. Initially she was diagnosed as having a sexually transmitted disease which at the time was often assumed on the basis of race (Landecker, 1997, p. 5). In Skloot's account, Henrietta's family suggested that Henrietta was concerned about her husband's infidelity and potential sexually transmitted diseases so it is possible that she expressed this also to the doctor. Her records reflect a past history of asymptomatic neurosyphilis and gonorrhoea, both of which she refused treatment for. She was also recommended for a test for sickle cell anaemia which she declined (Skloot, 2010, p. 16). The tests Henrietta underwent for syphilis during her doctor's visit came back negative

and she was urged to seek further consultation at Johns Hopkins Hospital to find out what the medical problem might be. Skloot notes that Hopkins was the only hospital within distance that treated black people. Hopkins Hospital segregated patients into 'coloured' wards which gave access to 'coloured only' toilets and drinking fountains. Henrietta's husband, Day, dropped her off at the hospital where she was admitted to the segregated ward and it is there that the biopsy was taken. The resulting diagnosis was cancer and treatment of it followed. It was found that she had cancer specifically "Epidermoid carcinoma of the cervix, Stage 1" (Skloot, 2010, p. 27). This was later corrected to "a rare adenocarcinoma" (Masters, 2002, p. 316). Henrietta was told she would need further treatment.

By all accounts Henrietta never complained about any discomfort during her treatment. According to her family, she was under the distinct impression that the treatment would cure her and that she would remain fertile. Her records show that she had not been informed of the impending infertility from the treatment administered. The records also indicate that had Henrietta known of the side effects, she would have chosen to avoid the radiation treatment which eventually left her physically burnt (her torso had turned black) and very ill (Skloot, 2010, p. 48). Despite undertaking what was considered to be a promising treatment which consisted of having radioactive rods sewn into the affected area, eight months later in October 1951, Henrietta died (Landecker, 1997, p. 1).

This brief account represents the unfortunate lack of information about, and attention to, Henrietta's life and years of illness in general, over the interest in her cells – something reinforced both in science and the humanities.¹¹ It is conceivable that it is the story of her cells that have grabbed the public's attention and as such it is this element that figures heavily in accounts of Henrietta's life. In fact a recent CBS public interest news broadcast noted that the "story starts at the end of Henrietta's life" (CBSNews,

¹¹ Skloot does go into some more detail about Henrietta's life in her book however those accounts are geared towards areas I would not choose to cover here. Additionally the other accounts of Henrietta's life are dotted throughout her book in small paragraphs and mainly cover small anecdotal recollections or accounts on Henrietta's family history.

2010). Even though some writers and journalists have claimed to counter this imbalance, Skloot's book, the only 'extended' account of Henrietta as a person in literature, still favours the story of her cells over the story of her life. Her story is no doubt exceptionally important to the history of scientific discovery and ethical discourse in biology. This omission of some aspects of Henrietta's life such as accounts of her personality which are relegated to that of being simply a giving and agreeable woman (CBSNews, 2010), unfortunately render the knowledge of her social history as quite limited. I maintain that this overlooked connection is one of importance in comprehending the relationship of the biological material body to the social agent.

What *is* apparent from these accounts is that the information given to patients of the period was limited because much of the information was considered to be outside of the realms of the patient's understanding and unnecessary. Henrietta for example was by all accounts not initially told that the treatment she would receive would leave her infertile. We can ascertain that the diagnosis was not explained to her in a manner that she could understand easily: in Skloot's account Henrietta's family had commented that if she had known about the infertility issue she would have refused treatment. The perception that there was even a choice between the two indicates that she perhaps felt that there was a potential to have another child in her future. It becomes clear from her medical records and her family's reports that Henrietta did not understand that her cancer was life threatening, and as a reflection of that period, was perhaps not given the necessary information to manage her health options. This indicated that Henrietta was already being subjected to medical fracturing between body and person. This fracturing would become intensified in the next stage of Henrietta's cell line story from biopsy to cell line conversion which takes place in the laboratory seemingly at a distance from the personhood of Henrietta Lacks through the narrowed lens of medical science.

Henrietta: The Medical

The accounts of events between Henrietta's treatment and when her tissue ended up in the laboratory are obscured by the scientific absorption of her social story at this point. Exactly how a portion of Henrietta's biopsy ended up in a basement laboratory

with a scientist who can only be described as driven, disconnected from patient perspective and primarily focused on undertaking experimental research, is also a somewhat contentious subject.

A biopsy was initially taken from Henrietta's tumour by her gynaecologist Howard Jones that tested positive for cancer. When Henrietta came back for further treatment, believing that she would be 'fixed up', medical records clearly reflect that a sample of her carcinoma *and her healthy cervical tissue* was taken by the surgeon attending, Dr Lawrence Whartin Jr., and sent to Dr George Gey (Skloot, 2010, p. 33) – not for further testing, not to extend possibilities for treatment, but for experimentation in the Gey lab as deemed acceptable by Howard's superior, Richard Wesley TeLinde. The only understanding Henrietta had of the procedure was the form she signed which gave permission for her treatment. She had no concept that biopsies were being taken for the comparative study of carcinomas (invasive and non-invasive). Jones observes in his notes the virility of Henrietta's carcinoma, and that from her medical history, either the lump he had examined and biopsied had gone unnoticed by other physicians (which was unlikely), or it had grown rapidly in a short period of time.

Prior to the period where Henrietta had her initial biopsy taken and her results were confirmed, Jones and TeLinde had been embarking upon investigation into what he called "unnecessary hysterectomies". Their premise was that some cancers that had been diagnosed were unqualified and that unnecessary hysterectomies had been carried out during this misdiagnosis. The premise was that lives could be saved by understanding that precancerous cells could only be detected via a pap smear which should be backed up by a biopsy *before* treating aggressively. TeLinde treated non-invasive carcinomas ('surface' carcinomas) as a pre-stage of invasive carcinoma aggressively while many professionals believed that the two were unconnected (Skloot, 2010, p. 28). TeLinde felt that establishing what was *not* cervical cancer was paramount to moving forward in the treatment of cervical cancer. His premise was rejected by the medical establishment and he felt a study was required to produce data to support the need for these changes in diagnosis. The plan was to utilise the records at the hospital to compare and connect surface carcinomas with invasive carcinomas.

As Skloot (2010, p. 30) notes, the use of patients in such research, where there was a “large indigent black hospital population” (Howard Jones’ notes), was not unusual.

An example of this extensive history of exploitation was the Tuskegee Syphilis Study in which African American men were called in to receive free treatment for general ailments between 1932 and 1972. Many of these men (399 of them) were diagnosed with syphilis but denied knowledge of the diagnosis and possible treatment in favour of data for a study on syphilis (Fairchild & Bayer, 1999). Another example were the multiple Philadelphia Holmesburg Prison experiments between the 1950s and 1970s on a large African American population (Hornblum, 2007), the un-anesthetised gynaecological experiments by J. Marion Sims on African American female slaves during the 1870s and the experiments of ‘cardiotoxic’ drugs on poor African American boys as recently as 1998 (Washington, 2008). Yellow fever and atomic radiation experiments were also conducted during these periods as well (Nelson, 2007). This is by no means an exhaustive list but rather a few examples of the historical (and continuing) climate of the African American non-consensual medical experimentation in which Henrietta was treated.

Jones and TeLinde’s findings suggested that there was a connection between the two carcinomas and that a laboratory data collection process should be started. A cell stock was needed to continue a research premise and for consistency in that research. A consistent tool or ‘workhorse’ was much sought after in order to provide more consistent data. The concept was to compare the growth in vitro of normal cervical, non-invasive carcinoma and invasive carcinoma cervical tissue to prove that the two types of carcinoma behaved similarly (Skloot, 2010, p. 30).

A review of the patients by TeLinde and his staff had resulted in the conclusion that the black population, since they were receiving free medical care, would be suitable and ‘fair game’ for the procurement of cells (Skloot, 2010, p. 30). It was at this point in time that Henrietta’s diagnosed cancer was seen as a potential source for the cells they might need. TeLinde anticipated a fruitful research future if they could grow these cells indefinitely in the lab. TeLinde enlisted the assistance of Dr George Gey who, along with his wife, had been trying to sustain growth of tissue outside of the

body. Animal (specifically rat) tissue had already been established for sustained growth but human tissue had not been grown for more than a few weeks before dying (Masters, 2002, p. 315). Gey had been looking for some time for a cell line that could be stabilised, continually grown, and utilised for scientific and medical research. All the cells he had used in the past had been limited in that they eventually succumbed to cell degradation and died. Gey recognised the potential that such a 'cell line' would have in medical research. TeLinde took cells at will from any female patient that fit his criteria. In return for the cells, Gey agreed to exchange his culturing skills and any useful data related to TeLinde's research premise. Skloot (2010, p. 30) notes that Gey said of himself that he was "the world's most famous vulture, feeding on human specimens almost constantly". This is rather an unfortunate self-appointed accolade as the Geys had hoped to undertake this research to understand and indeed cure cancer (Masters, 2002, p. 316). Instead this description represented the disconnection between the means and the ends of such a pursuit.

The Geys and their assistant were not confident that Henrietta's cells would be their ideal specimen assuming that, like other cultures they had tried, the cells would die. While Henrietta was lying in her hospital bed, the cells were being diced and submerged in chicken blood, labelled and incubated. According to Skloot's (2010, p. 40) account, two and a half weeks after Henrietta had the radium removed she was told to come back in for another radium treatment if there were any more complaints.

In the Gey lab, the cells were growing. Gey had reserved his excitement believing like all the others the cells would most likely die. Henrietta's non-carcinoma cells died; however her carcinoma cells kept growing and growing. The more room her cells had, the more they grew until there were millions of them in Gey's lab. The cells were doubling every twenty-four hours. Gey had found his immortal human cells, TeLinde had his data, and Henrietta went home with complications from the radium (turning her torso coal black) and cancer ravaging her body. She died eight months later.

Within weeks of growing the immortal cells, Gey spread the news amongst his colleagues, who asked for some cultures, which Gey agreed to give them (Skloot, 2010,

p. 57). Even after Henrietta's death, she was again a source for the harvesting of more samples. The details of the procurement for permission to gain those samples under the guise of an autopsy are disturbing: according to Day's account via Skloot, the Johns Hopkins 'doctors' asked Day Lacks for permission to do a necessary autopsy "to help his children one day" (Skloot, 2010, p. 165). Of importance is the fact that during the harvesting procedure by the Gey's, Mary (Gey's assistant), noticed the painted toenails of Henrietta as she lay on the slab. She related to Skloot that it made her consider the origins of the cells as coming from "...a live woman. I'd never thought of it that way." (Skloot, 2010, p. 91).

HeLa: The Science History

Gey sent Henrietta's cells to anyone who might be working towards a cure for cancer; a seemingly altruistic intention. Often cells were flown in ice, in the pockets of plane staff (to keep them warm at incubator temperatures) or in Gey's own breast pocket. The sharing of these cells was achieved by Gey's hand. They were, by many accounts, including Gey's own communications, his "precious babies" (Skloot, 2010, p. 58). One batch of cells in the hands of another scientist turned into another sharing opportunity, and so on. Soon, Henrietta's cells had become the work horses for human cell research. While the cells were becoming the standard, they were not ordinary by any means: they were useful because they were 'immortal'. An experiment, if inconclusive, failed or flawed, could be reproduced using the same cell stock without fear of unavailability; the cells would always be growing and available in the labs stocks if they were immortal.

Skloot significantly draws attention to the political climate of tissue culture around the time Gey introduced the public to Henrietta's cells (Skloot, 2010, p. 58). The reception of the discovery was most certainly a result of the scientific climate of the period. In terms of cell culture techniques, society was still imprinted with the historical context of these methods. The highly controversial methods and the political alignment of Alexis Carrel, the initiator of modern tissue culture, underpinned the climate for the reception of new techniques in cell culture.

Alexis Carrel, while gaining notoriety for being sympathetic to fascist perspectives, and an unashamed Hitler-esque Eugenicist (Simmons, 2002, p. 203; Skloot, 2010, p. 59), grew chicken heart cells in a lab claiming their immortality. Carrel died while awaiting trial for his Nazi connections and years later (and only five years prior to Gey's publicity of Henrietta's cells) the cells were destroyed. Suspicion was developing over the immortality of Carrel's cells (Landecker, 1997, p. 22) particularly because the experiment could not be replicated, and it was observed that the likelihood was that Carrel was misinterpreting continual growth through the introduction of fresh cells through the serum used to feed the original cells. In any case, Carrel's experiments still generated optimistic perspectives about the potential for lab grown cells to advance health care discoveries. The chicken heart cells story from Carrel's lab however, conversely gave birth to horror stories of cell culturing. The proposition even spawned a radio horror show hypothesising an apocalyptic monster grown in a lab out of a chicken heart (Skloot, 2010, p. 61); popular culture had its own rhetoric about the Carrel lab activities. 'Immortal cells' and how they were maintained and recorded in Carrel's real lab/ culture gave the impression of a kind of biotechnological horror story. The climate for the introduction of a new cell line was underpinned by this history.

When Gey introduced the immortal human cells, he did not discuss their origins. George Gey ushered in what he perceived as a new era of cancer research during a television interview holding a tube of cells in his hand, on the same day that Henrietta died (Smith, 2002). To publically introduce the immortal cells on the same day as their donor's death highlights the gravity of the unnoticed social connection of the cells to a human being. Dr Daniel Ford, the Vice Dean of Johns Hopkins School of Medicine, recognises that this disconnection was present in the case of Henrietta Lacks and that the care taken for recognition of the feelings of the donor and family were less considered than they would be today (CBSNews, 2010). The procurement of Henrietta's cells unwittingly mirror some aspects of Carrel's eugenic and sexist attitudes – the association is difficult to avoid no matter how altruistic Gey thought he was being. Cells taken from an African American woman without much consideration for or connection with the patient's holistic wellbeing or outcome, and a singular focus on growing the *first human immortal cells* in a lab, could seem too close to

Carrel's methodology to be overlooked. The new cell line was developed from the non-consensual harvesting of a specimen from Henrietta's virulent carcinoma and was publicized on the day she died as changing the face of medical and scientific research; there is no doubt that the cell line echoed both the optimism and the horror of Carrel's earlier work.

Skloot hypothesises that if the story of Henrietta had been revealed at the time the harvesting was taking place it would not have provoked much debate or criticism. Given the combination of race, gender and medical context during which the procedure took place in, a lack of debate would not have been inconceivable. At the time when the cells were publically discussed by Gey, it was only five years after Alexis Carrel's chicken cells experiments. If the HeLa cells origins were discussed in the context of Carrel's work, would debate have been more likely?

However, the only connection this particular context suggested was that the cells Gey introduced were viewed with suspicion (Skloot, 2010, p. 58) and not through the lens of social injustice. The humanitarian discourse about these stories has certainly progressed but the legal position has not changed significantly. In the Australian "National Statement on Ethical Conduct in Human Research" (NHMRC, 2007) for example, waivers exist in tissue procurement allowing the benefit of research to outweigh the consent to procure tissues. In some cases while many improvements have been made to consider the financial impact upon donors where commercial gain is to be made, the suggested and very general considerations (NHMRC, 2007, p. 43) are largely self-enforced as 'guidelines' and the obscure, easily applicable waivers of informed consent still exist.

The cells Gey took to the media had now been labelled as *HeLa* - 'He' from Henrietta and 'La' from Lacks, which is the convention for cell designation (Sherwood, 2010). According to Johns Hopkins Hospital accounts, this was an attempt to 'protect' Henrietta's identity (even though Henrietta and her family didn't even know they existed). Further adding to this protective layer of misinformation, the names Helen Lane/Larson/Lakes (Landecker, 1997, p. 13; Masters, 2002, p. 316) were added to the

vernacular when discussing the mystery surrounding the HeLa cell line. My own experiences of HeLa cells and their story during my residency at SymbioticA, included an account by a resident scientist at the institution that the cells belonged to Helen 'Lang'; this was in 2003 which was relatively recent. The misinformation clearly still prevails, though it is being challenged by cultural theorists and practitioners (artists, anthropologists etc.), science communicators, and journalists.

HeLa Out of Control

Gey had been sharing the cells with his colleagues and they had been sharing alike with their colleagues. They were all quite excited about the prospect of these cells and what they could achieve in medical and scientific research. Within a few years of the HeLa cells being distributed, they had become the standard for cancer and tissue related research, still predominantly used to this day (Masters, 2002, p. 316) p.316. Gey claimed that he had always considered the cells as a shared resource and not a focus for commercial gain. He had in fact always openly shared these cells for no cost with colleagues and associates who expressed a need for them in their research. However, an associate of George Gey immediately recognised the commercial implications of the cells and grew them for such purposes establishing the cells as a commodity for sale. Quickly, the HeLa cell stock had become a product; a workhorse; a "golden egg" (Masters, 2002, p. 316).

After 20 years of research using HeLa cells, Walter Nelson-Rees of the National Institute of Health (NIH) procured six cell stocks from the Soviet Union in an exchange of biomedical knowledge and other stock with the Soviet Union. A resulting foundation for the cooperation of biomedical research was laid in 1972 by United States President Richard Nixon to counter the nation's cold war trepidation (Gold, 1986, p. 3). The stock was sent for testing to biochemist Ward Peterson, an expert in identifying enzyme characteristics, to establish the cells profiles in anticipation of a database of cells for research use. Both Nelson-Rees and Peterson had come to a startling observation: all the cell stocks in the Soviet batch were all human and all from a female. Peterson had furthermore discovered an identifying and unique enzyme that was apparent in *all* of the samples – a highly improbable situation if the cell samples had indeed come

from different sources. The finding was further backed up by Wade Parks, an eminent Virologist.

Nelson-Rees was certain that these cells came from the same source and that he knew who that source was (Gold, 1986, pp. 99-101). Over the coming years Nelson-Rees would identify over 90 listed cell stocks originally thought to be of various origins that were in fact HeLa in origin (Tobin & Duscheck, 2005). This had undermined years of research in which scientists had come to understand that all cancer cells were significantly similar to each other. However, it was revealed that cancer cells are quite different when their different origins were observed. There was significant resistance to Nelson-Rees's research (Gold, 1986, pp. 115-118) – perhaps by acknowledging the issue of a similar cell origin over large ranges of previously considered different origin cell stock, expensive and valuable research would need to be reconsidered, possibly discarded.

This was not the first concern reported about cell line contamination with reports dating back to 1962 confirming that the rationale behind the USA's national database for cell lines was in fact this awareness of contaminated cell lines. In 1966, geneticist Stanley Gartler proclaimed he had tested 18 cultures and had found them all to share similar profile characteristics of the HeLa cell line (Landecker, 1997, p. 8). What this story about contamination does certainly indicate is that the contamination of other stocks by the HeLa cell line was worldwide. While it is stated in multiple texts that the reason behind the prolific nature of the HeLa cells found in other stocks was due to the cells virulency alone, it could also be argued that tissue culture techniques were perhaps not as well executed as they are today. For example, the problem of contamination was reportedly found as early as 1958 by L. Corriell, who was unaware yet of the implications his discovery held. He found that HeLa cells would be able to carry in the air of a fine mist created from opening a flask of cells, additionally, pipettes were often reused from one cell stock to another (Landecker, 1997, p. 12).

The genetic variation used to identify the HeLa cell line had for the first time in biomedical research into cells, implicated race 'scientifically' into the categorisation of

these cells because the variant was as Gartler stated, “found only in Negroes” (Landecker, 1997, p. 9). Words such as contamination, elusive (eluding detection), overwhelming, monstrous, saboteurs, surreptitious, aggressive, a monster among the pyrex, renegade, and catastrophic, (Gold, 1986, p. 172; Landecker, 1997, p. 12) also entered scientific communication language as scientists sought to express properties of the cell line. These descriptions contradict the supposed objective in early scientific communications to express ‘facts’ and instead reveal that agency is given to these cells (Brodwin, 2000, p. 11). One cannot escape the etymological origins of words like ‘monstrous’ within social and cultural histories, especially when used so dramatically in the context of science. Hannah Landecker (Landecker, 1997) observes on this matter:

Although these words might be used in scientific explanation as though transparent, the [...] terminology such as *immortal*, *double*, aligns with, overlays, and cannot be excised from, a rich historical, etymological, and cultural set of meanings. (p. 3)

These powerful word uses in scientific communication fed the fears of the new era of biomedical research. Words like ‘immortal’ were brought into sharp public view only a few years after Carrel’s exploits, further highlighting the semi-transparency of these multi-layered words.

The fear surrounding the HeLa cells as monstrous still exists today in a strange mixture of reality and irrationality. Even though lab techniques have vastly improved since the 1950s, the fear of flask and subsequent research contamination still prevails. In my own experience, the use of HeLa cells is often relegated to viral labs or separate incubators where cell origin is of importance in the research of those sharing the lab space.

The Hela Cells and the Lacks’ Family Legacy

The HeLa cells had been in use in science for twenty years before the Lacks family ever knew they existed. When Day was contacted by a researcher for additional ‘family testing’ his understanding of the use of the cells was limited. Skloot (CBSNews, 2010) notes that Day’s understanding of the conversation of the HeLa cells at first was

that Henrietta was still alive *in a cell* and being used in medical experiments to which he was horrified. Incarceration was strangely re-enacted in this situation as the rights of Henrietta and her family were waived on her behalf, partly due to the racial injustice of the times and arguably, partly due to the privileging of scientific research outcomes. Again the horrors of the medical experimentation on African American prisoners and slaves were echoed.

Even though the family were eventually informed of the terminologies behind those discussions and had come to understand them better, to this day Henrietta's children still feel wronged by the injustice done to their mother by Johns Hopkins Hospital. They express the distress of not having been asked for permission to take the cells and not being recompensed financially for their prolific use.

The proceeds gained from sales of the HeLa cells are so large they are difficult to estimate. Their prolific use and the insurmountable financial gain from their sales indicate that they can be weighed in the tonnes now (in fact an estimated 50 million metric tonnes) (Skloot, 2000, p. 2) but despite this the family still have no medical insurance. The Lacks family has only recently been donated a headstone (to finally mark Henrietta's unmarked grave) (Skloot, 2010). Finally, most upsetting to them is the fact that she is unrecognised by Johns Hopkins Hospital as having contributed to science in such an inexhaustible and fruitful way. In a recent news report, the Lacks family expressed that they still feel deceived and in fact "raped" by having something so precious taken from them without being asked (CBSNews, 2010).

Many stories of varying depth (though routinely quite brief) about Henrietta and her cells have been written. While some, such as written by Michael Gold, champion the scientists as keepers and guardians of science with Henrietta as a tool for discussion on discovery, others like Hannah Landecker note the complex layered stories of science and culture, in order to open up discourse on issues that scientific discovery leaves in its wake. Stories such as these have undoubtedly complicated the Lacks family's attitude towards inquiries about Henrietta's life (which Skloot indicates in her book). What is certain is that multiple perspectives from science and the humanities of the HeLa cell line and Henrietta Lacks' connection to it exist in complex ways.

When Henrietta died, for example, her death did not register as significant to Gey for other than the fact she could be used again for samples. As he came across her name on the autopsy list, he enlisted the skills of his former lab assistant Mary Kubicek, who had worked on the HeLa cells previously with him, took the cells from Henrietta's body while Gey observed the autopsy (Gold, 1986). Yet again, without the family's consent, Henrietta became a 'source'. In one last act, an unknowing protest of sorts, Henrietta's cancer which had shaken the scientific world through its refusal to stay bottled, had hopefully reminded the Gey laboratory that Henrietta had been more than a source of stock. She had been a woman with a debilitating and terminal cancer, which had progressed through time, past the date of his first encounter with her cells. Time, movement and growth are some of the markers of life which have mockingly prevailed in the story of Henrietta Lacks, well beyond the confines of the petri dish.

Chapter Three

The Hybrid, The Metaphor and The Monster

This chapter sets up a foundation discourse by discussing some key concepts and theories. Such an exploration additionally begins to position the *Hela* and *TAnCL* in a way that readies them for conceptual and metaphorical application in the last section of this research. This chapter contains a review and history of terms and concepts from existing theorists that are useful in providing those foundations. These terms and concepts, such as the hybrid, the use of metaphors in science, society and Biology, and 'the monster', are briefly described in relation to their key aspects as they relate to either Biology and or entities that do not necessarily fit neatly into scientifically pre-determined categories used to typically describe them.

If one is to talk about transgressive lab entities and the importance of their effect on the integrity of categories determined by science, then metaphors that reflect this transgression (namely metaphors of 'monsters') may be able to 'do good work' in the laboratory, Biology and biotechnology – indeed 'science' – as they can be used to emphasise, unpack and refigure scientific discourse. A discussion then, on the theoretical and historical foundational aspects of monsters in science is required. The hybrid and the monster both figure comprehensively throughout this research. I discuss the critical concepts of the hybrid, the metaphor and the monster in this chapter, the latter covering a brief history of teratology, both historical and modern. I include in this, most importantly, theories and concepts such as the abject forces of the monster

as well as contemporary cultural theory on the horror genre, specifically that of Jeffrey Jerome Cohen's *Monster Theory*. This will provide a fundamental foundation with which to approach the premise of the thesis.

The Hybrid

The body is a hybrid category, part cultural and part material, in which interior and exterior are always enfolded, always crossing into each other. The body *in abstracto* might be conceptualized as a Mobius strip, where any motion crosses constantly between inside and outside, undermining the utility of maintaining such frail distinctions. (Cohen, 1999, p. xvii)

Hybrid entities permeate the very institution that is perceived as a system to reduce and purify 'things' into categories through binary distinctions – and hybrids smack of pluralisms rather than binaries. Hybrids sit at the core of the scientific institution (as they are often created or revealed through its technologies and discourses) and are able to disrupt its knowledge system, revealing it as malleable rather than inflexible. The hybrid as a pluralistic entity is at the core of transgressive discourse when talking about bodies in Biology and biotechnology (as these hybrids are often revealed or created through technologies). While an avoidance of the hybrid as a category alternative is desired (why simply replace a problematic use of categories with another) its more general use can be considered as a term of crossovers – a descriptor for bodies and entities that sit in multiple categories; hybrid here, indicates entities that are extant in continuously shifting (and layered) loci.

The hybrid is most relevant in the subject of biology. Bruno Latour speaks of the process of purification and reduction within the sciences but highlights the implication of hybridisation and transformation also *within* scientific knowledge construction. There is no possibility for a simplistic, reduced and objective gaze *upon* science (see (Haraway, 1991, pp. 578-580)) but rather of complex intertwining threads of seeing and (understanding) knowing. Latour is also primarily concerned with the construction and enactment of scientific knowledges. Latour (Gram-Hanssen, 1996; Paulson, 2001, p. 19) argues that 'nature' and 'culture' are not givens, but are conceived by modern society and science as separate, and that this is reinforced through scientific practices. For Latour, the nature/culture conflict is illustrated by two conflicting practices typifying most sciences: translation and purification (Waldby, 2000,

p. 44). Purification is scientific undertaking in which a definition is sought as to what is human and what is not. This is in conflict with the more recent scientific practice of translation which seeks to hybridise nature and culture through the classification of new beings joining nature and culture (Latour, 2012 [1993]; Waldby, 2000, p. 30). While some sciences champion the declaration that all living creatures share the same building blocks for DNA (translation) there is, however, the contradictory compulsion to use DNA to determine *differences* between the human and nonhuman, which is an act of purification. The severance of science from society, confirming its status as bearer of truth, is inconsistent with its production of the hybrid through the language of *translation*, which is a transformation of information rather than 'pure' dissemination of information (Gram-Hanssen, 1996; Latour, 2012 [1993]). This is echoed in current discourses evidenced in such areas as art and ethics on the subject of biotechnology, whereby the practices and methods adopted in biotechnology are produced in order to reduce and define bodies as materials.

This sits in conflict with our complex understanding of our hybrid self and identity in the humanities. The hybrid, in Latour's definition, is anything that does not exist as pure human or purely nonhuman and because of the practices of translation, this represents just about everyone and everything. So it stands to reason that these hybrids are the very creatures which threaten the systems of purification within science (Gram-Hanssen, 1996).

Latour (Waldby, 2000, p. 45) implies that if just about everything created through contemporary techno-science can be considered as hybrid then purification does not have lasting integrity in modern science. The very existence of hybrids makes it impossible to continue the claim *and* the denial that these distinctions exist (Waldby, 2000, p. 45). Science studies face the problem that the hybrid, by its very nature, is *indefinable* much in the same way that the monster as a hybrid space occupier cannot be defined, or it runs the risk of losing its power to challenge. It is here that the metaphor becomes an important aspect of unpacking the complexities of these systems of knowing.

Metaphors

Metaphors are the heavy implements that get the job done, albeit with some collateral damage (just like that). (Scharf, 2013)

The metaphor as a teaching tool has been traditionally used for the purpose of understanding complex concepts (see Gentner & Jeziorski, Giles and Scharf (Gentner & Jeziorski, 1993; Giles, 2008; 2013)). While metaphors in science can be reductive, limiting, and often simplifying the complex, they can also act as freeing and complicating, particularly through cultural and social studies applications. Science itself hints at this potential usage as T.D Giles (2008, p. 2) notes in his book *Motives for Metaphor in Scientific and Technical Communication* “Scientific metaphors are certainly further evidence of the social nature of science”, citing Kuhn’s position that the sciences are after all socially constructed.

Metaphors, particularly when used in Science and Technology Studies (STS) or Feminist Science Studies (FSS), can act as a lens to look through at a structure, concern or issue, illuminating it in more *constructive* ways – ‘constructive’ here means ways which build upon existing structures, rather than solely reducing them to understandable, but overly simplified concepts (see also Xavier de Donato Rodríguez and Alfonso Arroyo Santos (2011, p. 84) on metaphors to create new hypothesis). The metaphor here allows us to talk about ideologies while freeing up our language, associations and connections, making for playful experiments performed on a subject without having to speak in inflexible principles. Metaphors by their very nature implicate “complex wholes and complex processes” (Haraway & Goodeve, 2000, p. 50) in a way that enables an appropriately complex lens which *resists* an easy submission to reductionism. Using a metaphor to highlight inconsistencies in a process, by its nature, also implicates a complexity rather than reduction; *its usefulness is as good as its messiness*.

FSS and STS apply the use of metaphors to expose inconsistencies, unearth entrenched and embedded scientific metaphors, and highlight points of scientific contest within science. Inconsistencies can also be revealed through an examination of the use of metaphors within science. For example, FSS practitioner Bonnie Spanier’s earlier and instrumental work on the concerns of scientific and biological metaphors

reveals that they are often arbitrarily assigned, and as such misused, as in the instances of bacteria being assigned as male or female, or macromolecules being subject to metaphors of sex (Spanier, 1995, p. 96). She also reveals metaphors of oppression and dominance of production in science through the use of metaphors of 'the factory' (Spanier, 1995, p. 14) assigned to systems of development. These kinds of applications of the metaphor are examples of how scientific knowledge is shaped by those who are a part of the construction of these knowledges.

Spanier, through her emphasis on the use of social and gendered metaphors in science, and Haraway through her exposure of how stories are gendered in primatology for example, show how much designations of race, gender and class to macromolecules, bacteria and bodies might affect those that such metaphors implicate. FSS theorists (including Spanier, Haraway and Weasel) suggest, however, that this is precisely the reason why the application of *new* and re-complicating metaphors of inclusion, complexity and hybridity might just make room for new ways of understanding the knowledge that is informed by, and informs, our society, and hopefully, in turn, affect it in inclusive, positive and interesting ways. Spanier (1995) discusses how she was encouraged by Teresa de Laurites' suggestion that,

one must be willing 'to begin an argument', and so formulate questions that will redefine the context, displace the terms of the metaphors, and make up new ones. (p. 9)

The metaphor can be seen as both having the potential to reduce concepts and create, or make, complex new ones. Additionally, in both instances, it has the potential to illuminate complex issues. How it is approached and in what context it is approached can determine which path its usefulness will take – as an analogical simplification or as a creative and 'constructing' argument. One of the most infamous uses of metaphors to start a constructive argument is Haraway's cyborg.

The 'Cyborg' Metaphor

...my cyborg myth is about transgressed boundaries, potent fusions, and dangerous possibilities which progressive people might explore as one part of needed political work. (Haraway, 1991)

Donna Haraway, as a key figure of feminist science studies, is most notably known for her essay 'A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century'. She uses the cyborg metaphor as a pluralistic, post-modern human-entity (Haraway, 1991, p. 155) which highlights the construction of knowledges, particularly those that are centred on biology and gender. The cyborg is still the primary metaphor for biological discourse that is used in various contemporary STS and FSS theories. Anneke Smelik and Nina Lykke (2008) describe the cyborg metaphor as a significant FSS figurehead that "suggested a material and semiotic dissolution of the boundaries between organism and machine" (p. x). Even though Haraway has gone on to adopt and utilise multiple other metaphors, the cyborg remains the resolute metaphor of a technologized, pluralistic hybrid that highlights the construction of binary distinctions within *technology* discourse and creates new ways of reading the "technologically mediated body". This exemplifies the argument that reductive scientific metaphors can be used constructively in cultural discourse. Peta Cook (2004) observes this in her paper "The Modernistic Posthuman Prophecy of Donna Haraway":

...despite technological innovations, these oppressive legacies can continue to influence the framework of 'new' understandings. In this fashion, cyborg militaristic origins have been influential upon the contemporary cyborg and thus, paradoxically, Haraway's cyborg can both overcome and reinforce bodily-based dichotomies. (p. 2)

The hybrid nature of the cyborg – in Haraway's hands – rejects singular descriptions and singular sources of knowledge. Haraway discusses in her manifesto the pluralistic nature of the cyborg as both animal and machine, of both fanciful and natural worlds. She notes its multiplicity of existence by citing examples in science fiction literature, internet culture and bodies of multiplicity (technology/biology) in medical science. Bell, Purcell, Seabrook and Whyte (2007) in their supplemental text "The Cyborg Metaphor: a way of understanding the world", summarise cyborgs as:

1. a cybernetic organism (a communication system) (*A Manifesto For Cyborgs* 149)
2. a creature of social reality and fiction (Ibid.)
3. a kind of disassembled and reassembled, post-modern collective and personal self (163)

4. a partial, ironic, and perverse illegitimacy (151)
5. a chimera (theorized/fabricated hybrids of machine and organism) (150)
6. ether, quintessence (153)

At the core of the cyborg as a metaphor is the concept of nature-culture / naturecultures, which is a neologism that Haraway employs throughout her prolific writings to offer an alternative to Western masculinist thought where nature and culture are posited in a binary relation. Haraway subverts the concept of the traditional positioning of nature and culture as oppositional, and asks us to consider it instead as “natureculture” – a pluralistic opportunity. Nature and culture as binary distinctions are revealed by Haraway as exemplifications of scientific ‘truths’ in which nature is determined by science to sit aside from culture. It is through the concept of naturecultures (of which Haraway advises there are many) that what counts as nature is revealed as being determined *by cultures* (Simancas, 2011).

Quite radically, at the time of its publication in 1985, the cyborg metaphor also embraced the concept of embodied technology as a way of critically approaching the concept of the ‘natural’ body. The understanding of constructed knowledges of the body was reinforced in the discourse of nature/culture or naturecultures through a recognisable transgression of what is considered to be *of nature*. Technology is emphasised in the imagery used to illustrate Haraway’s concept of the cyborg and natureculture.

The artwork *Cyborg* by Lynn Randolph (1989) is unable to be reproduced here due to potential copyright restrictions.
Cyborg can instead be accessed directly via http://www.lynnrandolph.com/images/22_lg.jpg

Fig. 6. *Cyborg*, Lynn Randolph 1995 (Randolph, 1989)

The artwork *Transfusions* by Lynn Randolph (1995) is unable to be reproduced here due to potential copyright restrictions.
Transfusions can instead be accessed directly via http://www.lynnrandolph.com/images/14_lg.jpg

Fig. 7. *Transfusions*, Lynn Randolph 1995 (Randolph, 1995)

Art is utilised by Haraway as another way of envisioning these concepts, recognising the value that artistic conceptualisation has in rereading science. Haraway (Haraway, n.d) explains:

Prints of Randolph's paintings appear in my books not as illustrations but as parts of arguments – as sites of meditation, dense feeling, and political reflection ... her paintings inhabit the dreams and nightmares of technoscientific culture to interrogate its stories, to taste its pleasures and dangers, to remember and recollect specific bodies.

The woman featured in the iconic image for the cyborg is described by the artist Lynn Randolph as a “human-computer/artist/writer/shamans/scientist” (Randolph, 2009). Through the cyborg’s plurality along with its technologically mediated hybridisation, notions of “natural truths” (Bell et al., 2007) such as gendered affinities, are renounced, and the connectedness of women thus considered as more amenable to that of alternative ‘kinships’, rather than connectedness as a result of identity through biological construction.¹² Haraway points out that these knowledges can also consist of technologies employed and integrated within the body, or within the social system of the body. In this respect, the cyborg is seen as a hybrid entity that embodies (and embraces) both artificiality and naturalness, social reality and fiction; a mechanism for understanding difference as well as finding commonality and kinship beyond that of biology, in particular in gendered bodies. The proposition of employing the technological in this metaphor is that this technological conception within the ‘body’ as both social and biological breaks down the dualistic history of Western thinking. Dualisms of self/other, human/nonhuman and so on, can be seen as no longer applicable. Technology and how we use it has rendered these dualisms inept as qualifiers for ‘being’. Haraway (1991, p. 161) famously mapped out the language of this transformative approach which exemplifies this challenge to Western thinking for example (an excerpt from the full chart):

¹² Kinship figures heavily in Haraway’s subsequent works in which she embraces the concept of otherness. In particular she draws upon other species as inclusive counterparts in social history and construction, rather than excluded elements to be categorised and shifted to the boundaries of society.

1989 chart

Representation	Simulation
Bourgeois novel	Science fiction
Realism and modernism	Postmodernism
Organism	Biotic component, code

Haraway (1991) states that the “Cyborg imagery can suggest a way out of the maze of dualisms in which we have explained our bodies and our tools to ourselves”. (p. 181)

The cyborg was essentially the first and most lasting metaphor which has helped us to think through the construction of scientific categorisation and start exploring the blurring of boundaries which might constitute an embraced acceptance of other possibly hybrid configurations of kinfolk and technology into our lives. It has, however, been appropriated by theorists bent on exploring specifically the literal technologically mediated body. Haraway’s work does not present itself as a literal treatment of technology, but rather as a discussion embracing the real and the social body. It is this appropriation that has more recently rendered the metaphor as a foundational ‘text’ – a palimpsest of sorts as the original use has been somewhat degraded by its new, literal use. It does, however, serve as a model for a creative metaphor (rather than a usable metaphor) for this thesis.

The 'Cat's Cradle' Metaphor

The notion of pluralism is utilised extensively in Haraway's subsequent writings as she embraces the complexity of intersections between categories, methodologies and readings. She has gone on to employ varying metaphors such as the game of cat's cradle to illustrate these complexities but also to exemplify the concept of 'implosions' which can be untangled.

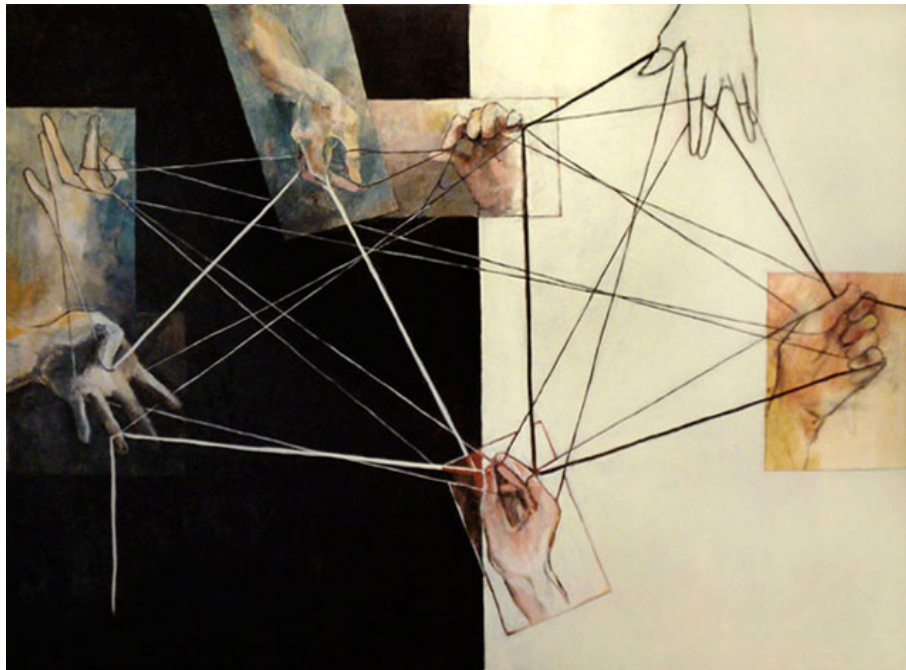


Fig. 8. Cat's Cradle/String Theory, © Copyright 2015 Baila Goldenthal (Goldenthal, 2008)

The act of untangling is not used so the concepts can be reduced (or to establish categories and definitions), but rather to illustrate 'moments' in the ever changing web of connections and intersections. Moments of connections and intersections are untangled or 'pulled out' and then allowed to mutate and tangle back up again – essentially pulling out a string momentarily so anomalies, connections and intersections can be observed, and allowing it to spring back into the entanglement so that the string in context is understood. Sometimes noted of Haraway's work is her contradictory, prose laden nature which is not seen as a critique but rather as a form of art (Cartmill, 1991, p. 67). Her prose, however, is directly demonstrative of her cat's cradle approach, describing the necessity of the complication of constructed and applied

knowledges as messy, mutating, and *unfixed*. It can be seen as a way of embracing an approach of cultural and social inclusion through entanglement, as new possibilities and configurations through new perspectives of us and those we share the world with, are considered. Haraway (1991) comments:

...a slightly perverse shift of perspective might better enable us to contest for meanings, as well as for other forms of power and pleasure in technologically mediated societies.

The Monstrous

Lab entities, if hybrid, complex, pluralistic and transgressive, are analogous with the monstrous. Monsters may in turn act as pervasive and useful metaphors to *reveal* entities that may appear to work from within science but also sit in contention to its doctrines of rejecting or attempting to affix those that threaten to be marginal. It is important then to consider the monstrous as biological and/or a popular culture oriented entity. It is for these reasons that I include a brief history and positioning of teratology (the medical study of biological abnormalities) as it was linked with early perceptions of biological abnormalities as 'monstrous' which raised issues for the scientific establishment and cultural understanding. I address this as a foundational (and historical) position from which to emphasise not only the connections to Biology, the cultural aspects of the monster embodied, but also how the cultural nature of the monstrous was first activated through early discourse on abnormal biology. *Classical* teratology is the first area of interrogation in this chapter as a collapsing of religious and scientific readings applied to bodies that did not comply with the perceived physical (and arguably social) standards of the time. It is important to consider this aspect of the history of 'monsters' because even though this was eventually challenged Francis Bacon (1561-1626) in the pivotal text *Advancement Of Learning: Novum Organum : New Atlantis*, which largely extricated religion from the discourse on material bodies, such distinctions still manage to creep into contemporary discourse in biotechnology. Bacon's text ushered in an era of modern teratology which I also discuss briefly, assisting in the identification of a shift in biomedical thinking.

This shift, while solving the problem of religious thinking upon reading the body in Biology, does not allow for a *critical* discussion of the application of the concept of

the 'monster' (no matter how subtle they are in modernity) on such readings either way. There is a large body of discourse on the subject of the monster which covers a vast range of fields. Very few of these address, even superficially, biotechnology and the pop culture monster. For this, I employ "Monster Culture (Seven Theses)" (*Seven Theses*) by Jeffrey Jerome Cohen (1996) to bridge the gap between the applications of metaphor from within science to the productive use of the metaphor in the social sciences. This use may expose entrenched scientific use of the monster metaphor and re-complicate the discourses of reading body. While *Seven Theses* is a generalised collection of concepts on monsters in general) it also specifically establishes cultural characteristics of the monster applicable to popular culture in particular.

Teratologies

From their ontological or taxonomical origins, discourses of the monster have prevailed throughout political, scientific and religious histories. There are two main areas of the study of monsters: the emerging field of cultural based theory on monsters and the more historical field of teratological investigations. Within teratology are situated two main eras of classical teratology and modern teratology, both of which I discuss here.

Classical Teratology

Classical teratology covers many streams of inquiry from religion and nature to the fictional, and is most widely known as the study of the symbolism of bodily anomalies that are physically manifested, which prevailed throughout classical history. Modern teratology is firmly situated in scientific medical studies (even though it originated in classical teratology in the 19th century) and specifically describes the study of biological deformations. Historically, classical Teratology does not reflect a perceived difference between 'real' abnormalities or imagined ones (NYAM, 2013).

Teratology arose out of an interest in the 'monstrous'. Teratological discourse adorned historical texts and images dating from 1 BC onwards. Such descriptions came to include anything that was of a visually unusual or unknown composition.

The monster, in classical teratological history, is a binary distinction representing anything that does not appear to be human – it is simply considered to be ‘not human’ (Hanafi, 2000, p. 2).

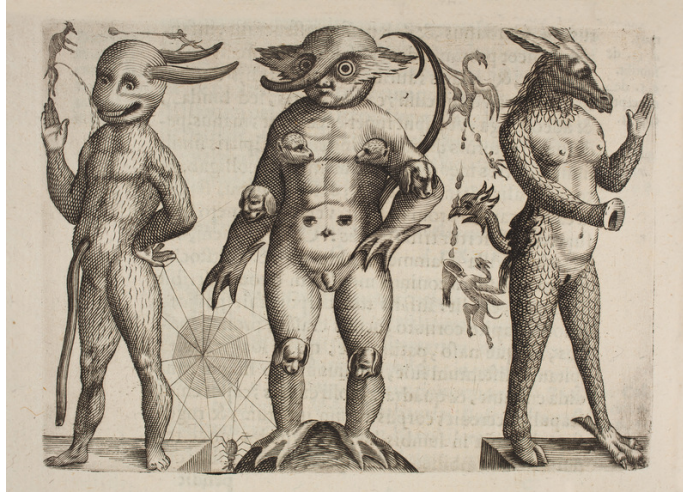


Fig. 9. *Three monsters*, *De Monstrorum Natura, Caussis, et Differentis* Artist unknown, 1634 (Natura, 1577-1657). Image courtesy of Hagströmer Library, Karolinska Institutet, Stockholm, Sweden.

Monsters in the context of teratology appear to begin in ancient Greece and Rome where accounts were written of deformed babies and their connection to impending disasters called “Portents” (Barrow, 1977, p. 18). Early Greek and Roman definitions were interpreted through the philosophical interests of the time and included the languages of science, ethnography and cosmology.

This classical view of the monstrous was adopted well into the 16th century where it was eventually complicated further by the arrival of Christianity. These ‘creatures’, interpreted through religion, were seen as divine warnings (Barrow, 1977, p. 18). The monster, (a term originating during this time from the latin verb “monstrare” – to show or demonstrate (Knoppers & Landes, 2004, p. 231), or “monstrum” from the word monere – to warn (Hanafi, 2000, p. 3), ultimately represented God’s will, power or displeasure through the subversion of the divine form; that of God’s image being “man”. Such creatures were called “prodigies” (Hanafi, 2000, p. 13).

During the 16th and 17th centuries, the study of monsters was most prevalent with many texts being written on the subject. These texts were disseminated through the texts of science giving credibility to such definitions, even though such definitions and descriptions combine elements and readings from both science and religion. With the advent of more accessible printing methods, these books were adopted as stories for the wealthy, thereby perpetuating the monster as a popular object of imagination and speculation (Baumgartner & Davis, 2008, p. 133; Teratology, 1998). Additionally, these texts were infused with encounters with monsters as a form of entertainment (Knoppers & Landes, 2004, p. 1) as well as narratives of metaphysical portents adding to the complex positioning of the studies.

Ambroise Paré's (1971 [1573]) 16th century text titled *Des monstres et prodiges* was a collection that described monstrous forms and how they might come to be present in one's life. The publication is a warning against immoral behaviour as it may result in misfortune or birth deformities (Williams, 1996). Paré states:

Monsters are things that appear outside of the course of nature (and are usually signs of some forthcoming misfortune) such as a child who is born with one arm, another who will have two heads and additional members over and above the ordinary. (Hattaway, 2002, p. 694)

The text ultimately represented a parable account of how to live one's life, which is not dissimilar to biblical or religious approaches to morality. We do see a slight shift from the monster as *sign* to the monster as *scientific object*, and then later in contemporary practice as *sociological subject*, but seen in Paré's early text is the monstrous body as a consolidation of religious and scientific views. For example, in Paré's (Pare & Pallister, 1995, p. 2) thirteen analyses of monsters and their possible geneses, monsters were still clearly embedded in a *combination* (through association) of religious, social and medical troubles:

The first is the glory of God.
The second, his wrath.
The third, too greatly a quantity of seed.
The fourth, too little a quantity.
The fifth, the imagination.
The sixth, the narrowness or smallness of the womb.

The seventh, the indecent posture of the mother, as when, being pregnant, she has sat too long with her legs crossed, or pressed against her womb.
The eighth, through a fall, or blows struck against the womb of the mother, being with child.
The ninth, through hereditary or accidental illnesses.
The tenth, through rotten or corrupt seed.
The eleventh, through mixture or mingling of seed.
The twelfth, through the artifice of wicked spital beggars.
The thirteenth, through Demons and Devils.

The symbolism and analysis of these manifestations were eventually contested. Paré's publication became controversial within the scientific establishment as it had come to symbolise an iconographic perception of such forms in a religious-nature context (see (Huet, 2004, p. 129)). The text was actually representative of the inadequacies of *science* to describe and explain these teratological events.

At the close of the 17th century, these definitions and reasoning of how monsters were made were losing their ability to represent anything other than religious fancy. Philosophers such as Francis Bacon appealed for a more inclusive study of such creatures during the 16th century, taking a naturalist approach (Knoppers & Landes, 2004, p. 3).

In the 18th century, *Emblema Vivente* was published revealing that the monster was still seen as a composition of physically disparate 'parts' as well as a composition of religious, political and ethnographic meaning (Knoppers & Landes, 2004, p. 3). Such creatures were at once described as mysterious and essentially metaphysical, exhilarating visitors living among a society with rational men who were interested in such irrational concepts. The monster, even at this time, reveals a blurring of discipline boundaries and further reveals a collapse between the religious/scientific approaches to nature at the time when rationality was beginning to question the speculative approach (Knoppers & Landes, 2004, p. 6). The publication is written empirically, yet the account is far from scientific and does not represent rational thought on the subject (Knoppers & Landes, 2004, p. 6). Francis Bacon (1952), who wrote on the subject in criticism of its irrationality, finally forced a shift by acknowledging in *Advancement of Learning* that such fantasies were archaic and uncondusive to the study of 'nature' through the removal of the metaphysical and the reinforcement of the natural causes

of deformities from the discourse on teratology. In Bacon's text, God had been unmistakably replaced by Nature through the conclusion that such deformities were in fact errors of nature (Williams, 1996).¹³ It was argued by these scientific pioneers in teratology that the previously held perceptions of deformity as monstrous and religious, created many obstacles to what might be discovered of the nature of 'order'. This redefined the way in which the scientific cultures and the public would begin to look at teratology through the perception of deformity as having definable origins within nature, rather than the indefinable 'mysteries' of religion.

Ultimately classical teratology started with a consolidated perspective that the monstrous body was a body that defied 'natural', and therefore, religious design. It soon, with the advancement of science, contended with the tensions created between this view and the desire to understand the body from a more naturalist, less religious positioning. Teratology in science originated from the concept of the monster that was intertwined in social, religious and naturalist cultures. Whilst the issues of viewing deformations as threateningly monstrous objects were somewhat addressed through the shift in perspective towards a more naturalist understanding of the body and reasons for deformities, the social and entertainment aspects of it remain pervasive throughout history. We can see this through the popularity of such events as Gunther Von Hagen's Bodyworks touring exhibitions, the popularity of medical collections seen in the Boerhaave, and the contemporary development of a more ancient reading of monstrosity as seen in popular culture stories and film.

Modern (Medical and Cultural) Teratologies

There are two main areas of what I have designated as 'modern teratology' that are equally fascinating but quite differently focused. The first being a 'medical teratology' referring to a shift in focus from religious portent to difference based on contemporary biological understanding. The second being the much more recent development in which the monster is used as a way to unpack social complexities such as the

¹³ Williams notes that replacing God with nature is not a simple value substitute and rather that it is complex p239

horror-monster phenomenon, the use of it as a metaphor and so on. I call this '*cultural teratology*' as this is the foundation for the use of the word 'monster' throughout this research. I will, however, discuss both, starting with (and continuing from the last section) a very brief introduction to medical teratology following with a stronger focus on cultural teratology.

Medical Teratology

It wasn't until the 19th century that the study of modern Teratology was founded. We see a connection back to the 'othered body' (the body not similar to the self) as a form of entertainment under the guise of knowledge because during the 19th century, a sharp rise in the representation, display and study of monstrous bodies was becoming prevalent.

At the heart of modern teratology is a Bacon-esque view of deformities as 'errors' in the natural order of things. While much more complex and socially embedded than that which is illustrated in modern teratology, Bacon's text still seeks to define and order. Not without its own set of complexities both within science and society, 'deformities', as the axis of modern teratology, exist in scientific examination to help define that which is aside of nature's normal way. Deformities in modern teratology are examined under the guise of *fixing* nature's errors – seeking to either normalise or further marginalise that which we see as 'othered'; *othering cannot be avoided in teratology*. This, coupled with the early desire for this kind of study to provide entertainment for the general public (from autopsies to images and displays), shows a foundation for a social intersection between medicine, biological knowledge and the social.

With the development of a greater social awareness about 'difference', a more contemporary understanding of teratology has seen a shift in the entertainment value of difference for a more medicalised focus on what is considered to be a sort of clinical abnormal development studies (Teratology-Society, 2015). Issues still remain including the discourse surrounding disability and acceptance of difference rather than the eradication of it (implicating that difference is somehow 'bad') and the increasing clinicalisation of difference when arguably a more social and cultural discourse is

needed for positive change that can affect the lives of those who live with developmental differences.

Cultural Teratology

Modern teratology generated critical theories relating to how and why we approach the monstrous, the popular manifestations of the monster, and finally why indeed we are even interested in the idea of the monster. Most notably within this context is Cohen's (1996) *Seven Theses*. What makes Cohen's text pivotal to any research into the horror or monster genres is that he recognises the monster as a cultural symbol which indicates that it has a *temporal locus within culture*. According to Cohen (1996), the monster is "pure culture" (p. 4) because it presents in relation to a particular time, signalling cultural moments of significance and perhaps even paralleling these relationships with its traits.

Cohen skilfully adopts these 'theses' as proposals for the application of a monster to its place in time. These theses consist of discussions on the monster as *cultural body*, its *ability to escape*, its catalytic position in relation to *category crisis, difference*, its position at *the borders of the possible, fear/desire*, and *threshold of potentials* (Cohen, 1996). Each thesis should, theoretically, be able to be applied to any monster to discuss what it signifies about a particular time and culture, rendering the text as a ground-breaking 'key' to unlocking 'monster theory' as it is found within our culture. I examine each of these theses briefly indicating the key aspects that have potential for their particular application within the context of my research. These explanations are extrapolated for my own purposes but build upon Cohen's descriptions (headings are verbatim and in italics from *Seven Theses* (Cohen, 1996, pp. 3-25)):

"The monsters body is a cultural body." The monster appears at a specific time in culture and always at a time of its disruption. It is an entity that begs interrogation. It always warns us of something.

"The monster always escapes." It defies classification, it changes when needed, it is reused in different ways when needed to warn and highlight different cultural issues.

"The monster is a harbinger of category crisis." The monster refuses categorisation as much as it defies it. It sits ever changing between categories refusing to acquiesce on one particular zone. Because it is ever changing, it can never be fixed in position or defined. It is a danger to the system of ordering.

"The monster dwells at the gates of difference." The monster is othered but also embedded within our culture, reminding us of the arbitrary nature of difference – threatening to destroy the sense of 'self' we rely upon to maintain the order of things.

"The monster polices the borders of the possible." Because of the monster's positioning in between and of multiple zones, it highlights the spaces between – and the way out of binary distinctions.

"Fear of the monster is really a kind of desire." As that which is not 'us' – 'the other' – the monster threatens the safety of the 'self' as intact and normal entity. But, as we also desire to resist marginalisation (we, too, might be there if binary distinctions remain intact), and as we become curious about marginal spaces, it also signals the *desire* to visit such borderlands.

"The monster stands at the threshold." The monster demands that we question its position in an obscure placement of our own doing. It simultaneously asks us how this is possible if such binary distinctions were not enforced to begin with. It stands ready at the borderlands for our visit, possibly even our occupation, but most of all, our interrogation. *It is a demanding signal.*

The monster stands as *a sign of a particular set of cultural anomalies* – it 'becomes' as a result of a particular time and that time's construction or interruption by significant events (which by definition could include historical events, social turmoil, social movements, cultural shifts, acts of war, changes to technology etc.). It acts as a reminder of any inconsistencies in the perceived order of things and demands of us that we consider concerns, issues, and the apparent order of things relating to that time and its construction. It offers us a way through that does not necessarily mean the creation of new borders, but rather the disassemblage of redundant, unfeasible ones into a space of new possibilities devoid of distinctions and inclusive of multiple posi-

tions, states and zones. At the very least, it draws attention to ontological inconsistencies, asking us to consider how and why we constructed and placed such restrictive and distinct zones there in the first place. The monster when applied to science and Biology, is most apt at its lot – science is, after all, where taxonomies are made, continually enforced and most interestingly, revealed through satellite humanities practices, as *paradoxical*.

Monstrous Practices: Using the ‘Monster’

So far I have discussed historical perceptions of the monster in classical teratology and the cultural theory use of the term ‘monster’ in contemporary monster theory. The concept of the monster in general, within a contemporary context, has been widely utilised as a *metaphor* in cultural discourses. Examples include vampires, werewolves, aliens and Frankenstein and their use in cultural theory to discuss important topics such as science, feminism, and marginalisation.¹⁴ These precedents set up a foundation for reading biotechnological entities through the zombie monster. Here I discuss some precedents and potentials for this kind of application within theory.

Nina Lykke and Rosi Braidotti (1996) call upon the monster as metaphor to discuss the divide that is present between knowledge demarcations of science and humanities. They use the metaphor to not only discuss these perceived and constructed divisions, but to also describe people who disregard these zones to work in hybrid ‘spaces’ that can include both systems. This echoes the classical teratological view that monsters are that which do not sit comfortably within prescribed zones of normality. In this respect, Lykke and Braidotti note that monsters are synonymous in many ways with the discourse of the cyborg made famous by Donna Haraway. The differences that Lykke (1996) notes reside with a technological divide whereby the monster is visceral and ‘deviant’ in appearance, and cyborgs undermine “boundaries between

¹⁴ These instances are too numerous to include however consider the works of Chantal Bour-gault du Coudray (2006) *Curse of the Werewolf: Fantasy, Horror and the Beast Within* on the werewolf, Barbara Creed (1993) and *The Monstrous-Feminine: Film, Feminism, Psychoanalysis*, Jenny Wolmark ‘s (1994) *Aliens and Others: Science Fiction, Feminism and Postmodernism* etc.

human, organism and machine" (p. 5). A connection exists between technological bodies *and* monsters, as our increasing interest in the technologies of Biology reconnect cyborg narratives with monstrous overtones through popular culture creations. Many monsters figuring in popular culture include discourses on biotechnology such as zombie themed narratives, which sit in a hybrid space between popular culture monsters/horror and science fiction genres. Lykke and Braidotti both suggest through their texts that *adopting* a monstrous position can be beneficial to discourses surrounding many kinds of boundary disputes. Not only do monsters beneficially provide a way of exploring liberation *beyond* prescribed boundaries, they also provide a way to think *through* prescribed boundaries of practice within the academy. For example, it is through occupying 'the great divide' between science and humanities, that many zones of 'difference' can be connected and interchanged (Verspaget, 2006). These discursive spaces potentially occupied by monsters are currently where such challenges and theories flourish and have the potential to rework in this instance, traditional scientific objectivity. This is important because *TANCL* and the HeLa cell line were encountered during my own occupation of the lab as an artist. I was, for this time, perhaps monstrous myself.

Any interrogations of the defined disciplinary spaces will appear to be monstrous to anyone who endorses, and works within, the delineations between the humanities and science. Such interrogative practices include feminist science studies which exemplifies through its multi positioning, influence and occasional rejection from science, the difficulties and the power of such a position.¹⁵ The danger is, of course, in realigning such a position by normalising it, potentially disrupting and undermining the multi-faceted (and complicated) position of cross disciplinary practice, and thus also its ability to reconfigure or undo fixed zones of practice or understanding. This

¹⁵ For example: feminist science studies is often practiced by women scientists however their discourse is often rejected from scientific journals when such subjects as gender are discussed outside of a biological premise. However, such texts have informed the sciences as such studies and practices are being more widely adopted by scientific practitioners. While the discourses are still separated from the science academy, they are present within its ranks, thus exemplifying the power and the difficulties of true hybrid, monstrous, cross disciplinary research.

is precisely why the position of 'monster' can be so valuable, as it is through the monstrous that a re-writing of the relationships and connections of 'things' beyond prescription are made possible. Additionally, the benefits of monstrous positions reside in the *destabilisation* of zones by operating *within* these spaces. *This is only possible, however, if the monster remains monstrous.* The liminal occupancy in contemporary discourse can be a *powerful location* from which to discuss multiple zones (see (Haraway, 2004, p. 275). We now comfortably call these texts and locations 'interdisciplinary', but in fact what we are describing through this terminology and related actions, is *hybridity*. Even though there are problems associated with attempting to define such creatures (as to define is to re-order, and the monster is ultimately dis-orderly), nonetheless, an understanding of the monster *and the* monstrous at least as a boundary creature, is valuable in examining the construction of the multiple boundaries it crosses.

Exploring the Monster in Relation to Abject Theory

I mentioned earlier in this section that the origins of classical teratology simultaneously inhabit a kind of entertainment zone where such depictions of different bodies were used to amuse and delight. It is no small wonder that the monster is an integral aspect of the entertainment industry because the same observations about comparative, fearful and exciting reactions of biological disruptions found in teratological studies exist in popular cultural expressions of anxieties surrounding these themes. By exploring prohibited locations of the monster from the safety of myth, story or metaphor, we can identify with the powerful emotive motivation of desire (Cohen, 1996, p. 17). It is a desire to escape from the accountability and restrictions we adopt in our culture in everyday life. This kind of escapism is evident in our inclination and desire to investigate the monster through popular culture. The monster offers us the opportunity to project the other which allows us to explore aspects of the boundary thresholds that we would normally steer away from to avoid its infectious qualities of the monstrous (Cohen, 1996). This explains the fascination and curiosity we have in exploring the monstrous despite the dangers it might pose of one's position on either side of the great divide, or any of the boundary laws we might come across. It is therefore useful to discuss the thematic references of both horror and science, firstly

through the theory of these themes, and secondly through the lens of the entertainment industry.

The two film genres in popular culture that represent these anxieties and expressions are the horror film genre and the science fiction genre, most particularly the apocalyptic science fiction sub-genre where both horror and science themes are most typically adopted. Theoretical foundations for the concept of horror are notably observed in the works of French Philosopher Julia Kristeva with her theory on the abject. Kristeva (1982, p. 22) notes that the concept of abject is that it opposes the self and with this opposition challenges the constructed distinction of the self beyond meaning. This place of collapsed meaning is echoed in contemporary texts on the subject of horror, and more precisely, the liminal spaces where monsters occupy; again as Cohen positions this – the monster smashes boundary distinctions. Kristeva notes some pivotal themes in the abject such as the cadaver, and abject experiences of food. Popular culture genres feature particular monsters which utilise these two themes to disarm and disturb the viewer: for example, *the zombie eats flesh and is itself 'undead', or a walking cadaver*.

To explore boundaries through the story of horror or through its dweller – the monster – we are allowed to embark upon a journey of the desire to experience that which is seen as inappropriate or other. Julia Kristeva also notes that in the abject, one can find 'delight' in being confronted with the exploration beyond the boundaries of the clean and proper self (Keltner, 2011). This confrontation could include being confronted by the monster – or the monstrous self. Cohen notes that the mixture of desire and danger guarantees that we will always want to explore, read and question the monstrous.

Margrit Shildrick's discourse on the relationship between vulnerability and monstrosity and its defiance of remaining as purely exterior phenomena, is based heavily

on the writings of Kristeva.¹⁶ Shildrick argues that the potency of the symbolic system in the Western logos is driven by the ‘othering’ of those who do not fit into ‘normative identity’ categories, therefore deeming them as monstrous and dangerous.¹⁷ Shildrick points out that to be monstrous implies that one cannot be placed into any category – including the order of the dangerous. Monsters, she argues, should be considered in our discourses as ‘disruptive’ and ‘transgressive’ rather than dangerous. I argue though that danger is a necessary part of the confrontation process that Kristeva identifies, and a part that horror genres rely on for maximum result. Shildrick draws on the Derridian sense of definition: that when one becomes defined within the normative order of things, such a definition *also* denotes that which is other through the process of distinguishing *from* something else. It is here that both Shildrick and Derrida recognise that the process of defining proclaims both existence and denial of the “absent excluded other” (Shildrick, 2002). Both Latour and Lykke also recognise that to ‘define’ creates all the problems associated with definition and demarcation. This is especially problematic for those who wish to critique binary oppositions. The issue of ‘defining’ presents a problem for interrogative scholars because as they attempt to locate the monstrous, they also run the risk of categorising and therefore ‘de-monstering’ it. As Shildrick notes, one cannot occupy the ‘normalising’ demarcations and become monstrous. The monstrous, as it is delineated by its relativity to the ‘normal’, is reinforced by this process; this is its ‘vulnerable’ nature.

Shildrick (2002) insists that the Western ideal of the clean and proper body as closed, autonomous and consistent is imaginary, but even so, this normative concept is strengthened by the lengths our society will go in order to reinforce the distinctions between what is normal and what is not (with the monstrous being ascribed to that which is abnormal). The ‘normal’ body is contained, consistent and predictable. As long as we do not attempt to define ‘otherness’ as a singularity and an indication of

¹⁶ As Shildrick’s text is a more contemporary interpretation of Kristeva’s *The Powers of Horror: An Essay on Abjection* (Keltner, 2011), and as it includes the application of the abject onto the monster, it will be the focus of this section rather than Kristeva’s work.

¹⁷ The term dangerous is used in this context as something to distance oneself from, rather than in, Cohen’s use of the word which expresses the necessity of danger in order to *become* transgressive.

scientific and cultural 'normality', the monster can be beneficial in that it may transgress and offer a way in which to explore the unfixed nature of such boundaries.

The monstrous body, is hybrid and therefore it cannot be contained within any one distinction (Blocker, 2003, p. 196). Like Lykke's discussion of the monstrous, Cohen comments on the ability of the monster to undermine scientific process and order (Cohen, 1996, p. 7) through its resistance of categorisation inherent in its presence, in its many hybrid, un-containable, un-categorical manifestations. Cohen (Cohen, 1996, p. 7) clarifies that these manifestations are connected to that which is 'outside' but which originates from within – this echoes Kristeva's and Shildrick's leaky body where upon the inside of the body is made accessible and visible from/to the outside.¹⁸ The viscosity of monster in fiction becomes potent in this context and this is where danger, contrary to Shildrick's desire to obfuscate the word, becomes quite significant. Cohen notes that these characteristics of the labelling of the monstrous body can therefore be found in *any exterior connection* such as race, sex, politics, economics and culture. In general, these external connections to 'the within' figure heavily in monster theory, in that any transgression or challenging of the culturally or scientifically placed boundaries surrounding such areas, places the occupier in the position of monstrous body/creature.

As we have seen through this connection between the monstrous and time, the monster is always inscribed in history itself. This is important when reading and retelling stories of Henrietta and the HeLa cell line through the lens of the monster (addressed in chapter nine) because aspects of the story may be revealed as related to the time in which it is told – and where HeLa is referred to as monstrous. The period where the HeLa 'monster' appears for example in the second half of the 20th century also marks the use of atomic power in warfare, resulting in the perceptions of consequence of the bomb in narratives of the period (Hendershot, 1999, p. 127). As the 'primal' figures

¹⁸ French philosopher Julia Kristeva talks about the abject, a characteristic of the monstrous, as the threat of inside permeating the outside. Here, Cohen's discussion of the "Beyond" or "Outside" can be related to Kristeva's discourse on the abject which in turn is connected to the monstrous.

heavily in these accompanying stories usually situated in apocalyptic fiction, where base or 'primal' needs are played out, it signifies the permeation of the monstrous throughout the 20th century, even in thoughts about science and human ethics.

To explore boundaries through the story of horror or through its occupant – the monster – we are allowed to embark upon a journey of the desire to experience that which is seen as (but also useful as) the inappropriate or other. Kristeva also notes that in the abject, one can find 'delight' in being confronted with the exploration beyond the boundaries of the clean and proper self (Keltner) suggesting that to be monstrous is to be exhilarated by the potential of crossing boundaries. Cohen notes that the mixture of desire and danger guarantees that we will always want to explore, read and question the monstrous. In either approach (classical teratology or cultural theory) theorists agree on several main factors about 'monsters'; they signify cultural and political periods, shifts and concerns, and they are disruptive figures that cannot be easily classified and whose presence fundamentally signifies the "mixing of what ought to be kept apart" (Knoppers & Landes, 2004, p. 6) for the order of things to prevail which is also a facade. Monsters are othered and yet flutter precariously into zones we normally use to describe ourselves rendering the supposed demarcation of the other (as not what 'we' are) in the first place, decidedly murky. This is important in our understanding of those that transgress the distinction applied to them through the language of science – whose bodies are read through such lenses.

In this chapter I have discussed some of the theoretical and historical groundings for the concept of the monster, emphasising the complex, layered and multifaceted terminologies of teratology at play. Such languages and histories are inevitably adopted when talking about such things as the HeLa cell line. And when a complex figure such as the monster also shares strong relationships with (and between) religion, science, culture and entertainment (the areas in which the many HeLa stories have been subject to) it signals the need for a more active interrogation in order to disable the potential for reduction and re-categorisation of complicated figures and entities.

This chapter has sought to provide a basis for understanding how we have historically used the monster as a way of describing that which is 'otherly', different, and

that which breaks through classifications. I now explore the concept further in the context of otherly entities such as the HeLa cell line and *TAnCL* by using a particular monster – the zombie. This monster is, as I will reveal in the next few chapters, equally rooted in social and cultural stories, and transgresses some of the classification systems our other entities share. Firstly, before providing details on how these entities intersect, it is wise to establish a more substantial foundation for discussing its intersecting and revealing characteristics. The next section deals with the history of the zombie monster, in particular from its religious origins through to its transformation into the popular culture zombie.

Ultimately, like Spanier's and Haraway's metaphor 'unearthing's', an alternative application of the monstrous onto the objects of study that undoubtedly inform the knowledge of science, might start a good argument, prompt questions that might re-define its context, and ultimately "displace the terms of the metaphors, and make up new ones" (Spanier, 1995, p. 9).

Part Two

The Zombie: Cultural Narratives

Chapter Four: From the Zombi to the Zombie

Chapter Five: The Zombie: Romero's Paradigm

Chapter Six: Shifts in the Paradigm

It started to grow. At the bottom of the flask was a lace-like layer of tissue. I shook it gently – the lace lifted off the bottom of the flask and floated onto the top of the medium stretching and wrinkling in its wake. It was undeniably alive – then I recognised the marker I had written a week earlier “HeLa”, HEnrietta LAcks... The living HeLa lace was undead.

Postscript notes on The Anarchy Cell Line residency.

Synopsis

Having established in part one the various difficulties and complexities raised during various encounters with lab entities, I suggested the need for a boundary-crossing figure to assist in investigating these complexities, and provided a foundation with which to approach this metaphor from. The popular culture figure of the zombie is culturally created and this in combination with its *cultural and scientific* positioning within biotechnology, is the reason I have chosen to employ it as a metaphor for biological and cultural lab entities. Part two now focuses on my chosen metaphor: the

zombie. Part two establishes set of zombie traits for use during part three's deep analysis and application of the zombie metaphor to biological entities.

This section begins with an overview in chapter four of the zombie through its origins in the Vodoun belief system to its appropriation by popular culture exemplifying not only how it has been a religious, cultural and politically figure that has been used throughout history, but how the zombie is made exponentially complex and layered through its relationship to its origins. The popular culture zombie which was somewhat developed from the Vodoun zombi (the Vodoun spelling for it) in early Western film, and then radically mutated beyond it in contemporary Western film, is then explored. Chapter five outlines a 'zombie paradigm' based on the most influential films of the genre using the work of George A. Romero, who is considered the father of the modern zombie (Flaherty, 2010). This section explores the main characteristics of the contemporary zombie. I then proceed in chapter six to explore the instances that occur in Western film where the zombie paradigm shifts or presents elements of interest to the paradigm. This analysis is undertaken so that I can establish a set of appropriate traits that may prove useful in the application of my metaphor that can then be spliced (much in the same way genes are spliced in the lab) into a deeper consideration of the underlying concepts that it challenges and enforces, such as taxonomical assumptions within systems of knowledge. .

Approach

Chapter four maps the zombie through its origins in Vodoun culture to its appropriation in early American popular culture. This examination sets a necessary precedent for a 'spectral' and 'corporeal' figure that is implanted within a complex *cultural setting*.

Chapters five and six explore in more detail the contemporary zombie paradigm. These chapters are film-oriented in their presentation, largely because film has been the most common mode of zombie narrative distribution. It is from films that the general pop culture characteristics of zombie are derived, as such I examine them in detail to derive a set of traits which I then apply to biotechnological-science discourse in part three.

Chapter Four

From the Zomb*i* to the Zomb*ie*

The popular culture zombie can be best understood when its origins are understood. The particular history I relate in this chapter (the history of the Vodoun zombie in science and politics) renders the contemporary zombie as layered and complex rather than singular and linear through its entanglement with history. While there is an apparent linearity to history, there are also associations, connections and layering that remain throughout time. While the two manifestations (the Vodoun zombi and the popular culture zombie) are a result of two separate concerns, they are, however, connected through the process of cultural translation. These connections to the Vodoun zombi simultaneously reveals the popular culture zombie's geneses *and* mutation. This historical map exemplifies the very nature of the complex shifts, uses and similarities and layers in 'zombies' that I utilise later on in part three where they are applied to, and mixed up with, the other entities: the HeLa and *TAnCL*.

There are two main histories associated with the zombie that will be the focus of this chapter: the religious and origins political use of the zombi in Vodoun culture, and the social origins of the popular figure we know today in Western culture, in particular through films and popular culture. The zombi appears in Haiti during the slave trade between the 17th and 19th centuries, while the zombie appears as a new (yet entangled) manifestation in popular films from the early 20th century. It also emerges as its more identifiable contemporary manifestation in the mid-20th century.

Throughout this chapter I will use two distinct spellings of the word zombie to identify which source is being discussed. 'Zombi' will denote the Vodoun spelling and spiritual and political source of the entity, and 'zombie' will identify a representation of the popular culture figure. Even though crossovers still remain between the zombi and the zombie, I endeavour to show respect for the Vodoun belief system and do not claim that the popular culture zombie is the same as the Vodoun zombie.

My approach in this chapter hopefully provides an alternative to the many cultural studies and sociological approaches on the subject of zombies which tend to focus largely upon political-consumerist or psychological issues. There are overlooked aspects that are absent from the current discourse at large, such as consideration of the visceral body, the medical-cultural body, and undeniable biotechnological connections to the zombie, specifically in contemporary zombie narratives. The Vodoun zombi actually exemplifies this nicely as it acts as a parable – a *portent* – highlighting the importance of a continued healthy relationship between the mind and the body.

The Vodoun Zombi

The Vodoun Religion

Vodou is formed from the rites and beliefs of various African cultures combined with other religions such as Catholicism beginning in the slavery period of Haiti in the 1600s. Slaves were garnered from many African settlements and regions, logically resulting in a mixture of African belief systems being actively practiced in Saint-Domingue during the period (Métraux, Charteris, & Mintz, 1972 [1959], p. 25).

Vodou, or *voodoo* as Western culture (unfavourably) spells it, is predominantly seen as a set of cultural practices that is sometimes viewed as a religion.¹⁹ Much of what is

¹⁹ A lack of historical documentation on Vodou's origins has only served to compound the racial typing and Western stereotyping of Vodou as exotic and evil –this has been associated with the spelling "voodoo". For example, from an article in the 1800s: "As generally understood, Voodoo means the persistence, in Hayti, of abominable magic, mysteries, and cannibalism, brought originally by the negroes from Africa." (Farmer, 1992, p. 289).

written about Vodou origins, etymology and practices varies greatly from author to author. This suggests that while there is a very broad consensus amongst anthropologists and cultural theorists as to some aspects of what Vodou is, where it comes from and how it is practiced, it is still to an extent a *concealed* belief system through its early political suppression and its nature as having no set “formula” (Nicholls, 1970, p. 402).

As early as 1685, Vodou was oppressed during Saint-Domingue’s (later to become Haiti) occupation in a forced conversion to Christianity which becomes an event of importance in how the religion becomes viewed and how it is used by the people. A code was introduced called the “Code Noir” whereby it was made illegal for slaves to practice Vodou. To meet the code, conversion to Christianity was required and enforced by slave masters within eight days of a slave’s arrival to the colony (Desmangles, 1990, p. 475). Vodou is thought to have become structured during the slavery period of French occupation as the need for more ways of escaping its horrors were needed (Métraux et al., 1972 [1959], p. 33).

While the sensationalist perception of Vodou as magical, naive and harmful still prevails to this day, it is important to note that fringe practices which advocate the harm of others are in fact shunned within the Vodoun culture which is one of morality, healing and balance. Claudine Michel (Michel, 2007, p. 49) draws upon the works of Karen McCarthy Brown for her unique approach to Haitian objectivity, and reiterates “Vodou as it is lived, as it is incorporated into one's daily existence, as it shapes and "balances" one's psychological, social, and moral world”. Michel (2007) quotes McCarthy Brown:

The Vodou spirits are not models of the well-lived life; rather, they mirror the full range of possibilities inherent in the particular slice of life over which they preside. Failure to understand this had led observers to portray the Vodou spirits as demonic or even to conclude that Vodou is a religion without morality – a serious misconception.

Vodou spirits are larger than life but not other than life. Virtue for both the Iwa and those who serve them is less an inherent character trait than a dynamic state of being that demands ongoing attention and care. (p. 51)

Michel observes that the religion is simply more complex than the observed 'law' of dualistic Christianity, as in Vodou, followers are asked to discover and define personal paths to understanding morality within their own life framework; it is in itself a religion of multiplicity and complex beliefs. Clearly there is an understanding that this is not a religion of immoral freedoms as has been sensationalised by Western media. From many accounts (see Michel (2007), Métraux (1972 [1959])) Vodou is predominantly a religion and culture of healing and 'good will' (morality, balance, healing etc.).

The practices and intentions in Vodou are quite complex and diverse. Michel discusses a multifaceted practice allowing for the grey areas illustrating the complexity of perception, and the subsequent recasting, of morality in Vodou. She also however weighs her observations heavily upon more Christian oriented moral practices in her accounts – through a perspective of Western culture. The complicated density of the practiced internal justice of Vodou is however present within the religion, which Michel does not discuss.

Practices for personal gain are supposedly present within the fringes of Vodou but are shunned when presented without proper cause in the religion. Conjecture and misinformation has been projected onto the religion as a whole. As a result of such practices of justice/gain, Vodou has come to be seen as a result of sorcery, evil or superstition (Nicholls, 1970, p. 40). However, justified response to criminal or social infringements is carefully considered and rarely adopted. Occasional culturally sanctioned justice through Vodou leads to practices of enslavement through spiritual means, such as the case of the making of an astral zombi, as well as through physicality which is generally applied in cases of revenge, greed or desire. Here the type of zombie becomes associated with moral decision making; one is a result of ritualistic consequence or spiritual need, the other through personal gain.

Etymology

The etymology of the word 'zombi' illustrates, above everything, the density of the connections of the Vodoun culture with African history, Haitian history and events, and religious and socio-political practices of the period and its ensuing development.

It is a representation of the belief system itself as complex, pliable and multifaceted. The zombi in Vodoun religion is implicated in many histories. For example, in slave history and the political/liberation history through Jean Zombi and the zombi's fear inspiring presence compounded by the American occupation which echoed the enslavement of the Haitian people yet again. Religious history is present in the zombie through the conception of spirits and deities. The origins of the word will briefly be explored here before interrogating the zombi itself, as it is useful to exemplify early on these roots, connections and complexities.

Etymologically, the word *zombi* is unclear and appears to have multiple origins. Even though a consensus cannot be reached, in a very telling attempt to find a cultural singularity for the term's origins, all of the alleged origins of the word zombi ultimately indicate the *characteristics* of zombiism. One of the many analyses of the origins of the word zombi connects it to the Congolese word "*nzambi*" meaning 'deity' and is thus adopted by Vodoun practitioners to identify the supreme snake god specifically originating in the Bakongo or Kongo region (Ackermann & Gauthier, 1991, p. 468). Nzambi (which shares a very similar phonetic structure) is the god of justice, and as such the etymological meaning of the word zombi can be seen as the logical 'result of divine justice' (Crosley, 2000, p. 93). This echoes some of the accounts of the morality of Vodou to provide justice through alleged zombification when required, even though this act is considered rare. Origins also potentially include *zonbi*, the Creole term (Merriam-Webster, 2013) for the Vodoun zombie, although as it is so self-descriptive, it possibly post-dates the origins. *Jumbie*, a Caribbean descriptor pertaining to a ghost (Steiger, 2010, p. 7), is also a potential aspect of the word's apparent combination of origins. It is also noted that 'zombie' in Martineque also means "evil spirit". The West Indian *duppy* (ghost) and the French *les ombres* meaning 'shadow' (Ackermann & Gauthier, 1991, p. 467) may also be part of the etymological history of the word zombi, considering the Creole/African relationship. Ackermann, who points out in detail the potential etymological origins of the word *and meaning* of zombi, notes the diverse similar sounding and combined readings of the concept of zombi as including words for corpse (*ndzombie* from the Gabon region), body without a soul (*nvumbi* Angola region), and so on (Ackermann & Gauthier, 1991, p. 468). Joan Dayan's (1998, p. 37) research in *Haiti, History and the Gods* connects the word zombi

to the historical account of the character of Jean Zombi. Jean Zombi was noted for his brutality and wild appearance and was considered the symbol of the slave liberation through the massacre of the French Creole of the period (Dayan, 1998, p. 36). In this respect, the legend of Jean Zombi is also potentially responsible for preceding the religious etymology of the Vodoun word for enslaved person/soul: the zombi.

The Zombi

There are two manifestations of the zombi in Vodoun culture that are distinct from each other. One is considered as an *astral* or *spiritual zombi* (a kind of ghost seated in a religious belief system) and the other as the *zombie cadaver* (flesh and blood, walking 'cadaver'). While there are two manifestations of 'flesh' and 'spirit' based zombis that appear in Vodoun lore, typically one is more associated with spiritual beliefs than the other, which is associated with a kind of spiritual/physical slavery. The popular culture zombie exhibits remnants of these two Vodoun incarnations and while they are somewhat paled by the physicality and monstrosity of the zombie, these Vodoun aspects connect the zombie to a political and cultural history exposing its complexity. It is for this reason that the Vodoun zombi is explored in depth here.

The Vodoun zombi is a religious, or spiritually-based, manifestation in religious and cultural belief. The zombi represents the spiritual condition of 'imbalance' between the two souls which are believed to be required for spiritual wholeness. This type of zombi appears as a kind of 'ghost'. The zombi is also represented as a solid/physical body, cadaveric in nature with reduced consciousness, believed to be called back from death to do the bidding of the caller. The enslaved physical zombi is the result of a deliberate act (and re-enactment) of slavery, and is activated via pharmacological compounds to physically affect a living body: the person called upon is compelled to work for the practitioner. Unlike the physical zombi, the astral zombi in Vodou is born of ritual errors or lapses. One results in a spiritual consequence, the other in a physical one.

Alfred Métraux (1972 [1959], p. 281), an ethnologist most noted for his work on the subject of Vodou, describes the zombi as someone whose death is properly recorded and yet appears alive later under the enslavement of a boko (a Vodoun sorcerer). He

also acknowledges the existence of a flesh and blood zombi, although much of his account relies upon anecdotal reports. Wade Davis, an anthropologist, ethnobotanist and famed author of *Serpent and the Rainbow* (Davis, 1985) has based an entire career on the subject of the cadaveric zombie and its pharmacological origins. For Davis, as a pharmacologist, the only zombi worthy of attention is this kind of 'made' flesh and blood zombi which I discuss later.

According to Vodoun beliefs, every person possesses two souls: the *ti-bon-ange* and the *gros-bon-ange*. The *ti-bon-ange* is described as the spirit of the person which may hold moral discourse and act as 'guardian' to the person and their other soul. The *ti-bon-ange* is easily corrupted and held as somewhat separated from the person's thought process. It is also commonly referred to as the "little angel" (Ackermann & Gauthier, 1991, p. 469). The *gros-bon-ange* is described as the "metaphysical double" of a person and is allied with a person's actions in life (Deren, 1970, p. 330). It is described as the "big angel" and is similar to the Christian understanding of the 'soul' as the conscience, emotional and moral actor of the being.

There are two reasons for the creation of the zombi within Vodou which depend on the action of death being either accidental, resulting in a spirit zombi (a soul without a body), or if by creation through potion and spell enactments, a physical or corpse zombi (a body without a soul) (Ackermann & Gauthier, 1991, p. 474). Impressions of spiritual zombi often reside in the exploitation of the fear that is generated by the frightening prospect of the two souls being lost, misguided, or worse – captured. Each of these souls holds a different position within 'the whole' which can be upset by an accidental death, dying a virgin, or incorrect or absent rituals that need to be performed in time for the crossing over of the souls. This would result in the incorrect detachment or crossing over of the *ti-bon-ange*. The creation of a spirit or ghost zombie, or flesh and blood zombie, could ensue after one of these acts. This 'ghost' will harass the living *regarding* his or her tragic death – cemeteries are avoided for this reason within the culture. There are instances, however, where the enslavement of a soul as a spirit zombi through specialised death rituals is consented to by the family and considered necessary for protection of the soul which is entrusted to a hounzan/'hungan' (Vodou priest) ward (Ackermann & Gauthier, 1991, p. 471;

Métraux, 1946, p. 86). In the zombi story within Vodoun belief systems, the family (the 'familial') becomes a central aspect of the moral tale.

As acknowledged, a zombi can also be created intentionally for protection or malice, as well as by accident through mishandling of death rituals: each is viewed as separate phenomenon within the culture. One type of 'made' zombi refers to the "Magic" of fringe Vodoun practices, and is noted as the 'flesh' or 'corpse' zombi which is most commonly embraced in Western culture as the Vodoun zombi standard. *Magic* is a word used in Vodoun anthropological studies (as established by Métraux) to describe "evil intent" (Métraux et al., 1972 [1959], p. 266). It should be repeated, however, that in the Vodoun culture Magic is rejected by the 'proper' or moral facet of the Vodou religion. In some cases, however, the creation of the zombi is sanctioned by the religion as a form of internal cultural punishment for the undertaking of a horrific crime. Again this connection is made with the word and god Nzambi, a supreme god that holds, at its core, the principles of justice (Garraway, 2005, p. 182).

The magically created zombi has been described as a "person from whom a sorcerer has extracted the soul and whom he has thus reduced to slavery. A zombie is to a certain extent a living corpse" (Métraux et al., 1972 [1959], p. 282). Being turned into a zombi by a specialised *Hungan* ("Houngan") priest or *bokor* ("boko") sorcerer is an especially powerful threat because of the deep fear of the misalignment of the souls, resulting in a severely disturbed afterlife that will affect both the person who has passed on and the family of that person who will be disturbed by the zombi. Additionally, a deep seated cultural fear is exploited through the re-enactment of slavery of the zombified person. Most noted references to zombis of Vodou tend to dwell upon the details of the corpse zombi being the body without a soul. The corpse/cadaver/flesh and blood zombi attracts the most attention in literature, medical *and* anthropological accounts, perhaps not only due to the sensationalism of the subject but also to the desire for a more rationally based analysis by "the elite" undertaking studies on the subject (Ackermann & Gauthier, 1991, p. 473).

Creating a zombi within Vodoun religion/culture is morally and politically complex. Anthropological and ethnobotanical studies note that the bokor uses a powder

made of various poisons and psychotropic compounds on the victim to initiate a state of extreme lethargy (Ackermann & Gauthier, 1991, p. 491), resulting in an inability to exercise free will (Davis, 1988, p. 60). It should be noted that many studied cases of zombi victims have been medically and scientifically identified (Littlewood & Douyon, 1997). The psychotropic reaction of the zombi poison is entwined with religious beliefs and practices to create the zombi in the Vodoun culture as the soulless – living-dead. Multiple methods of creating a zombi appear to exist. Methods such as removal of the soul, the person's impending death and subsequent resurrection from a grave, are utilised ritualistically, usually followed by waving the soul under the corpse's body and feeding of a potion (Métraux et al., 1972 [1959], p. 282). Other methods include calling the body from the grave by their name, or by poisoning, resurrection and soul capture (Ackermann & Gauthier, 1991, p. 487; Métraux et al., 1972 [1959], p. 282).

The physical/cadaveric zombi in Vodoun culture is considered un-dead. It includes the act of the person being physically buried and exhumed (Gilliland, 2012) identifying the act with the label of 'un-dead'; there can be no mistaking what the objective is in the act of burial and exhumation within the context of ritual. Davis (1988) notes about one of the most famous accounts of Clairvius Narcisse's zombification in 1980 that the exhumation acts as a kind of rite of passage of death;

The account of Narcisse's reputed resurrection from the grave was a kind of passage rite itself – a perverse inversion of the natural processes of life and death. [Similar 'death' drugs used in many cultures are]... associated with such transitional moments of passage, of initiation and death. (p. 101)

The Vodoun zombi is detached from its balanced souls and cannot reclaim his or her previous position in society, making him or her only a 'partial person' and therefore bearing only a partial life. Thus, the zombi is used by its *master*, who is the keeper of its *ti-bon-ange* soul, for harsh labour or sometimes for deceitful purposes. There are multiple names for zombis that are used for specific purposes all pertaining to their function, for example the *zombi jardin* for zombis that are forced to work in a garden (Ackermann & Gauthier, 1991). Métraux (1972 [1959]) notes:

The spark of life which sorcerers wake in a corpse does not wholly give the dead man back his place in the society of men. A *zombi* remains in that misty zone which divides life from death. He moves, eats, hears what is said to him, even speaks, but he has no memory and no knowledge of his condition. The *zombi* is a beast of burden which his master exploits without mercy, making him work in the fields, weighing him down with labour, whipping him freely and feeding him on meagre, tasteless food. A *zombi's* life is seen in terms which echo the harsh experience of a slave in the old colony of Santo Domingo. (p. 282)

Again, this re-enacts the fate of slaves during the slavery period for harsh labour or dishonest and immoral bidding under the command of an oppressor.

The Zombi in Socio-political Haiti

The *zombi's* reach begins to expand with the appropriation of it within a politically turbulent Haiti. It is here that we begin to see its use broadened and its influence extended into social and cultural aspects of Haitian life, and into how other cultures understand its spiritualism. This point in history begins to reveal how a cultural mutation and transformation took place beyond the primary use of it in religion. This period and the period in which Wade Davis's work appears, are the moments where the *zombi* is transformed from the religious figure into a cultural one; the *zombie* is revealed through these instances as a culturally created entity.

Accounts of the history of slavery, invasion, politics and religion in Haiti are numerous and often contradictory. In my own research I have found almost all accounts vary quite significantly from each other. It is worth declaring that my own choices of what to include are at play too. What I find to be at the core of the accounts of Haiti's history (political history in particular) is not necessarily to be understood as a set of well substantiated facts, but rather as a survey of the varied perspectives available. Sometimes perceptions are contaminated with the political need to establish a belief in a way that gains support for a cause or practice. Some accounts are from the perspective of those who were oppressed, or descendants of those who were oppressed, highlighting the brutality and pointlessness of the occupation. The majority of these accounts I have researched are invariably tainted with justifying the occupation. Of particular interest, however, and as an example of the difficulties researchers face in finding 'facts', early historical sources reveal the *belief* that the cultures which were

the primary source for the slave population thought that the white slave collectors and traders took slaves not for labour purposes but instead for food (James, 2005). This cannibalism narrative has been echoed throughout Haiti's history (and indeed in the popular culture zombie). It may have started with this belief that *white people ate black people*. In later years we see *inverted* accounts, with the American military occupants making claims that the native occupants of *Haiti ate American soldiers* (New-York-Times, 1921). The report and subsequent court hearing was based purely on the hearsay of 'surviving' soldiers and was never proven, yet the belief encouraged the prevailing cannibalism stories from then on. This is perhaps where the claims of cannibalism as connected to the *zombi* may have originated in Western culture.

None of these claims have ever been substantiated, and in fact Davis (1988, p. 65) drawing upon the findings of Elsie Clews Parsons, concludes that this belief may have stemmed from misunderstandings about Vodoun perspectives of spiritual transformations from person to animal. The misunderstanding between the two could easily surface when the concept of *exchanging* human for animal flesh is taken literally, as animal flesh in Western culture is understood as the primary source for food. Often, intercultural beliefs form out of cultural misunderstandings and out of the fracturing of cultures – if a culture is not there to bear witness to the 'end of a story', a conclusion is often made without evidence of an outcome and only based on evidence of the event and knowledge available. My conclusions are no exception to this phenomenon, and it is with that caution that I embark upon this section. These claims were played out in Western culture with essentially no opportunity for retort by the culture subjected to it.

It is generally considered that the *zombi* in African culture is primarily the result of the inequitable and horrific treatment during colonization and slavery periods of African and Haitian history (Isichei, 2002, pp. 52,102,107). The power that such acts of slavery could have upon those who were subjected to it includes oppression, exploitation, alienation and the generating of fear through the *visibility* of the 'slave worker'. These states of 'power and powerlessness' (Isichei, 2002, p. 112) through the *zombi* scenario became a symbol of a complex history of colonization and oppression. While this re-enactment was taking place, Haiti's political turmoil and its corresponding

cultural practices (generally known as 'Voodoo') came into the United States (U.S) spotlight from 1915 onward. This was most likely due to the dissemination of information about related political U.S occupation which was declared under the pretext of bringing democracy to Haiti (Fay, 2008, p. 82). In her article, "Dead Subjectivity: White Zombie, Black Baghdad", Jennifer Fay (2008) writes about the connection between zombies and the U.S occupation and stated that the American occupation was:

...[the] most brutal occupation in U.S history [and has] largely disappeared from our discussion of occupation in contemporary times, supplanted by the "successes" of the occupation in postwar Germany and Japan. (p. 86)

The occupation only served to enforce the echoes of the slave trade by continuing the global invisibility and local visibility of oppression. In time, the brutality of the U.S occupation was largely overlooked in favour of other subsequent occupations. Fay also notes that in order for the occupation to be mobile and effective, road works were undertaken and were utilised as part of the local visibility. As a result of the need for increased labour, a redundant Haitian law *allowing forced labour* was subsequently re-introduced, ensuring that the people of Haiti would relive their oppressive history. The workers were chained, at gunpoint, and forced to work on those roads as slaves (Fay, 2008, p. 88).

The U.S occupation of Haiti continued for many years until a senate response to the protests regarding the violent occupation prompted them to withdraw from Haiti during the late 1920s. During this time, the Vodoun religion also attracted global attention and became a fertile ground for renewed interest in anthropological accounts of its practices, often via the media. This unavoidably also introduced fantastical, exoticised accounts of its practices; many, if not all of these accounts, lacked substantiation. As we see in etymology, popular culture and current descriptive accounts of the religion, that the persistence of negative perception of Haiti and its cultural practices *still* remains. Vestiges of that negative view of Vodou can be most easily identified today in definitions of the religion. For example, in the Cambridge Dictionary (CambridgeDictionary, 2013), the common but uninformed understanding of Vodou is still represented in its french-western spelling and through its use of 'magical' and superstition related terminology:

Voodoo (noun/vu.du/)

- a type of religion involving magic and the worship of spirits (= people who cannot be seen), especially common in Haiti
- **informal bad luck:** *They felt as if there was some sort of voodoo on the band, because everything just went wrong.*

At the heart of the Vodoun zombi in relation to its political origins, are the themes of slavery/slave labour, of losing one's identity, with powerlessness persisting to a point of suffering beyond 'death'.

Zombification – A Controversy

The pharmacological aspects of the zombification process as defined by the controversial research of ethnobotanist Wade Davis exemplifies the complex Western perception of the Vodoun religion. Most interestingly, the scrutiny which Davis's research was subjected to reveals the mutational processes at play between the zombi and the zombie through how the subject is depicted within the reactions to his work.

Davis's research was entangled with claims of fraud, substandard research practices and ethnology, but most notably in the context of this research, within this controversy, remnants of cultural perceptions from the political history of Haiti and its oppressors can be observed. Additionally, and most interestingly, the contemporary zombie is used in criticism of Davis's work to undermine his research. The research was, perhaps because of a combination of the word 'zombi' and the potentially flawed data collection utilized by Davis, tinged with the contemporary Western reading of the *zombie*. This presented his work, through the response to it, as fictional.

At first glance, Wade Davis's research into Vodoun ethnobotanicals added weight to the Vodoun claim that the zombi attributes are in fact *physically* manifested. For the first time researchers had heard an academic claim that *zombies* were, in fact, real. Wade Davis produced several research papers on the pharmacological make up of Haitian potions in which he proposed that the attributes of the cadaveric, or corpse, zombi were possible manifestations of poisoning by the zombi powder or potion. He believed this powder contained chemicals prompting catatonic states and attributes similar to those reported by witnesses of zombification (Davis, 1983). The resurrected

corpse zombi is reported from many accounts as having one or many of the following attributes: despondent, 'empty', without free will, no memory, absent gaze, absent breathing (apparent death) and then reanimation and more (Ackermann & Gauthier, 1991, p. 474). This resonates with the Vodoun accounts of the traits of the created physical zombi.

While there are merits to the theory that the zombi powder is responsible for the attributes manifested by corpse zombies, the theory was very heavily disputed (Bourguignon, 1989, p. 496; Dash, 1989, p. 55; Inglis, 2010; Mo, 2007). Other researchers believed the data was highly problematic due to the initial laboratory testing in which the findings were prematurely released. They also believed the data was not consistent as only some, not all, of the powders tested contained Davis's alleged key ingredients (although even the data accounts of this criticism vary). Additionally, records of the ritualistic use of the powder were being inadequately kept. (Booth, 1988, p. 274). Thus the opposing researchers concluded that the application in testing proved to be 'too elusive' (Booth, 1988, p. 276).

*Davis's work was immediately posited in publications as fringe, and in fact, when Booth discussed Davis on the pharmacology of the zombi powder in a respected journal, it was accompanied by an image from Romero's *Night of the Living Dead* thereby relegating it to the realm of fiction (Booth, 1988).*



Fig. 10. *Night of the Living Dead*, clip: as it appears in Booth's critical paper on Davis' research. (Booth, 1988)

The association between the Vodoun zombi and the popular culture zombie is intertwined in the review of Davis's work. It is viewed by Inglis (2010) as a dismissive device, as in the case of Davis's early work in academic publications. The hybridising of these two perceptions however, perhaps eventuated from the early claims of Métraux, and eventually Davis (who undeniably, even though contentiously, adds botanical *-scientific* weight to the claim) that zombis do in fact exist in a *physical form*. There is irrefutably an element of trivialisation at play in the reading of Davis's research, however the association can also be seen as productive to Davis' attempts, conscious or not, to destabilise the dualistic scientific methodological tenets of the academy.



Fig. 11. Image by Gilliland in his article "The science of zombies (well, sort of)" as it appeared in the Science news feature of CosmOnline. (Gilliland, 2012)

The dispute concerning the pharmacological relationship between the zombi powder and zombification within the Vodoun religion, along with the discourse on how such work is read, has only heightened the socio-political examination of the many complex issues involved in Western impressions of 'othered' religions and cultures, and as Davis (1988) notes, the exceeding complexity of cultural phenomenon:

I have tried to emphasize that no cultural phenomenon can be reduced to pharmacology.... I found myself swept into a complex worldview utterly different from my own-one that left me demonstrating less the chemical basis of a popular belief than the psychological and cultural foundations of a chemical event. (p. 287)

Zombi to Zombie

Already, as I have shown, we can correlate many of the main symbolic transfers of the religious and political zombi in Haiti's spiritual belief system to that of the popular culture zombie, such as the concept of cannibalism, suffering and early incarnations of the zombie as enslaved. The American occupation of Haiti in the early 1900s further acted as a colonizing process. This is the period where accusations of native brutality against the American occupants, in particular the previously mentioned accusation of cannibalism against American soldiers in 1921, started to appear. It was after this time that the first real manifestation of the *zombie* appeared. It was in film that this figure made its debut into Western (American) culture. It was called *White Zombie* (Halperin, 1932). Released in 1932 during the seventeenth year of the U.S occupation (Fay, 2008, p. 82), *White Zombie* told the story of a wealthy plantation owner who engages the services of a Vodou bokor to *zombify* and enslave the white female he desires. It was indeed a creation of its time. This movie represented Vodou as satanic and its practices as submerged in evil.

The plantation owner was additionally depicted as a master and slave owner in case audiences did not get the connection to the occupation and the history of slavery. There might have been something to have been said about the connection with slave masters and immorality if it were not for the overall tone of the film, which was exploitative and demonising. Throughout the film, the immorality of the plantation owner is overshadowed somewhat by the script's treatment of the Haitian people as uneducated and exploitable. During the film's opening titles depicting the Vodoun funeral rights, the juxtapositioning of a distanced gaze of the camera (viewer/audience) indicates a view from outside of a culture rather than a shared cultural perspective. United States imperialism during Haiti's occupation is exemplified in this filmic perspective, and implicates Americans as rational and Haitians as irrational and primitive. Tony Williams (1983) points out in his 1983 review of the film that the gaze

appears while the film title is revealed, accompanied by the word “White”. “Zombie” is revealed after tribal sounding drums are introduced in a sensationalist manner connecting ‘white’ to outside gaze and ‘zombie’ to primitive perceptions.

The main actors in the film are racially characterised. The plantation owner, Charles Beaumont, and the young couple in love, Madeline and Neil, who are to be wed, are all white, wealthy, and in positions of social power enjoying many comforts. The characters that are presented as having any association with Vodou, superstition and immorality are presented as Haitians. While Beaumont does not behave morally, his decision to enforce a zombification ritual is suggested and encouraged by a Vodou bokor, suggesting that immoral behaviour is endorsed by Haitians. Madeline (who becomes a zombie as a result of this) is depicted as a blonde, white clothed, ghostly woman who appears pale, listless and shows a lack of will – visually representing the summary of Vodoun zombie fears and as an archetypical Westerner all at once. As Davis (1988, p. 213) notes the fear of becoming a zombi outweighs the fear of being harmed by one in Haitian culture. By hybridising the Haitian fears and Western presence, a powerful political statement is being made – Haiti has been both colonised *and consumed*. The film is a significant and provocative intersection of race, political and gender issues. It foreshadows the discussions on gender, race and power that were to mark the coming decades. The Haitian characters in the film appear to merely be a vehicle for immoral and fantastical behaviour, essentially enslaved for the purpose of rendering the plot as exotic and decadent. The exotic other is clearly at play here as desire, ownership and magic are implemented through the local people of a currently occupied country at the time of the film’s production and release.

The context of Vodou within the horror genre is significant and representative of racism. Adam McGee (2012) observes while discussing the connection of Vodou to horror in the genre through a sort of imagined ‘voodoo’ compared to the actual religion of ‘Vodou’:

voodoo frequently exists as a stand-in for racial and cultural anxieties. As something that is coded as black, presenting voodoo in scenarios that are belittling, denigrating and, most especially, aimed to evoke terror is a way of directing these sentiments at blacks without openly entering into racist discourse. (p. 240)

McGee (2012) also observes, however, that co-opting Vodoun imagery, such as the walls painted with sacred vèvè symbology found in a bathroom of a popular establishment, can also widen the horizon between cultures through exposure:

While it is easy enough to say that the New Orleans example – the use of vèvè to decorate a bathroom – is demeaning to Haitian Vodou, the inclusion of this historical and cultural discourse expands our understanding considerably. It is no longer an isolated incident of defamation, but rather part of a larger discourse using the trope of voodoo to comment on racial anxieties. Moreover, this allows us to understand such signs in a way that does not depend on the intentions of their agents of transmission. (p. 239)

As complex as the history of the zombi and the religion is, so too is the co-opting of it within popular culture. While several films utilising the Vodou theme surfaced after *White Zombie*, the next significant popular culture mutation of the zombie was radically different from that of Halperin's *White Zombie* slave master. George Romero's iconic zombies in his shocking film of the period, *Night of the Living Dead* (Romero, 1968), were inspired by Richard Matheson's novel, *I am Legend* (Matheson, 2007 [1954]) about a vampire society resulting from a post technological warfare plague. Romero's zombies start to connect with some interesting and divergent elements of American culture, somewhat surpassing its historical connection to Haiti. In fact, *Night of the Living Dead* rarely makes any overt reference to Haiti or Vodou – all references are avoided by Romero, by his own account, as he always considered his 'monsters' as ghouls, not 'zombies' – the latter being the name given to them by his audience. If one is to make connections however (and even though Romero denies it, those connections are noticeable) Romero's zombies are *cannibals*, mindless, functionally simplistic, and after resurrection from death, and have very basic primal needs. Romero's film was made directly after a period of unrest in Haiti at a time when Vodou was being placed in the Western spotlight once again. However, Romero's zombies start to shift the existing zombi cannon by adopting the 'home grown' American monster, which is established as aggressive and without any interest in morality. Even though earlier anthropological discussions of the Vodoun zombi suggests that poorly executed attempts to 'wake' one results in fits of violence, the zombi/ie in early horror film is characteristically a listless and subservient body, rather than an immoral and aggressive one.

Zombi Transformations in The U.S: *The Night of the Living Dead*

The zombi/ie in popular culture in the West may have started as a manifestation of past human rights wounds mixed with exoticism, but with the changes in the country's military status, transformations to the zombie were also likely. In *Night of the Living Dead* (Romero, 1968) (NOTLD) we see a further and more significant adaptation of the Vodoun zombi into the contemporary zombie. *NOTLD* interestingly appears a decade after the reign over Haiti of Papa Doc. *NOTLD* has long been associated with the war machine by scholars (Garcia, 2015, pp. 157-158; Rutherford, 2013; Webley, 2015, p. 202).

Papa Doc, which was the popularised name for François Duvalier, was elected as President of Haiti in 1957. As an active ethnologist and doctor in the 1940s, he was vocal about the need for the Haitian people to embrace the Vodoun culture to prevent the religion from being forgotten. During the late 1950s to early 1960s, Duvalier had come under fire from Kennedy's administration for his oppression of the Haitian people. It is during this period that Duvalier's *exploitation* of Vodou was exposed as he claimed responsibility for Kennedy's assassination by means of a curse against Kennedy that he had vocalized earlier (BBC, 1971). This contributed to the Haitian perception of Duvalier as an omnipotent sorcerer. His 30 year reign over Haiti was seen as a dictatorship and was presented as unstoppable through the clever incorporation of Vodoun elements combined with political actions, preying upon the spiritual aspect of the Haitian people (Douglas on Hurbon) (2009, p. 125; DUVALIER, 1989). Arguably, Duvalier's reign of fear only served to encourage Western conjecture about Vodoun practices, encouraging the already held belief in Western culture of Vodou as exotic, powerful and dangerous. Additionally, during this era, of note because of its potential influence on these stories, the political climate in the U.S was intensifying with the cold war, which resulted in the introduction of new approaches to warfare, particularly biological, by the military (Wright, 1985, p. 10). The social climate was also at a heightened level with the media and public concerns of subjects such as the atom bomb, race, gender and national interests. The social and political climate in the United States, as a time of complex and layered 'cultural upheavals' made it culturally amenable to new concerns, and with it, new monsters.

This zombie in *NOTLD* reduces its associations to the magic of the Vodoun culture and now presents itself as a result of the woes of Western technological development, however, religious undertones are still present in the apparent lack of a 'soul' and the symbolic struggle between the spirit and the flesh through the zombie's survival instincts. Romero's zombies at this stage are the dominant inhabitants, or the 'colonisers', of a country town, even though they were clearly once its native inhabitants. They are urbanised – *localised* – dressed in their everyday clothing, they are infectious, and are created by mass communication technology. The beginning of *NOTLD* shows radio waves belting down upon a graveyard. This is quite different to the earlier incarnations of this kind of monster (ghoul or zombie), as it is a mass, and importantly a *technological*, event rather than an individual being targeted by poison or magic.

The origins of the pop culture zombie during this period are technologically updated and co-opted by Western culture. They are not seen as creatures born of religion, but born of the technological machine. Romero (and co-writer John Russo of the initial script) makes a point of reiterating in interviews now, that *NOTLD* was about invasion (Russo, 1985) and what was most frightening to Romero at the time, was invasion not by another culture, but by the neighbours next door – those he trusted (Romero, 2014). The film, while it implicates Western colonisation, shifts from the Vodoun zombi commentary and all the occupational history of invasions of other lands, into a fully flesh and blood act of mass infection, and localised invasion and consumption; it proposed a fear of the transformation of what you know, not a fear of the other and that your next door neighbour can possibly become othered. Perhaps there is a recognition here of the horrors of the U.S.'s own colonisation histories and an application of fear to the West's own backyard in a kind of self-cultural cannibalism, and perhaps a recognition of the fears associated with the implications of technological discovery and its connection to loss of identity.

At first glance these connections between manifestations and mutations of the zombi – zombie appear to be simple, however, they are much more complex. The intricacy of cultural displacement and 'othering' through these diverse and often brutal histo-

ries, and the readings of them in Western culture, superimpose the story of enslavement and body that is at the heart of the zombi/e. This is demonstrated sometimes through simultaneous distancing of these origins (which is also a form of commentary on enslavement) *and* the layering of them in films such as *Revenge of the Zombies* (Sekely, 1943) where enslaving Nazis are in turn enslaved as a zombie army. The story is interestingly situated in Louisiana – a deliberate connection with the ‘exoticism’ of Vodou. This film injects a new culturally hybridised creation process between Vodou and science while illustrating the complexity of the simultaneous denial and connection to the cultural beginnings of slavery-religion paradigm through popular culture. This is where a crossover in popular culture from origins to science begins to reveal itself. However, the political and social complexity of othering exceeds the boundaries of the singularity of the zombies’ appearance in popular Western culture film alone at any given time; zombies and zombis appear throughout popular film history in many forms. The complexity of social history in the cultures that have informed the zombie, challenges the seemingly simplistic appearance of the pop culture zombie, which is never able to be locked down to just one appearance in time in history, but rather makes an appearance that is *prompted* by various social, biotechnological and political upheavals in various periods of contemporary history. It is a reminder of Jeffery Jerome Cohen’s (1996) statement in his *Monster* that “the monster appears at a specific time and place” (p. 4). But the zombie monster isn’t *just about* specific times: it is also about how currency is interwoven *with* histories as this creature in every permeation reminds, recalls and repurposes historical moments, movements and perceptions, no matter how far we attempt to distance it from its origins. Likewise, the notion that a monster appears in a *very particular* time and place potentially oversimplifies the deep and complex histories and readings for the appearance of the zombie, in particular if proper attention is not paid to its origins and mutations. When reading the zombies appearance as a reactionary manifestation to often complex and deeply rooted events, one should take into account the complexity of histories as well as temporal triggers – even if those events appear to be singular and decisive such as the case of the fear of invasion during the cold war and the appearance of Romero’s famous zombie canon in *NOTLD*. Such events are often more complex and reach over stretches of time, reviving old social, political or cultural fears. Essentially, while Cohen notes the particularities of the monster’s presence in a specific

temporal moment, the temporality of the monster is revealed as interwoven and far more temporally complicated, as its presence is always layered with entrenched histories *and* fresh upheavals; it is never only a monster of appearing in times that have a specific currency, it is also a current monster of particularly multifarious histories.

There is no denying that the Vodoun zombi and the pop culture zombie are connected, inspired by stories of the other particularly in the case of the popular culture zombie and its early origins in the exoticism of the Western perspective of Haiti. The two manifestations of the Vodoun zombi and the popular culture zombie, however, must also be carefully considered as discrete entities with a complex relationship. The popular culture zombie is a monster that is enabled for a creative and mutating exploration of cultural discourse and emotion through the safety of the screen, while the Vodoun zombi is socially, culturally and politically loaded with deep rooted ties to a particular cultural history and a religious belief system. However, their relationship is not binary but often rather pluralistic through various markers such as the previously mentioned zombi Nazi's located in Louisiana in *Return of the Zombies*, or the attempts at subjugation of the mutated undead in films like *Resident Evil* (Anderson, 2002) and *Day of the Dead* (Romero, 1985), amongst other contemporary films.

In this chapter, I have illustrated how the transference of zombi to zombie appears first at this juncture in Western popular culture. It appears at the moment in time when the politics of an occupied country were written into the occupying cultures stories or 'myths' of such othered places. Its transformation is prominent in Romero's incarnation of the figure, drawn from the concept of 'ghouls' even though it is rooted in earlier manifestations of exoticism in films like *White Zombie* (Halperin, 1932). I have also, more importantly, demonstrated how the zombi and zombie are connected, how they are saturated with cultural, political, social and technological fears and recollections rendering the zombie as a cultural monster. While many of the historically-embedded characteristics (such as enslavement, religion) of the Vodoun zombi have been veiled in a Western perspective of the figure within popular culture, many

of the components of their construction remain in more subtle ways, such as the religious undertones of resurrection, the political and cultural elements of othering, justice and so on.

The political aspects of the zombi become apparent through the various political narratives (slavery, occupation) and religious governance issues (colonisation and resulting religious conversion) that have intertwined with it throughout Haiti's history. These aspects have been written into the popular culture zombie with characteristics of violence, loss of identity (cultural and personal) and in its early on-screen incarnation's literal associations with slavery.

The zombi in Vodou has underpinned the physicality of the zombie in popular culture with its ghoulish and listless appearance presenting as a version of the former self disposed to violent outbursts. Its association with rising from the undead (either physically or as a 'ghost') is undeniably synonymous with the zombie of popular culture. But more so, while the zombi is present *in* the zombie, the zombie also shows a transformation beyond these origins rendering it as a layered and complex consort of characteristics. These characteristics both link it culturally, politically, and physically to history, *and* show how it is culturally and contemporarily *re-created* in a way that allows for a more complex reading (and use) of it as a metaphor.

Chapter Five

The Zombie: Romero's Paradigm

In this chapter, I outline the paradigm of the popular culture version of the zombie as it currently stands. This provides a foundation for a working zombie metaphor including a list of its traits and characteristics, as well as the challenges it makes to the order of things, and the cultural aspects it highlights. These traits and characteristics are interrogated further in chapters seven and eight. This chapter firstly provides an overview of the core features of post-apocalyptic science fiction (PASF). Zombie narratives generally fall under this genre although with an inclusion of a horror element. I have found it useful to consider the zombie genre as having some synergy with PASF even though it transcends this umbrella genre with abject elements. PASF gives the zombie theme some established weighting and history within related film theory and cultures. I also briefly touch on cognition and the zombie as this is where I have found that most zombie critiques depart from the way in which I employ it.

The primary focus of this chapter is establishing the zombie paradigm. For this I call upon film, in particular those of writer and director, George A. Romero. The filmic zombie, as introduced into modern popular culture by Romero in 1968, is the standard by which zombies, for various reasons, have been compared to one another. While shifts in this paradigm certainly exist (and are embraced), the paradigm still survives. Importantly, this paradigm not only sets the scene for various characteristics that can be overlaid and intertwined quite strikingly with other areas I discuss in

in part three, but it also allows for the persistent observation on how it *shifts* the paradigm as well. This is a significant aspect of this figure as it underpins the reason why it is so unique *and* so useful in these other applicable overlay-able fields.

Geneses of the Zombie: The Screen and Post-Apocalyptic Science Fiction

Stories about ‘zombies’ have connections to a fertile European literary genre in the gothic writings of the early 19th century. Writers of gothic fiction such as Lord Byron, Percy Shelley, Mary Wollstonecraft Shelley and Dr. John Polidori, gave birth to modern popular culture concepts of life after death. The novel *Frankenstein* (or *The Modern Day Prometheus*) (Shelley, 2014 [1818]) draws on contemporary scientific discoveries of galvanism and the myth of the golem (traditionally a Jewish creature, a man made of clay/soil and brought to life). These stories and their variations were adapted to stage and eventually to film, taking them to a wider audience contributing to popular cultural trends. Given that the appropriation of cultural stories and mythologies are commonplace in storytelling, it is not surprising the Vodoun religion combined with the Western perception of it as ‘exotic’, inspired the evolution of the zombi into its present pop culture form much in the same way golem was drawn upon in the development of *Frankenstein*.

It is important to briefly discuss the format through which the zombie travels to its audience (the screen) and its method (the genre) because unlike other modes of zombie narrative, film allows for a visceral connection to a creature which, as undead, has its roots in the concept of ‘stillness (dead)-movement (alive)’ – moving pictures are apt at translating this characteristic. Additionally, the films of this genre (horror/science fiction and zombies) more frequently entrench the biotechnological into its story (the *Resident Evil* (Anderson, 2002) franchises, the early Romero trilogy, *The Walking Dead* (TWD) (Darabont, 2010), *28 Days Later* (Boyle, 2003), *World War Z* (Forster, 2013) etc.). Film, therefore, is a most potent, and arguably the most predominant translator of zombie narratives in contemporary storytelling/culture. In essence, the zombie at its core is visceral and therefore can only be truly ‘appreciated’ *visually and ‘in the moment’*. While Kristeva for example discusses literary examples of the abject thus

inferring that the abject can be adequately presented through literature, nothing quite satisfies our abject curiosity more than being visually confronted with the most abject of creatures: the zombie (via the safety net of the screen of course) (Creed, 1993, p. 10).

Screen representations are arguably the best equipped to represent the most commanding and potent embodiment of the zombie paradigm because their power, in part, resides in visual confrontation. The zombie film, depending on a number of factors including perspectives of both writers and viewers, will fall under multiple core genres. The horror film may be posited as being primarily focused on fear and indicate references to cultural difference, gender, and fear of physical harm (Clover, 1993, p. 213). Science fiction is commonly focused on themes such as the future or the past in relation to technologies and how they impact upon people, with civilisation's demise in emphasis (Gunn & Candelaria, 2005, p. 6). This may also shift radically depending on its relationship to other factors and genres. It may become dystopian, focused on difference, invasion, and assimilation of cultures. There are many possible variations, combinations and commentaries of these and other core genres, and, depending on narrative and relationship, amalgamated specific genre focuses and concerns are possible. The most compelling zombie narratives inevitably fall under one such amalgamated sub-genre: post-apocalyptic science fiction horror. This is where the zombie apocalyptic narrative becomes an interesting subject. When the focus on biotechnological interference and horror comes in to effect; both science and fear are taken to extremes in the zombie narrative.

Often this entails some catalytic event, usually scientific in nature, including the consequences of such an event. This approach to the horror genre, in relation to scientific event and consequence, indicates a relationship to the historical advent of teratological 'portent' whereby an anomaly symbolises some kind of warning about actions and their consequences. Early post-apocalyptic science fiction (hereafter referred to as PASF) was simultaneously dismissed as a kind of extraneous approach to discourse surrounding scientific discovery and "valorised" for its ability to connect with contemporary social issues (McMahon, 2008, p. 273; Wolmark, 1994, p. 81).

Christopher McMahon (2008), quoting Margaret Atwood, identifies five general issues that science fiction explores:

...the consequences of new proposed technologies, the nature and limit of what it means to be human (e.g., cyborgs), the relation of humanity to the universe (using quasi-religious images), the proposed changes in social organization (utopia and dystopia), and the realms of the imagination by taking us boldly and daringly where no one has gone before (e.g., outer-space, inner-space, cyberspace). (p. 274)

However, I am not talking about science fiction alone here, but rather a convergent setting for the zombie narrative which not only includes science at its core, but also embraces the business of fear of personal physical safety through the genre of horror. Atwood correlates apocalyptic scenarios with the representation of “the consequences of new proposed technologies”. While science fiction *may* implicate this, apocalyptic science fiction horror *highlights* it in the most graphic of ways.

McMahon (2008, p. 274) also notes of Atwood’s points that the distance between futuristic perceptions of science fiction and ‘the now’, are collapsing. (McMahon, 2008, p. 274). This indicates that the distances between now and ‘the future’ in apocalyptic science fiction is shrinking. Visual references for example, between now and the future, are reduced in apocalyptic science fiction films like Romero’s *Land of The Dead* (LOTD) (Romero, 2005). The imagery reflecting a not-too distant future connects the viewer to contemporary concerns rather than distanced futuristic technology and cultures. This collapsing of distances between eras through relating the *near* future rather than distant future, emphasizes that such monsters are a product of our time; it renders the immediacy of the consideration of consequences of our technological actions as relatable *and imperative*.

PASF is not only about the event which often brings about the end of society as we know it (actually very little attention is paid to this in most zombie narratives), but it is also about the concept of starting over (Curtis, 2010, p. 2). In fact, the event is usually a forward note in such narratives – in essence, the beginning nearly always starts at the *end* of the ‘world’. The technocrat (one who is surrounded by the technological tools made by them or their own culture), as Aegon J. Specktowsky (2007) notes in

the forward to A.K Otterness' stories, the concept of 'starting over' is often at the heart of such narratives. Specktowsky (2007, p. ii) notes that the end often begins as a result of the infiltration/smothering/overwhelming of their creations as they permeate everyday life. The zombie film almost always begins at, or after, the zombie outbreak, and nearly always ends with the potential for starting over. The zombie film, however, rarely treats this as a positive and permanent transitory action. The 'restart' is small, in some way noting the weight of the consequence through inferring that one can only cope a little more comfortably with the zombie occupation, or that it will be short lived because the outbreak is uncontainable.

Of importance to the connections between zombies and Biology, Specktowsky (2007) remarks that Biology and biotechnology is an included aspect of technocratic behaviour:

And the biological sciences are equally a member of the technocratic society...representing all those fuzzy, quantum improbabilities that the mere degradation of the electronic and digital machines cannot replicate. Post-Apocalyptic science fiction is often brought about by such an originator: "They were the outcome of a series of ingenious biological meddlings – and very likely accidental..." (p. iii)

As early as 1826, Mary Shelley's novel *The Last Man* (Shelley, 2004 Wordsworth Edition) posits Biology within the PASF setting by presenting an apocalyptic story detailing the life of one immune survivor that is left after a plague wipes out humanity. This was further adapted in 1926 by Richard Matheson in his novel *I Am Legend* (Matheson, 2007 [1954]), which in turn inspired Romero's work later on. The advent of PASF films, in particular, become much more prevalent as social concerns arose regarding post war tensions, such as the Hiroshima bomb and its effects (Booker & Thomas, 2009, p. 53). M. Keith Booker and Anne-Marie Thomas (2009, p. 53) discuss Susan Sontag's observations of PASF in the 1950s that PASF often results from the misuse of, or naivety of, the use of biotechnologies. Sontag also observes that these incidences can sometimes also be *solved* in the narrative with such technologies. This is not so true of the zombie genre, as these narratives posit themselves as dystopian in nature, and they often only exhibit short lived utopian moments. For example, in

Romero's later work *Dawn of the Dead* (Romero, 1978), the survivors of a zombie apocalypse take refuge in a mega-mall. The apocalypse creates a consumerist utopia – for a while, until things go wrong. In *TWD*, the CDC, the farmhouse, the town of Woodbury, the prison etc. are welcomed refuges, until things always horribly revert to their dystopian 'norm'.

The PASF genre provides the perfect setting for the zombie to appear, and reappear again through this recurring dystopian vision. If PASF is all about consequences, and our current technological climate is dominated by genetic and biotechnological technologies, then the zombie is the ideal representation of that consequence. The contemporary zombie narrative is born of biotechnological portent – the viral outbreak: the genetic modifications and mutations make this a creature of consequence. The zombie is set in a technocratic society; a setting reflecting social concerns through the inappropriate or naïve use of that technology, and always resulting in an apocalyptic cataclysm or 'end' which is inevitably where the zombie narrative begins. The post-apocalyptic science fiction zombie story requires us to relive these consequence-based fates again and again.

Cognitive Shifts: Humanising the Zombie

While the Romero Zombie arguably remains one of the most potent pop culture representations, it is important to acknowledge that in the early 21st century, there has been a shift to a new subgenre of zombie representation featuring a 'cognitive corpse' as the reanimated 'self'. While these departures are never permanent (they resolve even within the temporal 'blip' of the movie's length), it is important to acknowledge the desire to resolve the problem of the loss of the cognitive 'self' in the zombie because it continually resurfaces in contemporary treatments of the zombie narrative. It is not a lasting trait for the zombie, as cognition as a perceived secure trait of 'humanness' always refuses to be tempered in these narratives. Trying to fix the zombie into a position of being human, simply diminishes its power as a monster; such fixings are always short lived. However, the obstinate presence of cognition in the genre render it worthy of acknowledgment nonetheless.

Zombies that are cognisant in these narratives may be able to speak, remember and recall, or restore certain previous behaviours. This generates a conduit for the re-humanisation of the zombie. While there are elements of this rehumanising shift in the work of George Romero, it is nearly always resolved by the failure of the conduit (cognition) to withstand the process of reduction or demotion to a less complex distinction because the boundary gates between self and other have been opened by that very conduit in the first instance. While this is a solid example of the zombies persistent paradigm shifting characteristic, I focus in this particular chapter on the less cognitive or less 'curable' zombie types, and on the unresolvable representations as I believe this is where the genre is at its most potent. I do still utilise, when advantageous, the cognitive zombie because it highlights a *desire* to resolve the self/other dichotomy (which is more important than actually resolving it). It does this by reinforcing the perceived distance between the self or the other. It should be noted within the context of the genre that the cognitive zombie always fails to retain its stronghold because the collapsing of these distances are what make it so frightening, threatening and powerful.

The cognitive zombie often loses its power to subvert as we more readily identify with it – as it is pulled over towards our perception of self, no matter how flawed that distinction is. One example of this kind of attempt to encourage 'self' identification (and the failures of it) are found in the film *Warm Bodies* (Levine, 2013), a love story between a non-zombie and a zombie who regains his humanity through a latent desire to protect, then love, a young woman with the by-line "He's Still Dead But He's Getting Warmer". This is one of only a few unique examples of cognitive inclusion and on this occasion, the central zombie character has a voice and narrates his own story. While this is quite endearing and innovative, it is not really considered to be typical of the zombie genre. Similar themes, however, have emerged in recent film versions, some adopting a more genre fan base friendly version of cognitive exploration. The satirical zombie love story *Shaun of the Dead* (Wright, 2004) and the finale of the Romero zombie legacies *LOTD* (Romero, 2005), point out the desire to once again address the cognitive deficits of zombies. They possess humour, they require recognition of their rights, and they display traces of human cognition and the human condition as they persistently embody their former lives. Twenty first century zombies

do illustrate a more sympathetic, and in essence, a more recognisably human construct. This is not without criticism, as many fans feel this kind of re-humanising removes these narratives from the notoriously formulaic zombie genre. Humanised zombie narratives are essentially seen as non-serious, 'zombie-esque' features.



Fig. 12. *Warm Bodies*, internet meme (Meme, n.d)

The fans responses can often act as a barometer for trends within the genre. Departures to the paradigm are often judged via enthusiasts. Films that stray too far (try to resolve obscurities or reclassify [humanise] the monsters) are often rejected by the fans. The fans, it should be remembered, did coin the first application of the word 'zombie' to Romero's ghoulish figures in his films (Romero, 2014). Fan responses (names are concealed as requested by the site owner) from the site "Zombies Are Delicious" (Delicious, 2013) comment on *Warm Bodies* (Levine, 2013) likening it to *Twilight* (Hardwicke, 2008) which was considered amongst vampire genre fans to signal the demise of the vampire genre:

JHM: I don't get it. But for them to humanize an undead killing machine is just another way of ruining a perfectly good monster.

AB: Twilight killed vampires for me. Gotta feeling this film is gonna do the same for zombies. I just pray they dont fuckin sparkle.

RM: Zombies should stay dead and be dispatched.

LP: Warm Bodies is making zombies mainstream for little teenagers...Zombies are dead and rotting corpses, Warm Bodies is just a guy with a lot of white

makeup on, like *Twilight*, ruining the monster entirely and making it a mockery.

DS: Stupid. You can't take zombies and make a twilight style movie. It just don't work. Stupid.

There is a consensus amongst the zombie genre fan base that while pushing boundaries in zombie narratives is encouraged, straying from the corpse formula that was most recognisable with the first zombi-zombie departure of George A. Romero's *NOTLD* (Romero, 1968), runs the risk of having the work placed into an alternate genre, losing its power to confront, which I discuss later.

The Zombie Films of George A. Romero

As noted at the beginning of this chapter, the main goal in this section is to establish the various characteristics that generate a paradigm for the zombie. This paradigm is extracted from the zombies of George A. Romero. Romero's zombies can be claimed as the ancestors of the contemporary zombie figure. In Romero's hands, the zombie had become a *mass* of invaders of rotting cannibalistic living dead who had *actually died* and risen from the grave. They did not answer to anyone and they exhibited horrifying, primal needs. There was no deeper departure from the Vodoun zombi slave than Romero's zombies became literal and shed their religious portent in favour of a bio-technological-scientific-military one.²⁰ The Romero zombie is the iconic exemplar for modern zombies. Their characteristics, appearance and context make this the canon from which all zombies have since been derived.

While there are several treatments of the zombie theme by Romero, his four most distinct contributions to the genre are considered here. I cover first in each, a brief introduction noting general key concept and genres that are useful in my analysis. I follow on with a synopsis to chart the narrative so that items of usefulness in establishing the zombie paradigm can be drawn out and discussed in the characteristic

²⁰ Romero's films, while not overtly revealing of the origins of the zombie plague, imply radioactive *or* outer space (in *NOTLD*) origins and are always met with (unsuccessful) military intervention.

analysis sections for each film. Each of these films offers a series of treatments of the zombie figure and context within which various useful core features and elements can be tracked. When combined, these form the zombie paradigm that is applied in chapter nine.

Romero's Undead Quadrilogy: Film One — *Night of the Living Dead*

Romero's ground-breaking film *NOTLD* (Romero, 1968) had purposefully discarded the exotic other perspective of the zombie as Vodoun slave, and represented a sharp cultural departure from the exotic Vodoun zombi in American film history to the modern zombie we know today in popular culture. Romero's zombies shift from the deadpan faced, spiritually entranced, human of the Vodoun curses in previous incarnations of the figure into a literal state of death. The animation of the dead is obviously apparent through the ability to function in basic ways such as being able to walk, groan, kill and eat, but literal death is also apparent, for example, in the visual cues of rotting flesh.

Romero's iconic film focused on the undead bodies which were truly undead; raised from the grave as *rotting*, flesh-eating creatures. Even at the height of its popularity, *NOTLD* was highly criticised for its graphic nature. It has since been included as a selected film in the U.S National Film Registry as a film of historical significance (the irony being, if there ever were a zombie apocalypse, Romero's artistic consideration of it would be one of the surviving films) (Allen, 1999). The registry is intended to include a broad range of films of significance in one or more of the areas of art, history and culture, indicating the significance of *NOTLD's* cultural value (Allen, 1999).

NOTLD implemented ground-breaking cinematic devices into the Western experience of the cinema horror genre, such as the limited vocal work, focus on 'real time' survival action, the inclusion of an African American male cast as the main heroic character, the realism of the monstrous features and actions of the zombies, hand held

low tech camera techniques, harsh lighting, and similar such devices. The film utilises all the creative devices it can to limit the feeling of connectivity to community to instil a sense of separation and societal isolation.

Synopsis

The film starts with Barbara and Johnny taking a long three hour solitary drive through lonesome country roads towards a cemetery to remember the dead, specifically their father. Quickly, the two sibling characters are overrun with pursuants, who are slowly revealed as unusual figures who appear human but have ghoulish like characteristics. It is not immediately apparent that the first pursuant, an elderly gentleman in a suit, is undead, though his drunken-like gait, lack of verbal interaction, location at the cemetery, and desire to catch Barbara with fumbling primal hand grabs starts to ready the viewer for the revelation that these are, in fact, the undead. What is certain at this point is that the pursuant is not 'civilised' or interactive in the same way as Barbara and Johnny.

Overpowered by the pursuant, Johnny's death is implied as he is thrown to the ground hitting his head on a grave. Barbara finds shelter in a nearby farmhouse and the gravity of the situation becomes clearer as she sees more than one pursuant now heading for her location, along with her discovery of a half-eaten corpse inside the farmhouse. All of her pursuants exhibit a slow, clumsy gait and are dressed in an odd mixture of attire. The hero, Ben, enters the scene at this point, as the mass of undead starts to grow and their characteristics become clearer. The bloody, damaged, hard-to-kill figures start to reveal their bodies (and intentions) during an unrelenting onslaught, which keeps Barbara and Ben barricaded in the farmhouse overnight. Ben notes later that he realised he was alone even though there were sixty or so of "those things" surrounding the roadhouse he came from. He makes a point of stating that there was no sign of anything living besides himself.

The emergency radio reporter's voice refers to the pursuants as "murderous assassins" (Romero, 1968) and then as monsters. Through the continual revelation of the pursuants from murderous assassins to flesh wounded cannibals, Romero's zombies

(R-zombies) are finally revealed as monstrous creatures – the officials and an accompanying group that arrive at the end to solve the problem (officers, army), reinforce the zombies as monstrous through their presence in the context of the dominance and annihilation of the ‘other’. The closing scene is not only of the annihilation after the fact through the shooting and burning of the ghoulish corpses, but of the process of it leaving the potential for annihilation to be challenged. It is implied that none of the original survivors of the farmhouse live – their efforts are revealed as futile.

Socio-Political Backdrops

R-zombies appear as those we know, live next to, and have loved enough to bury, but then rise from the grave to immorally and horrifically consume us: they are a domestic, local, ‘next door’ threat. The connection to everyday American society and culture, and thus Western culture, is implicit in these ghouls. They are neighbours, family, friends and local strangers rather than alien or exotic invaders. They wreak havoc on the law and break social, cultural and moral boundaries.

The monstrous nature of Romero’s zombies are reiterated throughout the narrative by the reporter’s voice on the radio, and later by images on the television (carrying on the revelation theme) relating the unfolding news of the discoveries of these once human ghouls. They are continually referred to as having undergone a transformative and mutational shift from human cadaver into “flesh eating ghouls” (Romero, 1968). Part of that transformation is implied as being the result of both radiation and potential disease from wounds created by other zombies. The ultimate transformation takes place when not only many of the central characters in *NOTLD* are taken by the zombies, but when the injured young girl, Karen, who was wounded (the cause is not stated but implied to be the result of the murderous hoards) and looked after by her parents, becomes one of the undead, and then attacks and *eats* her parents. Abject taboos such as the hunting and eating of others are monstrous, murderous behaviours in the film. The aberration of Karen’s transformation is partially suppressed as you never actually see her die, but demonstrated in another in the act of abject behaviour; the killing and opportunistic eating of one’s own parents. Romero’s societal self-devouring to make way for the new society is echoed in this act of the

child devouring her parent. Symbolically, all societal laws are devoured as the previous generation understands them, along with Karen's undead act of cannibalism.

NOTLD emerges in American film history in the aftermath of the cold war and when divisive issues of racism and the Vietnam War were being hotly debated and protested. The original story penned by George Romero and John Russo, was first scripted as an alien invasion (Russo, 1985). There was a conscious decision to shift the invasion focus to a local threat in the form of society from within, turning upon itself. Romero (Harvey, 2008) notes "There's a new society coming in ...devouring the old, and [there's] the old society being unable to process it, not knowing how to deal with it" (p. 59). Revolution figures quite heavily in Romero's approach during a period of active civil rights movements. He repeatedly mentions the word in his many interviews about the film as a driving force behind his curiosity to "see what happens" when a societal revolution occurs (MacReady, n.d; Murray, 2008). Most notably, Romero (Anthony, 2011) states "I also have always liked the monster within idea. I like the zombies being us. Zombies are the blue-collar monsters." Romero's zombies are unquestionably *intra*-societal creatures originating from within rather than from distant lands and places we might find easier to 'other'; the zombie in *NOTLD* is not so easy to distance from the concept of 'us'.

The symbology of the intense localised U.S political and social climate of the period is present in Romero's film, however what is fascinating with this film is its realism, its abject horror and its irrefutably flesh-oriented imagery. As noted previously, imagery becomes very important in post-apocalyptic narrative, and this imagery particularly appropriates both a religious and a biological sensibility. The zombie child eating her parents echoes the consuming of the flesh, symbolised by the consumption of the 'flesh of Christ', represented by holy wafer during Christian mass. The abject nature of this act pervades the integrity of spirituality, social comprehension *and physicality*. The latter is often dismissed as symbolism alone, however the physical act of eating is not only representative, but also powerfully *primal* and confronting – if there were any questions at all if bodies are *explicitly* implicated in discourses of spiritual,

social and material substance of being us (or even being the mutant us) then the zombie puts this matter to rest. The body is revealed as a complex and *connected* material matter to both body and spirit in the zombie paradigm.

Unlike other horror films of its time, the Romero zombie, through its mass onslaught of zombies from all walks of American life, highlights the unyielding nature of death without reason. The historical context for the film was certainly a factor in this approach as it was produced during the persistent tragedies of the ongoing Vietnam War, and followed the assassinations of Martin Luther King Jr and John F. Kennedy (He, 2007). Romero's relentless, ever growing mass of infectious and ravenous zombies appears to never stop. This echoes the sheer volume of war related deaths encountered by the public during the turbulent time the film was produced. William L. Blizek (2009) notes in his discussion of *NOTLD* that it

can be read as providing the new body language, the iconography, the communal rituals, if you will, the disposing of bodies that had been hygienically removed from public view ... to be bringing home the corpses from Vietnam and depositing them on screen in front of us. (p. 319)

There is no sense of relief during this zombie ambush, and it is through this onslaught that Romero makes a statement about the device of death in storytelling, as much as he does about the historical context in which it was produced. Not content to supply people with the hope usually delivered in previous incarnations of horror survival films, Romero makes a point of the hopelessness of resisting the zombie hoard. Romero had unapologetically introduced a deep, hopeless fear of non-foreign invasion and of unrelenting gore into the horror genre.

Romero's Zombie Ideology

The appearance of the Romero zombie was quite ground-breaking at the time. They followed the descriptor 'ghoul' and were presented as such with a monotone face and groaning ghoul-like disposition. R-zombies were visually irrefutably back from the grave and risen from the dead. They are dead in appearance with flat skin tone, blood stains, and "look like they are in a trance and have been attacked by animals" (Romero, 1968), implicating animal based disease and biotechnology, such as rabies.

The open wounds described indicate a destabilising of the clean and proper body (the human body), and imply other abject acts such as infection from bodily fluids. The description becomes more and more graphic as the film progresses along with the revelations of what these people actually are.

Romero's descriptor for them was 'ghoul'; he was aware his creatures stood apart from the previous incarnations as Caribbean Vodoun spiritual slaves. Romero (2014) states:

When I did the first film, I didn't call them zombies. When I did *Night of the Living Dead* I called them ghouls, flesh eaters. To me back then, zombies were just those boys in [the] Caribbean doing the wet-work for Bela Lugosi. So I never thought of them as zombies. I thought they were just back from the dead.

The main goal for Romero was to present these ghouls as having risen from the grave to attack and eat other humans. The pallor, the gait, the rotting flesh are all characteristics of their appearance, communicating this concept. At this time he hadn't understood that the public would start making connections between the zombie as horror figure and the ghouls in his film. Arguably, Romero hadn't also seen the connections he had made between the zombies that had come before his script and what he had created. Romero's fan base implies that he is responsible for the shift from the ghoul to the 'zombie', however it appears to be the fan base itself that has been responsible for making the connection between the two. Kevin Bond (2012), author and zombie fan writes "The film premiered, the public saw a resemblance to the Haitian zombie, and they started calling them zombies." In an interview with Rebecca Murray (2008), Romero reflects that the relationship was generated by the viewers:

I didn't use the word until the second film and that's only because people who were writing about the first film called them zombies. I said, 'Maybe they are in a way...' But to me zombies were separate in the rainbow. They were not even undead; they were just people that were...you blew this s—t up with blowfish powder, which would put someone in a state of suspended animation, and then you get them to do your chores for you. I just thought it was completely different. (p. 2)

Romero himself repeatedly denies having anything to do with the zombie connection and in fact has resisted the connection for some time, although some of his interviews

suggest that he did eventually 'relent' to the label (Savage, 2010). A general resistance still prevails however, as seen in Romero's discussions regarding his most recent cinema release feature film *LOTD*. Romero (Murray, 2008) comments on the ambiguity of these monsters, concluding with a tone of resistance to their description (my emphasis):

I felt this is just too early for anybody to know what they were or to have any sort of identifying moniker for them ... they never called them zombies. It's ghouls and flesh-eaters. They're dancing around. They didn't know what to call them. *'Those things!' which is always a good fallback position.* (p. 2)

Romero Zombie (R-Zombies) Characteristics in *NOTLD*

The status of monster is something Romero appears to actively pursue as a revelation uncovered through the narrative, rather than a given at the beginning of the film. It seems important here for Romero to give us time to wonder about what the eventual mass of pursuants actually are. It appears important to him that the pursuants be recognised as human but also as something else. This is a device that he employs throughout the first film, and implies in consequent films, although often oscillating between monstrous and human indicating a tension in the zombie between human/nonhuman which becomes useful in the zombie metaphor when looking at entities that sit in both distinctions.

R-zombies are presented as monstrous, murderous, cannibalistic, rotting animated corpses. They are inherently evil in some ways, showing some traditional aversion to archetypal religious cleansers such as fire, and cannot be killed unless shot in the head or from heavy trauma to the brain. They are afraid of fire much like the monsters that have come before them.

R-zombies sport a stumbling gait. Their walk is uncoordinated and fumbling and mostly slow, though early on one zombie is seen pursuing Barbara by running, albeit in a stumbling fashion. The implication is that the zombies are unable to demonstrate the same amount of bodily control that the living can. Their actions are haphazard to an extent, but at times they show an ability to think – such as destroying Ben's car

so he cannot escape by driving, while Barbara's zombie pursuivant uses a rock as a tool to smash her car window to get to her. For the most part, R-zombies are depicted as being without full physical function and with rudimentary abilities.

R-zombies are cannibalistic eaters. This is a new spin on the monsters seen in horror films during the sixties. The eating of others is one of the most shocking actions that appeared in the horror genre of that period. Additionally, this device was usually assigned to films about exotic pursuivants, but for the cannibals to be represented as *home-grown American undead* would have been considered as a shocking and bold statement for the patriotic (and equally protest engulfed) times of the Vietnam War. We recall Romero's remarks on how he wanted to originally write an alien invasion scenario but found that the prospect of a next door, all-American neighbour invading one's home would be much more frightening. Romero (Woerner, 2011) notes "I didn't presume to call them zombies. And now, they've become zombies. All I did was make them neighbours."

Romero's Undead Quadrilogy: Film Two — *Dawn of the Dead*

Synopsis

Romero's next film, *Dawn of The Dead (Dawn)* (Romero, 1978) follows a television executive, Francine, who along with three other survivors, finds refuge in a shopping mall. The story starts with a dual storyline split between a SWAT team working in the housing projects in America (which introduces two of the main characters, SWAT team operatives Peter and Roger), and Francine in her media duties with her traffic reporter and helicopter pilot partner, Stephen. Francine is shown in the first scene asleep on the floor. This echoes Romero's later film *Day of the Dead (DOTD)* (Romero, 1985) where the main character is also in a dream state in the beginning as Romero tries to set up the concept of this scenario as being the nightmare you wake up to after your dream. *Dawn* then takes off mid zombie crisis where the news station is broadcasting, among the chaos, various opinions and plans with experts. It is clear from the start that "the dead are coming back to life and attacking the living" (Romero, 1978).

The storylines of these two sets of characters converge after the swat team runs into their first zombie encounter. There are some points of interest here where the majority of zombies that appear early in the film are Hispanic and African American, perhaps providing commentary on class and gender issues. Overcrowding is exemplified in the small apartment scenes with multiple people, and again in a locked cage in the basement where the local priest had kept the bodies of the recently deceased. There is homage here to the zombie films and perspectives that foreshadowed the film industry, as Vodoun perspectives are referenced a couple of times in the script. In fact, the hero, Peter, later notes that his father was a Vodoun priest who used to say to him “when there is no more room left in hell, the dead will walk the earth” (Romero, 1978), linking the allegory back to the Vodoun zombi. This became one of the most famous catch lines for the zombie genre and featured in subsequent films such as *Resident Evil* (Anderson, 2002) where a newspaper heading reads “The Dead Walk!” as an homage to the power of Romero’s creations.

The narrative advances to the four main characters jumping in a helicopter. With low fuel and the requirement for rest and recuperation, they decide to bunker down in a shopping mall. Romero notes in *The Dead Will Walk* (Martin, 2004), a documentary about the making of the film, that the origins of this setting derived from a visit to one of the first indoor shopping malls in America. In discussion about his films, he wondered if anyone could survive in a mall during a zombie apocalypse and this instigated the setting for *Dawn*. Much has been written about the rationale behind this scene and there is no denying that consumerist activities and characteristics played a large role in the subtext of this narrative – however, this has often been at the expense of other important aspects of the zombie figure.

Stephen Harper’s (2002) “Zombies, Malls, and the Consumerism Debate: George Romero's Dawn of the Dead” for example has become one of the core references for many contemporary discussions on the subject of zombies and consumerism (see also Tony Williams (2003), “The Cinema of George A. Romero: Knight of the Living Dead”). This connection was most likely picked up on through Romero’s own comments on the connection between utilising the site of the ‘mall’ for the script and his observations of consumerist society (Romero, 2013). There are multiple scenes where

one could almost be forgiven for thinking these zombies are, in fact, just everyday shoppers, perhaps banging at the mega-multinationals glass doors for a stock-take sale, or wandering aimlessly around the various levels of shops, shuffling past shopfront after shopfront in a kind of consumerist coma. In fact, there is a scene where the occupants are looking down at the zombies from the mall rooftop and, in the limited view, see only people shuffling by as a trolley flicks out from the undercroft; there is a definite commentary here on the mindlessness and perception that mall shopping is an all at once sedating exercise *and* a potentially hostile activity.

However, the script includes several very potent dystopian epiphanies beyond the consumerist setting where the characters realise that the utopia (as associated with shopping) is just an illusion of a potentially comfortable survival that, in reality, exists in the face of a horrific apocalypse. This kind of illusion is often a characteristic of post-apocalyptic allegories. While Harper (2002) acknowledges other aspects of the narrative such as “social abjection” of the zombies in *Dawn* as slavery in consumerism, echoing the origins of the zombie as a slavery enactment, he ignores an important characteristic (as do many critical theorists on the subject): that the zombie and its *physical abjection* also have a lot to say about the breadth of its power to incite cultural discourse beyond political and potentially abstract concepts. *Corporeality is implicated as well*. As Romero’s films progress, so too does the level of abjection in the zombie body. This particular characteristic calls into the paradigm a recognition of the corporeal-biological body which is significant when using the zombie as a metaphor for complex biotechnological entities.

R-Zombie Characteristics in *Dawn*

The physicality of the zombies in *Dawn* was revolutionary. Tom Savini, the special effects master hired for the film, worked very hard along with Romero’s vision to make these zombies the most visceral fans had ever seen (Martin, 2004). Expecting the film to be banned for its explicit horror scenes, they decided to still forge ahead on the effects with Romero’s approval and encouragement. While the physical appearance of the zombies in *Dawn* was still ghoulish in nature with blue-shaded flesh, elements of more confronting rotting flesh were starting to emerge. *Dawn’s* zombies were still slow and able to be outrun and were without any high level of intelligence.

However, they were still able to recall behaviours at a basic level, and could solve basic problems and so on. Memories begin to weigh heavily in Romero's narratives, as in *Dawn* he appears to begin to really contemplate and express these characteristics in his zombies. The film's unprecedented visually excessive scenes combine physical abjection with characteristics of cannibalism and social connection through the site of the shopping mall and the paralleled zombie=shopper behaviours. Where other films may have perhaps included stomach churning effects for the time, none had yet combined the concept of "they're us" (social – humans), abject flesh and cannibalism (flesh, bodies and abject/monstrous) in this particular way. The radical approach surrounding Romero's treatment of zombies is echoed in the script for *Dawn* via the voice of the news – one could even perceive the media voices as Romero's own, as he himself started out in the newsroom running reels to editors as a young man. (Romero continues his obsession with the media in a much later sequel *Diaries of the Dead*.) Various newsroom reports are dotted throughout *Dawn*, containing conversations about what these creatures may be, how they might act, and how one might destroy them or remain safe in a future *with* them. Experts "Dr. Foster" and "Scientist" are interviewed and various themes are addressed. Dr. Foster discusses the notion that these are people who have passed and are returning from the dead, attacking and eating the living. The discussion turns eventually to an argument on cannibalism where he feels the creatures are not eating each other, but rather eating the 'category' they no longer have admittance to. The scientist later acknowledges that the public see the zombies as family members and friends, and asks them to approach without emotion as these creatures do not respond in kind, and later asks that the public be rational and logical. The reporter argues that the rationality the scientist implores people to adopt is not the reality of how the public sees the world. Romero is quite openly discussing in the film many of the considerations he encountered *for the biological* and cultural positioning of the zombie particularly within a scientific approach. Later, in *DOTD* (Romero, 1985) Romero begins to include more of these military and scientific perspectives of the zombie.

Romero's Undead Quadrilogy: Film Three — *Day of The Dead*

Romero's third instalment in his zombie franchise, *DOTD* (1985), develops new approaches to the zombie paradigm. While the Romero films are seen as sequential, they are in fact faceted and often parallel social treatments of the same premise; human interactions and reactions in an apocalyptic scenario.

Synopsis

In *DOTD*, a group of scientists and soldiers must survive together in an underground facility following the rising of the dead. The film openly embraces the technocratic tool of Biology both as a conjecture of origin of the zombie and as a source of interrogation of the zombie's characteristics; the scientists in the film generally take the position that in order to know it, it must be dissected. In this particular treatment, the zombie is *deeply* entrenched in scientific and biological discovery throughout the narrative.

This perspective originates from the scientists who try to find a way to deal with the zombie threat as well as manage the ever-increasing aggressiveness of the military (or what seems to be left of it). The military agents are interested in obliterating the zombies and show little tolerance for the scientists and their pursuits. There is tension between those who want to destroy the zombies and those who want to cure the infection.

The soldiers in this instalment are treated by Romero as limited and less dimensional characters than his *NOTLD* hunters/soldiers who essentially arrive as powerful saviours in the final scenes. In *DOTD* the soldiers are out of control, unintelligent and highly aggressive. The scientists, however, are more complex and play a significant role in *DOTD* as scientific desires, ideals and control are placed under the microscope.

The representation of 'the scientist' is split into two groups – the scientists (presumably haematologists) who want to cure the infection, and the biological scientist who wants to train the zombies to coexist with humans. The concept of living with the

other is treated by Romero here as madness through the offering of extreme alternative ambitions of 'cure' or 'colonise'. Romero is careful however to render both methods as futile, substantiating the perspective that 'other' cannot be fixed or normalised.

The scientist, Logan, who is an advocate of living with zombies, is referred to as Frankenstein throughout the film and in fact there are several scenes where he animates the dead, removes organs in the living dead to determine the lowest level of organ requirement for animation, and stores body parts for experimentation and as food rewards when training zombies. Logan discovers that the zombie is a result of the degeneration of higher brain functions to the point when the only organ that 'matters' is the brain, privileging the perceived divide between animal and humans as intellect or cognisance. What is left are "deep dark primordial" (Romero, 1985) needs such as feeding. Logan believes that the zombie brain can be inverted back to a more desirable 'civil' state. While the objective to cure de-privileges the other (and attempts to reabsorb it back into the civil collective), the ultimate attempt to retrain the other into joining the 'self' style cabal sets itself up against the alternative, which is to eradicate/destroy. By venturing *into* binary distinctions (by reinforcing the partitioning between 'intellect and cognisance', and more so 'civil and uncivil', 'self and other' for example) Romero consequently profoundly connects the concept of colonisation to the act of employing binary distinctions.

Important Characteristics in *Dawn*: Civility and Companionship

Civility is an important aspect of the zombie in this particular treatment: to breach civility is to breach the contained. The loss of civility is quintessentially 'zombie' as it rejects the social tenets of civility; it even rejects the integrity of the *surface* of the civilisation through rising from the grave by symbolically breaking through the membrane of the soil upon which civilisation is built. The cemetery is the ultimate site for civil symbolism as it is a place in which our most respected civil rituals are played out. These rituals, such as the funeral and burial of a loved one, are of course played out *beyond* the civil life and society membership. Our concept of civility and kinship transcends life into the zone beyond it; one need not be living to be admitted to the civil group. It is here that the literal breaking of such a sacrosanct ground carries with it the ultimate marring of the concept of civility. Logan injects his perception of social

civility in that “civility must be rewarded or there is no use for it”. But in fact, civility proves to be the undoing of the soldiers in the film through their renouncing of it, and the undoing of the scientists as they fail to civilise the other.

The narrative also makes an attempt at companionship with the other via this ‘civility training’. Logan’s experimental zombie, Bub, becomes a pet of sorts in the narrative. More and more as Bub recognises objects we associate with everyday life – a phone, a razor, a toothbrush, book, and finally an action of a salute to a soldier – we start to see the *category* of ‘monster’ as quite amorphous. The character of Logan introduces questions about these categories and how we have come to define something as other through his attempt at humanising the monster.

In true portent style, Logan’s humanisation work is doomed to fail. At the hands of the aggressive military during his attempt to ‘resocialise’ Bub, Logan dies. The zombie figures here hint at the *potential* for kinship rather than the accomplishment of it as Bub avenges Logan’s death. Both Bub and the unsocialised zombies in captivity once again become uncontained, desocialised, and unable to be drawn into categories. Romero’s films evolve in their representation of zombies (Murray, 2008). He experiments with the edges of boundaries as he attempts to discover how far he can push the human element of these multimodal creatures before they lose their way as formidable multi-boundary occupying monsters; they get close enough to reveal borderlines between binary distinctions, but not close enough that they become stuck in one. Kinship is implied but not yet achieved – the question of kinship in one form or another is broached just enough for it to be considered by the audience as a possibility. It is at this point that Romero appears to realise that these monsters are much more complex than they are ‘curable’ – perhaps seeing kinship (which here is, in fact, colonisation) by the hands of science as ultimately unachievable. Romero appears to recognise that the proposal of kinship with multiple zone dwellers is a valuable one, but ponders the proposal rather than resolves it.

The film is essentially about the infringements and tensions between various categories and the desire to contain them. Ultimately, this treatment of the zombie para-

digm suggests that the questions and *the ambiguity* of the boundaries between categories of self/other, human/nonhuman, and living/dead may not need to be destroyed, but rather in one way or another, be considered ambiguous enough to be worthy of *kinship* over annihilation or colonisation. These category crises and the potential for living *among* rather than *in* categorical opposition to the zombie, are treated as a prospective part of our survival rather than the demise of it. After all, most of the central characters in the film survive (it is only in their pursuit of 'colonise or kill' that they are taken to the brink of obliteration), the zombies are free, and the world continues, as the final scene shows the zombies taking over the compound, and the survivors resting on a tropical island, although we are left feeling that this is far too good to be true. Romero leaves the possibilities up to our keen understanding of the apocalyptic genre – it probably is too good to be true. There is a kind of acceptance here where utopia is defined by dystopia and distinctions are undone, or at least left to their own devices.

Accepting binary distinctions as ambiguous through this 'fleshing out' of the treatment of the zombie, allows life to continue in a kind of companionship scenario. There is a relinquishing of control of the categories in the conclusion to *DOTD*, such that there is no choice but to live *with* this (category) crisis. Other than Romero's desire to pursue (and summarily disprove) the 'colonise or kill' dichotomy, in the end, distinction and eradication are abandoned as remedies for the category crises. The alternative to the two solutions of kill or colonise is left to the audience's imagination as the film ends with the relentless pursuit of the zombie horde – it *cannot* be contained, civilised or reversed as Romero proposes during the film. The only offered conclusion is to live alongside the messiness of the other, however *it* wants to be – the treatment advocates living with multiple category dwellers. Romero leaves the film with a question mark over the integrity of the boundaries between 'the other' and 'the self'. He perhaps unsuspectingly embraces Shilrick's approach to allow the vague and undetermined place of the borderland to be just that – vague and undetermined. Romero himself, creator of this particular symbol of category crises, cannot categorise the zombie. Rather, his film is resigned to allowing it to remain as 'other' because this is where its power has always resided.

Romero's Undead Quadrilogy: Film Four — *Land of The Dead –the film*

Synopsis

LOTD (2005) follows a cross-section of key citizens behind the machinations of a society trying to survive inside a walled city during a post zombie apocalypse. The main characters of the film are situated in either military or political cultures. The core groups of characters in this film are the mercenaries hired to control the zombies around and outside of the city's boundaries, and the wealthy men who control the city. The film tracks the tensions between these two groups as the mercenaries grow tired of the corrupt dealings and self-serving actions of the wealthy elite while they deal with the reality of survival. The tensions mount as the mercenaries, led by Riley Denbo the creator of "Dead Reckoning", a heavily armoured custom anti zombie assault vehicle, and Cholo DeMora, second in command, are sent by the city's corrupt leader, Paul Kaufman, to the outlying wasted towns to procure supplies. During their visits they observe the undead exhibiting cognitive capabilities. The zombies attack and infect some of the mercenaries. Kaufman, from the safety of his high rise luxury building, then sends the remaining mercenaries even deeper into zombie territory and into further danger, resulting in an uprising against him. The team eventually are unable to hold back the new and capable zombies from overrunning the city. The zombies kill Kaufman in the process and the team heads off in *Dead Reckoning* to Canada, looking for a new place to survive. Cholo instructs his team not to engage the zombies as they have chosen not to attack *Dead Reckoning*, instilling a sense of compassion and recognition of their cognition.

Important Characteristics in *LOTD*: Context within the Quadrilogy

This film, while leaving the zombie as less powerful than its former incarnations through the addition of a cognitive feature and overly associable relationship with the zone of 'human', does not really have any practical additional traits. It does, however, indicate the issues with 'zone setting'; as this particular monster becomes more easily associated with being human with the heavier weighting of human qualities. There is no denying that the zombies in *NOTLD* et al. are far more terrifying

than the *LOTD* zombies, as this weighting of attributes shifts too heavily into one particular zone in *LOTD*. So instead of providing a list of characteristics for this particular film it is important here instead to review this in relation to the other Romero films because it's useful to address the limitations of boundary pushing within the genre.

The film's focus is primarily on cognition in zombies and tensions within class structures. *LOTD* is a culmination of Romero's former films, even though two further less successful instalments have followed. In *LOTD*, Romero focuses upon society's attempts to reinforce differences between the living and the undead, the rich and the poor, human and nonhuman, highlighting the slippery slide society faces when we start to distinguish and discriminate between self and other. Romero's characters live in a culture where the other is shunned and prevented from entering into civil society. Once again, as in *DOTD*, through the focus upon the attempt to fortify the margins between binary distinctions (which always fail), the *similarities* between the inhabitants of these categories are highlighted; the perceived boundaries between these categories are revealed as vague and permeable. In *LOTD*, the limitations are pushed and the resultant ending is more subtle and less ominous.

While the SWAT team may have left the projects of *Dawn*, the divide between various classes is still prevalent in *LOTD*. We know from earlier Romero films that military endeavours (as well as scientific ones) inevitably fail. There are no surprises in *LOTD* as Romero works through some of his original ideas concerning zombies as complex, multiple boundary dwelling creatures: instead this film pushes the zombie further into these other zones (Murray, 2008). The zombies in *LOTD* are predominantly reminders of the tenuous membrane that supposedly separates the boundaries between human/nonhuman and living/dead, as these zombies re-enact various markers of civility throughout the film: a zombie band continues to play 'music', a gas station attendant pumps gas, zombies even take up arms, and eventually a zombie horde tries to find a place to call home without being harassed or slaughtered by their 'human' counterparts. Again, in the last lines of the script, the implications that 'they are us' continues as Cholo asserts: "All they want is somewhere to go. Same as us." (Romero, 2005)

Importantly this film draws candid parallels between humans and zombies through the use of human roles (jobs, activities, use of tools and actions), revealing the problems of binary distinctions, and the benefits and freedom that might be possible if we adopt a comparable approach to 'others'. It does so at the expense of the zombie as threatening, as we shift it more into our zone by mapping our own attributes upon it – *it loses its power to threaten the potential obscurity of distinctions*. It does suggest that comparison thinking ('you are like me'/'they are us') is perhaps not the way forward for undoing distinctions, as it simply advocates pulling the 'other' over to one's own 'zone' – it does very little for the blurring of boundaries and just shuffles various figures within existing ones.

While *LOTD* does not overtly discuss the temporal markers or technological relationships of the period in which it appears, it does offer some temporal connections. John Lutz (2010, p. 127) for example in "Zombies of the world, unite: Class struggle and alienation in land of the dead" notes a similarity in the fireworks used to distract the zombies and the 'shock and awe displays' of the US military which was most prevalent during the early years of the Iraq war, placing it not only within a relatable technological time frame but also as a commentary on class access to such technology.

Romero similarly toys with political, social and scientific approaches to incursions of categories through material examples as humans and zombies messily breach their own, and each other's, margins. Even though I have referred to the 'other' continually when discussing Romero's films, I concur with Hallam's (2011, p. 43) assessment that ultimately such narratives are *not* necessarily about reinforcing the concept of 'other'. Through Romero's treatment of the perceived other, he provides a mechanism with which to experience or understand *the integrity* of the binary distinction between self and other. While *LOTD* may be a flawed treatment, it ultimately can be used to highlight the point that distinctions always fail to hold fast, and are in fact leaky, fluid and unpredictable – 'the boundary' is quite rightly, vague.

The Romero Paradigm

In this chapter, I have illustrated some of the key zombie characteristics through Romero's seminal films in which I have established a zombie paradigm. The zombie

in Romero paradigm implicates the 'other' in a unique manner. It is never a singular (or defeatable) creature, as it is part of an unrelenting horde – an onslaught of unavoidable confrontation with the concept of othering and of distinctions. It does not allow us to slip from its mirroring grasp for long. It reflects us, yet embodies us and other things simultaneously. It is heavily rooted in contemporary portent in which we are reminded of our technocratic hive-mindedness. Romero's zombies are conclusions of military-technological-biotechnological muscle and hubris. They are always the focus of colonisation or eradication by the same hands that created them and those hands are never successful.

Characteristically, Romero's zombies are slow, lumbering, ghoulish and literal rotting corpses. They are physically messy and undeniably embodied. They are infectious and outnumbering, turning us into the other, occupying the distant borders of 'normality' through our limited colonisation of 'society'. They have been born of technological hubris of any given time they emerge within. Romero's zombies often have relapses into memory imbued moments, which are never permanently resolved. This allows us to be reminded of the possibilities of occupying multiple rather than binary locations. They are those we recognise – locals, neighbours and family, but they are also invaders and colonisers.

Romero reminds us throughout his films that we cannot escape the threat we pose to ourselves if we continue to claim categorical distinction and reject our responsibilities for it. Romero's paradigm has been the canon upon which all other contemporary zombies have been based. While some shifts of note have occurred within the genre, essentially these characteristics have been long lasting, and have continued to illustrate the power of these unique monsters to destabilise and subvert the business of distinctions. Romero, however, is not the only major contributor to the zombie genre. While his zombies have become the standard by which zombies are judged within the genre's fan base, other treatments of the zombie have seen some shifts in the characteristics that only serve to add interest to this complex figure. In chapter six I will explore these other examples further citing particular films that exemplify the zombie paradigms shifts and at times, its reinforcement.

Chapter Six

Shifts in the Paradigm

In the last chapter, I established a paradigm containing a collection of traits for the zombie figure, readied for use as a metaphor in chapter nine, which was deduced from its popular culture manifestations. Because the zombie, as I have inferred, is a creature that is innately threatening and challenging, much more complexity can be collected from the moments where the paradigm itself has been challenged through various contemporary treatments of the theme. In this chapter, I map these changes through examples, again in film, where the zombie paradigm shifts. I will briefly provide a synopsis of useful films and then discuss their important contributions to the zombie paradigm. I also include in this chapter contemporary examples where the paradigm is *reinforced*, as I also consider these as significant moments in the tensions between the zombie and its standard as well. Through the zombie's constant shifting, a more complex metaphor becomes possible, enabling a way with which to read other equally complex entities – through this, a more expansive set of characteristics synonymous with the zombie figure become useful in the application of it as a metaphor.

Return of the Living Dead

The Return of the Living Dead (ROTLD) (O'Bannon, 1985) is based on the fictional events after the *NOTLD* film. Directed by Dan O'Bannon and written by the co-writer

of *NOTLD*, John Russo, *ROTLD* is a 1980s 'b grade' popular culture horror retort to the seriousness of *NOTLD*. Russo was affiliated with George Romero during the initial writing period of *NOTLD*, and after their split, started developing the story for his own treatment of the Living Dead theme (Macek-III, 2012).

Synopsis

ROTLD follows Freddy, a new young employee of the "Uneeda Medical Supply" company, and his senior supervisor, Frank, on their late shift. Unwittingly, Freddy and Frank open a drum of biochemical matter which was responsible for the dead rising during the late 1960s. Gases are released from the storage drum, causing the dead to rise. The zombies eat the brains of the living, infecting others, turning them into zombies too. The central characters Frank and Freddy are infected. The film ends with the entire town's population being wiped out with a military strike. The story-line is left open with the implication that the gases, which created acid infectious rain, will infiltrate another town.

Paradigm Shifts in *ROTLD*: Got Brains?

ROTLD is a significant film within the genre which not only introduces parody and comedy, but also introduces the enduring correlation between zombies and the consumption of human brains (Lizardi, 2013, p. 96). The script also includes more conscious zombies who think, feel and communicate. The affiliation between zombies and brains starts and ends with this particular film franchise (a sequel was produced) but has persisted in the general references to contemporary zombie. For example, the relationship with brains and zombies in imagery, other popular culture references to the zombies genre, and so on.



Fig. 13. *BRAAINS 2012!*, Think Geek Poster (BRAAINS, 2012)

The zombies in *ROTLD* differ significantly from Romero's zombies in many ways. Russo and O'Bannon's zombies are 'wetter' (more fleshy and moist), faster, and smarter. While physical shifts in their diverse variety could be noted of almost all non-Romero treatments of the zombie, the point of difference in *ROTLD* is that these zombies are intelligent to a degree, and are able to talk, think, and solve problems. They are able to rationally manipulate and pursue the living with the intent to find more people for more brains (Jones, 2011, p. 47). Desire figures heavily in relation to their cognitive skills which are primarily focused on the search for brains (Dersken & Hudson-Hick, 2011, p. 16). There are multiple scenes in which the zombies discuss their desires with characters. Freddy most notably seeks out his girlfriend's brain during which he talks about how much he cares for her – particularly her brains (also a commentary on the objectification of women).²¹ There is also a scene where the

²¹ Referencing the rise of the discourse on 'the beauty myth', the concepts of less gender dependency, and on the productive labour of women, see for example Krolokke and Sorensen (2006) on the waves of feminism.

half-rotting corpse of a woman is captured and tied down to a slab in the morgue that expresses that the dead find death painful, and the only way of relieving the pain is to eat the brains of the living. As one of the few movies (if not the only noteworthy movie) that has used the brain consumption mechanic, its continual popularity as a zombie characteristic proves how much of an impact this concept has made on the genre.



Fig. 14. *The Simpsons, Dial 'Z' for Zombies*, Animation Still: 'Zombies looking for Homer's brains' (Baeza, 1992)

Brains factor into zombie discourse because of the loss of 'self' and conscious behaviours. It makes sense that the two – consciousness (or lack of) and brains – might become associated. Robert Kirk (2006) draws on the zombie metaphor to discuss cognitive philosophy, particularly in the area of consciousness. Kirk's zombies are of interest because he provides a basis on which to apply them as very useful metaphors. As consciousness is raised through this persistent nod to the concept of loss of self, brains and memory, it is useful to acknowledge Kirk's use of the zombie as it does give depth to this characteristic of the zombie canon. Even if the indicator (of zombies eating brains in this one film franchise) is a little trivial at first glance, the significance resides in consciousness as it relates to an awareness of the self – this is useful, in the interrogation of the self/other dualism in chapters eight and nine. Kirk's zombies, it should be established, are not the kinds of zombies I discuss here. They are essentially doppelgangers for us, simply named 'zombie' out of their fragile connection to

the subject of consciousness, they are not about popular culture zombies as they appear and act. By this, I mean that the label 'zombie' as used by Kirk is arbitrary and utilised as a place-marker to discuss consciousness philosophically. I am exploiting Kirk's zombies here for my own purposes to open up the zombie for metaphorical use within academia, in discourses relating to the mind/body split and the subject of categories as mentioned, particularly the self/other.

Like Russo and O'Bannon's zombies in *ROTLD*, Kirk's zombies might share similar experiences to us but he would argue that without a similar ability to 'understand' those experiences, such zombies could never exist. Kirk's (2006, p. 4) zombies *think*. Using the zombie as a metaphor to discuss what it means to be "phenomenally conscious", Kirk (2006, p. 2) challenges the possibility of a non-conscious but otherwise fully functioning body, a 'doppelganger' (which he calls the 'philosophical zombie') through arguing that the concept negates physicalism. He postulates that this is an important discussion to have because of the empirical questions that arise when discussing consciousness from a scientific position. Kirk (2006) states:

If zombies are so much as a bare possibility, the world is a very paradoxical place. That possibility doesn't just imply that there is more to us than the behavioural or other physical facts can provide for. It implies that our part of the world involves something non-physical, on top of the molecules, atoms, and subatomic particles that compose our bodies and those of other sentient creatures. If on the other hand zombies are not possible, then if we can make clear why that is so, we shall have solved the hardest part of the mind-body problem. (p. 5)

I like my world paradoxical and complex rather than reduced or 'solved'. But, I am drawing attention to Kirk's *utilisation* of the zombie as a causal metaphor in the very basic and very first instance – Kirk chooses to use the zombie as what I would call a *functional metaphor*. For Kirk, it is an assistant in illustrating problems within the philosophy of consciousness (Kirk, 2006). Kirk's zombies additionally stand in, for my purposes, as a reminder of the fear mechanism that the zombie employs; *the fear of the loss of 'self' or 'self-awareness'*. Otherwise, why else would a double without consciousness even be proposed in such a seminal discussion of consciousness? It is not in the details of the technicalities of Kirk's zombie consciousness that the metaphor has its power, but rather through the overreaching characteristics of the zombie figure

that it is like us in some way – that it *can* represent us through how we ‘think’. It is useful here to implicate the mind *and* body in scientific explorations of the body as a zone in Biology. It also sits in those places in between the categories of self/other in Kirk’s examples, in which we see a demonstration of one who simultaneously occupies multiple zones of ‘being’.

This is also true of the example of central characters-turned zombie in the *ROTLD*. They simultaneously occupy both self/other as they are transformed and able to retain elements of their identity, thoughts and memories. It is in this respect that the brain-eating phenomenon becomes incredibly fascinating as the perceived loss of self is sought out, re-consumed, to ‘ease the pain’ of death and loss of the self. Consumption is at the heart of the zombie’s primality (Bishop, 2010, p. 207) and here it is deeply related to seeking out the self, or more specifically, ‘the conscious self’, postulated to be brain/thinking centric in Kirks relatable theories. Consuming in *ROTLD* could signify the desire to shake the binary state of ‘us’ *or* ‘them’, and the yearning to embrace a much more ambiguous state where such distinctions are undone rather than defined.

ROTLD pulls in to the zombie paradigm a discussion on the mind and body split. It implicates comedy as a tool of accessibility into its commentary. It unrelentingly draws in the body through its rotting corpses, discouraging us from being too focused on separate zones of mind and body – flesh when wet, raw and rotting – and *alive-dead*. It is too difficult to ignore this zombie’s rationality *and* its physical presence. The mind and body split in scientific categorisation is intertwined in this narrative, especially because of its context of biotechnology in this setting.

Zombieland

Produced in 2009, *Zombieland* (ZLAND) (Fleischer, 2009) revitalised the zombie film genre as an action comedy. It’s considered to be a ‘zomcom’ – a ‘zombie comedy’.

Synopsis

ZLAND follows a student by the name of Columbus (known throughout the film by his destination rather than his real name) who seeks out his family during a zombie apocalypse. He teams up with various other survivors who reluctantly, out of their distrust for others, band together to safely reach their respective destinations. Columbus, a phobic person and physically inept, survives by following a set of rules he established, such as “Beware of bathrooms” and “Cardio”, which help him to prepare for, or avoid, problematic situations. Other survivors that Columbus teams up with include gun and violence-loving Tallahassee, who is seeking the last surviving Twinkie, and Wichita and Little Rock, sisters who are seeking a fun filled reminder of their once normal life by finding an amusement park called Pacific Play Land. The characters make their way across America, thwarting and confronting the zombie onslaught, ultimately end up providing each other with the family connection they in fact all long for.

Paradigm Shifts in *ZLAND*: Game on! and Place

This film provides some subtle additions to the zombie paradigm rather than shifts, which, while not revolutionary, are still worthy of note as they offer new methods to utilise the zombie as a metaphor from different angles. These focus mostly on mechanics of narrative delivery rather than zombie characteristics. Although the zombies featured do adopt a faster and more physically able disposition (I touch on this later in this section), of greater importance is the addition of a set of rules for engagement, which references gamer culture thus relating this manifestation of the zombie to a contemporary setting and culture (Kelly, 2013, p. 84). Game culture has long been considered as one of the major contributions to the longevity of the zombie genre through game creations such as *Resident Evil* which in itself is the “benchmark for the survival horror genre as a whole” (Holmquest, p. 64). It is of importance because it establishes the zombie genre as being related to technology through its profound electronic relationship, and reminds us that other ways of exploring the popular culture figure exist.

Game on!

Zombie narratives have traditionally favoured chaos as the mechanism for survival in an apocalyptic scenario as exemplified in films like *World War Z*, the Romero franchise, and particularly *The Walking Dead* where chaos (the breakdown of society and order) results from the zombie contagion (Sheppard, 2012, p. 130). *ZLAND* cleverly embraces apocalyptic chaos but places it within a set of rules of survival –which, in the story, works. Often imposed rules or order within these scenarios will ultimately fail, but in *ZLAND*, these rules enable the survival of the group, albeit only through following them rather flexibly

For example, “Rule #32. Enjoy the little things” is an adopted rule in which Columbus draws from Tallahassee’s approach to ‘blowing off steam’. Tallahassee can often be seen demolishing various objects and areas, or seeking out Twinkies by ransacking any commercial van or building he comes across, as a way to reduce stress. The inclusion of ‘game’ rules herald a way through the seemingly endless apocalypse and the human mutations it has created, playing with the tensions in zombie narratives between the desire to find order and the destabilisation of it which is brought about by the zombie apocalypse (Simpson, 2014, p. 28).

Rules and ‘kills’, as mechanics of gaming is referenced in the film through the literal visual presence of associated text echoing the visual display of energy, kills (usually a conclusive achievement of a game scenario) and health levels in the gaming view of first person shooter games in particular.



Fig. 15. Zombieland, Film Still: ‘Rule #2 Double Tap’ (Fleischer, 2009)

Heads up displays (HUD's) are important in game play so the player is able to *affect* the narrative through decisions based on, achievements, scenario objectives and health levels for example.²² 'Double Tap' is another of Columbus's rules in *ZLAND*, is also an understood rule in shooter games as gamers make sure opponents are truly disabled before continuing. *Left 4 Dead* (Booth, 2008) for instance concludes each scenario with a list of player achievements listing kill types (zombie kills, boss kills), kill numbers and major in game accomplishments. *ZLAND* associates with gaming through its various HUD visualisations.



Fig. 16. *Zombieland*, Film Still: 'Zombie Kill of the week' (Fleischer, 2009)

Additionally, the narration is present in a 'first person' kind of method through not only the presence of these rule displays but also through the real time narration of the primary character. These references might serve as surrogates for what Frans Mäyrä (Kelly, 2013) considers as a way of identifying with the margins of civilisation. Chad Habela and Ben Kooyman (2013, p. 2) refer to gaming mechanics as 'agency mechanics', where the viewer is embedded in the process and thus identifies with the characters and scenarios (even the monsters) in a different way to traditional film. Mäyrä talks about a first person protagonist character (for example, playing a zombie in the

²² Keeping up cardio or conserving it is an important element in zombie games in particular, as seen in the game *State of Decay* for example, where a cardio bar is present during scavenging and fighting, and is also an element of the character's buildable attributes.

game, *Stubbs the Zombie*), and Habela and Kooyman talk specifically about game mechanics. This film employs the mechanisms of both processes of delivery and interaction in various subtle ways.

The association with gaming *in general* in this film may indeed reinforce the position of the viewer in a state of *simultaneous multiple zone (category) occupation*. Habela and Kooyman (2013) reiterate S. Spittle's take on gameplay, quoting:

The game apparatus situates us in the game world as an extension of ourselves, locating us as a controller of the action. Importantly, unlike a good deal of film and literature, we are not simply asked to identify with an existing character. Rather, as controller of the action we occupy the dual identity of player-character. (p. 5)

ZLAND extends this occupation of dual identity scenario *to* the film, allowing a further reading of our position as viewer to that of 'actor', or more specifically, giving us the experience of agency — even though this position in film audiences is diminished compared to that of a gamer as the gamer has the ability to actively affect the story. The relationship between viewer and agent, even though it is simply implied through the gaming reference, is important as it adds a distinctive layer of multifaceting to what is normally, in film, a somewhat distant experience. The gaming references *embed* the viewers into the narrative, giving them a sense of immediacy and currency, and ultimately a *participator's investment* in the commentary.

Place

'Place' figures heavily in *ZLAND*. The narrative employs this throughout origins, destinations, and pit stops. Place is most obviously referenced in the naming of the characters in *ZLAND* which are assigned to a character's destination, connecting the temporal states of pre-apocalyptic and post-apocalyptic periods. Additionally it is essentially a 'road trip' movie (Lashua, 2015, p. 60) where the characters are in transit to destination that makes a significant statement about desire, amusement and excess — Pacific Park Playland — an amusement park. It enables the characters to be simultaneously located within temporal periods, and to simultaneously embody layered

activity through visiting nostalgic sites which are always infiltrated by post-apocalyptic encounters and counter actions.

The film employs several references to 'place', using them in various ways. The destination for Wichita and Little Rock of 'the amusement park' is not dictated by survival but rather by a desire to reconnect with a particular element of civil frivolity, indicating that the characters in survival zombie horror narratives have matured beyond primal survival, themselves calling upon a new kind of civil existence. The group, for example, stays in the Bill Murray mansion for a spell of relaxation. This pays homage to *Dawn* and *NOTLD* where location significantly correlates to survival strategy, but in stark contrast to these earlier films however, the characters in *ZLAND* travel to these places to play or to embrace and connect with their former lives. Consumerist utopianism, while it plays a role in *ZLAND* is not the focal point as it had been in previous films like *Dawn* – the search for a correlation with civility is.

The positioning of wealth in the Murray mansion still provides us with consumerist discourse but subtly repositions it. *DOTD* suggested that money, for example, was without value entirely. Even though it is noted that there are early scenes which equate money with pleasure, the outcome is a solemn one ensuring that the concept of value in consumerism is rendered pointless. In *ZLAND*, 'purchase' is observed by the literal inclusion of money. Kelly (2013) notes this is exemplified in the game of Monopoly played in the mansion using real money to "purchase pleasure" (p. 91). Additional scenes show the literal burning of money for warmth, and the smashing of products in a store for emotional relief, which only serves to reinforce the shift from consumer value to pleasure, demonstrating the *insignificance* of consumerism in the zombie apocalypse.²³ This repositioning allows consumerism to be 'written in' to the zombie apocalyptic scenarios while still firmly rooting it in the context of pleasure

²³ Kelly (2013) infers that this is in fact *in opposition* to the paradigm setting of *Dawn* that fundamentally connected the subject of zombies with consumerism debates thereon. Kelly remarks "This new generation of entertainment-fixated zombie survivors differs from their forbearers in the objects they desire to consume, yet their consumer desires remain." (p. 84)

and civil desire. It does so as it minimises the consumerism angle allowing for sharper focus on other possibilities for this kind of re-reading of the zombie narrative.

The amusement park is another significant location which establishes 'place' as a stand-in for pleasure. As Kelly (2013, p. 86) notes, the amusement park has some contemporary significance because in zomcoms it appears to alleviate the guilt Romero inspired by 'dispatching' the undead; amusement parks represent fun, and zomcoms represent the fun of killing monsters. Zomcoms merely highlight the *desire* to dispatch these confrontational boundary dwellers, yet always inevitably remind us that there is value in keeping them around because these narratives almost never resolve as an *effective* dispatching of the dead – the zombies always remain, and the outbreak continues. Furthermore, Kelly's premise is diverted as the very scene of *ZLAND* in which he claims killing is fun, is the very scene which the narrative accelerates to a more serious end. The threat is greater, the finality of mortality is clearer, and the fun – for the most part – stops as they fight for survival. Place stands in for pleasure but it does so regardless of how the characters cope with the apocalypse (in this case they are quite adaptable).

Through the positioning of 'place' in *ZLAND*, *loss* of pleasure and disconnection with the civil joys of 'play' and forging relationships may be the concerns that we are prompted to contemplate. Cultural contemplation is not negated by pleasure or fun, merely *shifted* through subtly repositioning horror, consumerism and relationships into contemporary and new ground for further contemplations. *ZLAND* ultimately contributes to the paradigm through its connective gaming mechanism which not only advocates rule breaking from within the structure (an important technique in undoing category impositions) but also creates a new position for the audience as participatory, instilling a more active connection with any commentary the narrative may propose.

Shaun of the Dead

Shaun of the Dead (SOTD) (Wright, 2004) is considered to be a “zomromcom” – a zombie romantic comedy. Written by Simon Pegg and Edgar Wright, the film references Romero’s earlier work *NOTLD*.

Synopsis

SOTD follows Shaun, an underachieving man happy to go about his banal lifestyle until a break up with his girlfriend (over his life choices) and the zombie apocalypse coincide. Shaun and his best friend, Ed, are so caught up in the banality of everyday living that they are unaware for some time that zombies are roaming the neighbourhood. The film follows Shaun as he struggles to take on the task of improving his romantic and life prospects by attempting to save his girlfriend, friend and mum from the looming zombie apocalypse.

Paradigm Shifts in *SOTD*: Comedy, Kinship and Slow Zombies

SOTD is set up as a comedic homage (Pegg & Wright, 2004) to the early works of Romero in *NOTLD* and *Dawn*, referencing the prototype for popular culture zombies in relation to their lumbering ‘creep’ and to the banality of the everyday in referencing the zombie like activities of mall shoppers in *Dawn*. Of importance is the comedy element of the film which enables useful subversion of what is normally quite a serious and ‘heavy’ genre, enhancing the accessibility of heavy themes and commentary. In the film’s ending Shaun lives with his zombie friend, and the world functions through incorporating these zombies into the community. This may offer a way of employing Haraway’s discourse on kinship which allows for a coexistence with others, rather than a distancing of it.

Comedy

At its core, *SOTD* heavily employs the delivery method of comedy. This is very significant to the paradigm because of the way in which comedy allows admission to a genre, yet manages to subvert it. *SOTD*, like most comedy treatments of the zombie

canon, employs traditional characteristics and subtle paradigm additions or shifts. Unlike other comedy treatments, *SOTD* strongly references traditional R-zombies, and was also very successful as a film. *ROTLD* (the only other really notable and popular instalment of zomcom) is similar in many ways to the same power *SOTD* holds, however it was a film of its time and perhaps largely forgotten. *SOTD*, the most contemporary film of its kind (besides *ZLAND*) has enjoyed a wider, popular audience, enabling a wider access to the core themes that the zombie prompts. It is primarily a comedy before it is a horror film. Bruce Kawin (2012) notes in his book *Horror and the Horror Film*, that in horror comedy “comic aspects and the gore must be realized with equal zest.” (p. 200). *ZLAND* and *ROTLD* manage this well and rely upon that balance to be great at what they do; *SOTD*, however, manages to surpass the expected equilibrium in favour of its comedy treatment of the genre. It does this largely by satire as it absorbs the most powerful aspects of the genre through the resurrection of Romero’s zombies and through its social commentary. The relationships the film implicates – relatable contemporary existence *and* horror (or an awakening caused by it) – brings this film into both popular and deeper discussion. The film remains true to the genre but offers elements of subversion through its injection of humour, referencing zombie ‘consumer’ commentary – that we are zombies trudging through life rather than living it. Like all faithful zombie films, the end is always the beginning; *SOTD* takes this on literally. The narrative concludes with Shaun living a more complete life with zombies in it, rather than without them.

The very character of Shaun occupies both a comic and tragic position as a serial underachiever. While the film touts Shaun as apathetic (and ‘pathetic’), he is no doubt an endearing character through his myriad of flaws as something we can relate to. In Kyle W. Bishop’s (2011, p. 28) paper “Vacationing in Zombieland: The Classical Functions of the Modern Zombie Comedy”, Bishop notes that the downfall of any unit in traditional horror treatments of zombie narratives is usually the result of a hero’s character flaws. In zombie comedy, the opposite is true, indicating a subversion of the genre through the mechanism of comedy. Bishop (2011, p. 29) notes that the comedy does not necessarily work in this genre because of its gags, but rather it works on the point that such a character may find meaning (and heroism) through a realisable quest in such a scenario. Like Kelly (2013, p. 94) states, these scenarios offer, through

various mechanisms, ways to explore one's own marginality. In Shaun's case, if he is an outcast and can find purpose and meaning, then our success is also not reliant on admission to prescribed societal categories. In fact, *it is our marginality that might actually result in our social redemption.*

The importance of *SOTD* isn't so much indicated in a direct departure from the zombie paradigm but in the *magnification of it* through comedy and 'reality'. Pegg (Mauceri, 2004) notes that comedy and horror share mechanisms in that they each hold:

[a] similar kind of setup, but [one] has the payoff of a laugh and the other a scare. We enjoy being scared, in a safe environment, as much as we do laughing. I guess they're both genres that elicit an emotional response, which makes them quite similar.

While *SOTD* equally embraces some of the characteristics of horror in tandem with this comedic subversion, its power resides in the ability of comedy to isolate, and then *intensify*, cultural fears. Intensity in horror alone always runs the risk of being marginalised as a specialist genre within popular culture. By teaming horror with comedy, and in particular *the zombie* with comedy, suppressed cultural fears surrounding many of the concerns the zombie innately raises are magnified and more easily able to be explored. Furthermore, it enables the marginal unit access to a society that embraces difference through the destruction and renewed construction of its 'rules'. It allows for the subversion of traditions (a shift in the paradigm in itself) that may inadvertently limit the ability to connect the relationships between the political or social statements (intended or not) in zombie films to relatable, *approachable* and relevant discourse. *SOTD* is an example of how shifts in the paradigm, although subtle, *via comedy* may find their way into such films and gain admission into the discourses that might be applied to the zombie as a metaphor.

Kinship

In the final scenes of *SOTD*, the population, at large, learns to live with the zombies. Bruce F. Kawin (2012) in *Horror and the Horror Film*, identifies that much of horror comedy relies upon the result of the "neutralizing, civilizing or expulsion of horror"

(p. 200). On the surface, this appears to be so, as life again seems to be in order. Shaun wins back his girlfriend and she accepts his informal lifestyle. There are many scenes in *SOTD* that illustrate how the living have learnt to cohabitate with the undead. One scene depicts a sensationalist talkback show where a woman remains lovingly married to her zombie husband, much to the shock of the audience and the host. Another shows a view of zombies that have been reintegrated into society through undertaking simple tasks such a trolley collection (mimicking the initial scenes in the film of unzombified staff in a daze, undertaking the same repetitive tasks). There are scenes of zombie game show contestants where their desire to feed becomes the very thing that drives their competition with one another, and, of course, a final shot of Shaun and newly zombified Ed paying video games in their shed. *SOTD* appears, on the surface, to adopt an approach of civilizing of the zombies, however this is destabilised through the continuance of the zombie's innate nature – to bite, eat, and as newly zombified Ed does in the final scene, nibble at Shaun – his appearance is compliant, but we are reminded of his nature as he is chained in the shed. Pegg and Wright make a point of destabilising the horror tragedy through comedic optimism (Pegg & Wright, 2004), even if it is fragile, as most of the zombie 'citizens' are tethered and kept at a safe but *precarious* position. *SOTD* breaks some of the horror comedy mould of the monsters requiring neutralization for the narrative to remain successfully within the genre. The monster is incorporated rather than fully neutralised. They are included in the community but still exploited and marginalised as a reminder of the treatment of the other within our culture.

SOTD nonetheless still reminds us that transformation needn't be the end of a relationship. Even though these final scenes signal a footnote on exploitation, ultimately they bring into focus the complexities of parallel living and of colonisation of the other. The focus of kinship or colonisation is not resolved in the film until the closing scene where we understand Shaun's perspective – that kinship is *valuable*.

Slow Zombies

The zombies in *SOTD* are traditional Romerean type zombies. This is unique, considering that so many challenges have been made to the Romero canon, and as such

it is noteworthy that *SOTD* (a very contemporary treatment of the zombie) also reinforces the zombie canon. While Pegg insists this is because of how he believes zombies should behave, its connection to the Romero canon inadvertently allows the film's comic element to potentially be more easily accepted in the genre. Romero's zombies are referenced in *SOTD* by their appearance as beings that are limited by their thought process, have only primal drives (to eat - human flesh), and are generally quite slow. In fact, in *SOTD* the zombies were so slow, Shaun and Ed had time to critically debate which records from their collection they would or wouldn't use as weapons to hurl at the zombies. Their speed in this film was a central characteristic focus for Pegg (2008) and Wright:

Death is a disability, not a superpower. It's hard to run with a cold, let alone the most debilitating malady of them all..... Zombies are our destiny writ large. Slow and steady in their approach, weak, clumsy, often absurd, the zombie relentlessly closes in, unstoppable, intractable.... Another thing: speed simplifies the zombie, clarifying the threat and reducing any response to an emotional reflex. It's the difference between someone shouting "Boo!" and hearing the sound of the floorboards creaking in an upstairs room: a quick thrill at the expense of a more profound sense of dread. The absence of rage or aggression in slow zombies makes them oddly sympathetic, a detail that enabled Romero to project depth on to their blankness, to create tragic anti-heroes; his were figures to be pitied, empathised with, even rooted for. The moment they appear angry or petulant, the second they emit furious velociraptor screeches (as opposed to the correct mournful moans of longing), they cease to possess any ambiguity. They are simply mean.

Pegg reminds us that the zombie is unique amongst other contemporary monsters. Sympathetic connection (even an 'alliance' as Pegg suggests) and category ambiguity are interjected into this survival narrative through the characteristics of the zombies which are, by definition, complex. Speed simplifies the zombie's symbolism and raw aggression collapses distances and time to reflect on the 'fear of' death, rather than creating complexity. Pegg essentially privileges fear of these things (death, sameness, silence...) over complexity, which while creating some useful conversational footing, negates the kind of 'ambiguity' that he believes can only come from the creeping undead. Oblivious of, and in conflict with, our association of the monster with overt speed-aggression, the slow zombie manages to incorporate that connection to us – in fact, *as us*. This can be said of speed too, of course, with its own association with the unique characteristics of human mobility and liveliness, but there is something

quite specific about the slow zombie that Pegg notes gives us time to consider those relationships. Pegg points out that the zombie's ambiguity is amplified by not associating it with the usual monstrous suspects. It is ambiguous not only in its challenging of categories such as living/dead, human/nonhuman, but also in its lack of the lone singularity of the monster proper, as it is not 'special-ised' as the only one of its kind; it rejects categorisation even within monstrous idioms and refuses to fit anywhere at all.

As a testament to *SOTD*, and the zombie's relatable sympathetic characteristics, the zombies are easily fooled. They only recognise general movement as it relates to speed as an indication of whether a counterpart is a zombie or not. In what can only be seen as an homage to the direction of Romero, in *SOTD*, Dianne (Liz's best friend) gives acting suggestions to the group on how to be a zombie, and the characters humorously compete against others in the group to see who can be the better zombie. Even though all of the group show their ineptness, the zombies too in *SOTD* importantly echo the flawed, gullible and inept nature of protagonists as much as the flawed relatable heroes in horror comedy. Fast zombies are far too effective, instead redirecting potential important reflections towards a kind of 'limited fear'. Slow, gullible zombies expand the reflective potential of fear. Pegg (2008) writes of the characteristic of ineptitude:

However (and herein lies the sublime artfulness of the slow zombie), their ineptitude actually makes them avoidable, at least for a while. If you're careful, if you keep your wits about you, you can stave them off, even outstrip them – much as we strive to outstrip death. Drink less, cut out red meat, exercise, practice safe sex; these are our shotguns, our cricket bats, our farmhouses, our shopping malls. However, none of these things fully insulates us from the creeping dread that something so witless, so elemental may yet catch us unawares – the drunk driver, the cancer sleeping in the double helix, the legless ghoul dragging itself through the darkness towards our ankles.

Pegg mirrors our gullibility to mortality through the zombies, again proclaiming that the ordinary is just as much an alarming prospect as the fantastical world of the zombie apocalypse. We need not look much further than ourselves and our own lives to find a mirrored zombie apocalypse. Wright and Pegg allow us to reclaim that reflectivity through slowing down the zombie approach.

The reflection of mortality (life/death boundaries) is powerful in the zombie narrative (Cirucci, 2013, p. 25). In a scene where Shaun tries to distract the zombies, but is subsequently surrounded by them, actor Pegg himself panicked in that moment of filming. His fear got the better of him and an outtake appears in the DVD publication where he yells at the actors to “fuck off” (Wright, 2004). Even though a zombie apocalypse seems like an unlikely scenario, in reality, there is something about a hoard of ‘us like’ infectious monsters *who give us time* to consider our respective connections that cuts to the core of our sense of complacency with our ordered civilisation.



Fig. 17. Shaun of the Dead Film Still (Wright, 2004)

SOTD illustrates many contributions to the zombie paradigm. *SOTD* infiltrates wider popular culture through comedy, ensuring that heavier concepts such as mortality and sameness (which can be rendered inaccessible through ‘hard horror’) are tackled through this mechanism. It creates an accessibility and connection to both of the main characters (and the zombies for that matter), proclaiming that finding ones place within society is not dependent upon category access but rather that nonconformity may be the root of a more complex and accommodating order. *SOTD* also sees a sharp association with Romero’s zombies but does so through a more deliberate commentary, clearing up some of the uncertainties in Romero’s script – Pegg and Wright are not afraid to tackle the ‘z’ word. They in fact they poke fun at the resistance to the word by the scene where Ed asks if there are “zombies” outside, and Shaun asks him not to call them that because “it’s stupid”.

SOTD zombies reverent to the paradigm (Pegg & Wright, 2004). They are slow, lumbering, daft but relatable and horrible creatures, as they are presented as both monstrous and familiar. This is a reinforcement of the paradigm but also a subversion of it as it teams comedic themes, again slipping difficult concepts in to a wider audience under the cloak of comedy. *SOTD*, through comedy, isolates and then intensifies cultural fears and ensures that we are engaging with the commentary on mortality, nonconformity, and a society that has to, within its potential, reconsider the order of things, to perhaps account for (and include) marginal entities.

The Walking Dead

The Walking Dead (TWD) (Darabont, 2010) adopts a format of weekly instalments as a highly successful TV series. The series is based on a sequence of comic books by Robert Kirkman (2006). As a format, the comic provides a narrative foundation which is able to run in perpetuity. *TWD* abandons the requisite for the ritual post-apocalyptic formula ending of triumph or failure that is seen in film narratives.

Synopsis

TWD follows a group of survivors from a zombie outbreak. The series is based on the survival of Rick Grimes, a former Sheriff's Deputy, and those he leads through the trials of a zombie outbreak. The series focuses on the personal struggles of these survivors and their adaptation to the new zombie infested world they inhabit.

Paradigm Shifts in *TWD*: Perpetuity and the Zombie Latent

The main two characteristics of the *TWD* series are the format in which it is delivered as ongoing weekly instalments, and the introduction of the zombie as hidden in all of us, which I call 'the zombie latent'. The instalments focus primarily on the perpetuating ordering, destruction and reconstruction of that order. Civility is continually challenged as an example of this consideration of the order of things. The zombie in this narrative is a latent virus waiting for the moment of death to be called into action, though there is always an underlying implied relationship between the aggression of the characters and the aggression of the zombie.

Perpetuity

The delivery of the series as weekly instalments affects the narrative quite significantly by opposing the standard expectations of resolution in its genre specific filmic equivalents, instead shifting the focal point from the apocalypse to the delivery of social stories and the long term development of the characters. A climax of the meta plot is never achieved as the lives of the characters are ongoing, even though they may be replaced or replenished by others. The weekly scripts explore how the characters cope and handle life, society (finding society within their group and outside of their group), and all the tragedy and chaos that a zombie apocalypse entails. In fact, both the comic book and TV series introduce regular arrivals of various kinds of groups of people coping in various ways.

The main characters in *TWD* are surprisingly complex, giving more realism to the storyline of human survival. Because characters can be so heavily developed over such a long time span, often their stories are left *unresolved*. Kawin's earlier observation that the horror narrative relies upon a kind of plot resolve which usually includes neutralisation or expulsion of horror, becomes particularly relevant in *TWD* as it contests this (2012). Plot endings in the zombie genre tend to focus on a different kind of resolve in which there is both an ending and an open-ended result. By this, I mean that society may take the appearance of reinstatement though often this is footnoted with an 'open' narrative scene at the end, where the threat is proposed to return. Often the genre, when applied to film, leaves us with civil chaos reordered in some way but with zombies still present. In *TWD*, the survival and exploration of the characters often takes precedence over reordering. Throughout the series, there have been minor civil resolutions but these never last – the outlook is always bleak (Simpson, 2014, p. 28). The core group of characters may remain (though the characters may be exchanged for others as some are killed) but are regularly torn apart by their inability to adapt, or the physical threats of the zombie apocalypse and the continual destruction of civil order.

The writers make this very clear through a powerful injection into the mechanic of realism by adding the threat of death as a possibility for *all* of the central characters,

regardless of the accepted formulas for horror or for dramatic narrative whereby central characters survive. *TWD* disregards the tenets of character death within the structure of post-apocalyptic scenarios in general. These more central deaths (of main characters) occur at almost random moments rather than towards the end of the season or, in the case of films, in the latter climactic part of the film and with no regard for popularity: in fact, the more popular the character, the more looming the threat. The longevity of a post-apocalyptic scenario has never been attempted before as it has in *TWD*, giving the writers opportunity to explore how an ongoing, meta-climax free narrative might pan out. The threat to central 'beloved' characters mimics a more realistic threat in relation to mortality - anyone of us could die at any moment. Pegg's zombies almost repeat here where the creeping slow zombie might blatantly remind us of our impending deaths. Norman Reedus (Rosenberg, 2013), who plays the central character of Daryl, a 'redneck' yet capable, brooding saviour in the series, comments on how this automatically feeds into his sense of fear (my emphasis):

Nobody's safe in this world — on our show, as well as our group. Everyone is a moving target. I don't think anyone thinks they're going to be on for a certain amount of episodes. They think they could go at any time, and the producers have made that clear. *We are all afraid.*

Even the actors embody 'fear' - which horror is in the business of, in the first place. *TWD* eliminates any possibility of *resolution* through this kind of ongoing series with its bleak seasonal conclusions. Apocalyptic scenarios in *film* are safe; there is a foreseeable beginning and end (albeit a sometimes open end). One knows sitting in a cinema that the film will most likely end with a largely predictable conclusive climax to the narrative in a couple of hours at the most. In *TWD*, such generosity is withheld from the audience, instead insisting that a significant or satisfying conclusion may never exist. In this respect, the hopelessness and relentlessness of a zombie apocalypse is intensified, reinforcing the futility in resolving complex situations - best if one just gets on with living with the complex order/things/situations. *TWD* renders the world as pure chaos; chaos undermines the potential for reordering. Like me, *TWD* prefers its world chaotic, messy and unresolved, asking us: does ordering work?

The Zombie Latent

The zombies in *TWD* are R-zombies on the surface, however there is a significant shift in their positioning as other through what I call 'the zombie latent'. The zombie latent denotes the zombie virus's presence in the body prior to zombification. It's a dormant virus that may activate in certain circumstances, usually via death – *bitten or not* – and subsequently mutates a human into a zombie. The zombification in *TWD* does not require primary transference through biting, though this is still one of the causes of zombification. The zombie latent in *TWD* is revealed during the first season of the series during a brief stay by the characters in the Centre for Disease Control (CDC). Bio-facilities are often positioned as a desirable survival location in apocalyptic narratives involving viral outbreaks (see *World War Z*, *Omega Man*, *Day of the Dead*, *Contagion Outbreak*, *28 Weeks Later* etc.) because of the available equipment, and clean rooms and facilities for staving off and/or curing a mass infection. Sometimes the characters also find many comforts they miss such as wine, food and beds, as in the case of *TWD* (similarly in *DOTD* within the military/scientific bunker). Of course, the comforts are posited against the pitfalls of being in 'ground zero' (as this is often the origin of viral infections in APSF) and the social difficulties of living in a post-apocalyptic world. Tensions will always bubble under the surface to arise again at a moment's notice. Zombie survivors are never really able to find utopia even within the biological framework perceived as offering the best chances of outbreak survival particularly in the case of the eventual destruction of the CDC (CDC standing in as a symbol of hope) (Boehm, 2014, p. 133). The survivors do not find solace within the scientific structure in *TWD*.

It is revealed in the first season's finale and clarified in the second season, that biotechnology is unable to treat the 'virus' as infectious because everybody is already a carrier of the virus. The CDC scene ends abruptly and brutally with the suicide and demolition of the building by its sole surviving researcher who feels hopeless about the future. Jordan S. Carroll (2012) in "The Aesthetics of Risk in Dawn of the Dead and 28 Days Later" discusses the placement of biotechnological locations firmly within an apocalyptic genre by stating "the films clearly show that, failing to provide salvation from the crisis, these institutions are complicit with it." (pp. 48, 55).



Fig. 18. *The Walking Dead*, Film Still: 'CDC Explosion' (Darabont, 2010)

While the paradigm might appear to be perpetuated through *TWD*, closer examination has revealed that the last vestiges of the safety of zonal boundaries, and the hopefulness of a world where order[ing] is the answer, are jettisoned through its instalments. The perpetuity of the fears and problems in a post ordered society reject the potential for resolution, and instead adopt a position of acceptance (even though this is exposed, and should be exposed, as challenging). The virus in *TWD* is inactive but *ever present*: it's a part of the person already, who is now, by default, the complex zombie monster. This is opposed to the tradition whereby the monster is something external to the person who is able to take comfort in the ruse that he or she is able to claim occupation of a particular zone. The zombie canon claims that it is only through distributed infection methods (biting) the person is able to truly gain admittance into layered and multiple zones. The zombie *latent* however, reminds us that any perceived distance between zombie and non-zombie (human and nonhuman) is questionable. The *TWD* 'virus', in essence, rejects humans and zombies as distinct categories; if it is always and already within us as humans then the other is potentially/already us -the 'other-self'. It denies us the adoption of the category of human through 'othering the virus' and by literally assimilating Romero's concept of "they're us". The presence of the virus and its inevitable result of self-transformation renders unconvincing the notion of genetics as a method for definitive classification. The tensions between translation and purification are demonstrated in their most conspicuous way in the zombie latent. *TWD* proposes that through all of our biological categorisation desires, mutation and change will always challenge delineation at any

level. Biotechnology itself in *TWD* is ultimately unable to solve the problems of distinctions through latent and inherent monstrousness, and this deconstruction and ultimately physical destruction of the systems of biotechnology, renders it as complicit with such crises.

Resident Evil

Resident Evil (ResE) (Anderson, 2002) is a film franchise based on the popular Resident Evil gaming franchise from Capcom. The brand has enjoyed success through five film instalments of the Resident Evil series, drawing themes from its games with a sixth and final instalment planned for release in 2015. The series follows Alice, a genetically modified super soldier, through her attempts to survive and correct a zombie apocalypse which was brought about by genetic experimentation by a commercial biotechnological conglomerate with military contracts.

Synopsis

ResE tracks Alice, who wakes up in the midst of a military operation without any memory of who she is. Alice and a group of soldiers head down into an underground facility which is in 'lockdown' for an unknown reason. As she regains her memory, she realises she is the protector of what is called 'The Hive' – an underground research facility run by the Umbrella Corporation, which is an omnipotent organisation who has a particular interest in genetic experimentation. Through one of their experiments, they create the 'T virus' which reanimates dead flesh. A spillage of the virus infects all the inhabitants of the research facility, turning them into zombies. The film focuses on Alice's ability to survive the onslaught of the zombie horde in The Hive.

Paradigm Shifts in *ResE*: Biotechnology and Stillness

Biotechnology

ResE in particular represents a strong inclusion of biotechnology into the zombie paradigm; it is quintessentially about biotechnology and its creation of zombies, and the resulting consequences (which others are expected to correct) (Boluk & Lenz, 2001, p.

6). Unlike other zombie films within the paradigm, it specifically explores the teratological portent in which the consequences of genetic experimentation are realised. In fact, biotechnological warning symbols are present throughout the entire film in many scenes: biohazard symbols adorn most of the props. In homage to technological pessimism in gaming culture, drums of radioactive material are present throughout (usually signifying that monsters are close by in the game).²⁴ Where other zombie films have implicated our fleshy existence through visual onslaughts of rotting, walking, humanesque biomass, *ResE* wholeheartedly embraces the biology, its technology, and its rules of engagement through its visual cues, in particular to define and delineate. It may seem logical that mutation is related to Biology, but *ResE* amplifies the connection and reminds us of its consequences through this imagery.

The zombies in *ResE* are similarly Romerean in their physical characteristics but it was important to Anderson (2002) that the image of the zombies from the 1970s and 1980s be avoided: he wanted to offer something new to the genre in terms of visual representation. Pauline Fowler (2002), the special effects make up supervisor on *ResE*, stated that they intentionally targeted 'the medical' and researched diseases, medical texts, and visited the mortuary in order to bring a new level of realism to the visuality of the undead, further supporting the demonstration of the linkages between these zombies and Biology. While all zombies connect Biology through their presence, *ResE* quintessentially and powerfully embodies this through both the zombie's bodies and the location of the narrative within its obvious inclusion in a biotechnological facility.

The *ResE* zombie is traditional in that it adopts Romero's 'need to feed scenario'. With a new 'flesh lift' (beyond the traditional ghoulish R-zombies) *ResE* zombies are bloody, wet, broken, with leaky, infected bodies. The focus of the film *always remains on the biology of the zombie and the biotechnological hubris that created them*. The essential nature of the narrative is to demonstrate the implications of corporate underground pursuits, the feared connection to political and military pursuits, and the resulting

²⁴ In reference to the historical first person shooter game DOOM, where drums of radioactive waste provide fuel for ignition via gun fire. These drums are found in areas that the game designers populate with monsters.

power base that make these anticipated corporations 'above the law'. Even though Alice persists in the sequels to attempt to make the instigators accountable, she is doomed to relive the zombie apocalypse in one form or another again and again (through sequels that place her in the same heroic, but ultimately, failed position again and again).



Fig. 19. *Resident Evil*, Film Still: 'Zombie Scientist' (Anderson, 2002)

The first zombies that appear in this film are the former scientists or lab technicians, their blood-stained, white lab coats unmistakable. The presence of quintessential biotechnological apocalyptic science fiction markers are not hidden at all in *ResE*. Susan Sontag (Booker & Thomas, 2009, p. 53) discusses disaster fiction as being characteristically the result of science misused, although she also notes that these narratives often play out potential solutions as well. The zombie science fiction narrative, however, often removes the latter from the focus, as the genre replays the formula and associates with devastation or near obliteration of civil society – solutions may be tested but are almost never successful or lasting.

Stillness

The zombies in *ResE* are less focused on movement characteristics (as in Romero's films) and more focused on presenting fleshy differences. *ResE* zombies are still cumbersome and slow-ish (though they are quicker in some cases than traditional zombies) and not especially strong, their desire to feed makes their persistence relentless and thus their pursuit is nothing to balk at. The Red Queen (the artificial intelligence unit who manages The Hive and its safety) discusses the biology behind the zombies,

stating that the human body is not 'still' after death and that cellular growth can continue; hair and nails continue to grow and "trace electrical impulses in the brain can take months to dissipate" (Anderson, 2002).²⁵ The T-Virus (responsible for the zombie mutation) simply supplies the body with an extreme 'jolt' that accelerates and reinstates this function;

Red Queen: the T-Virus provides a massive jolt both to cellular tissue and these trace electrical impulses. Put quite simply, it reanimates the body.

Rain: it brings the body back to life?!

Red Queen: not fully, the subjects have the simplest of motor functions, perhaps a little memory, virtually no intelligence. They are driven by the basest of impulses – the most basic needs.

Caplan: Which is?

Red Queen: The need to feed. (Anderson, 2002)

The cast and crew of *ResE* discuss how there is a stillness to this film that allows for a purposeful, brooding atmosphere (Anderson, 2002). Anderson appears to encourage these moments of stillness as a device for bringing about the tone that Pegg (2008), as previously discussed, suggested as somewhat lost in horror films of today; stillness, or 'creep', allows us time to consider fears that so mark the zombie monster and its implications.

ResE is the first zombie treatment that so obviously interjects the biotechnological as an integral and consistent element of its glaring technocratic scenario. The franchise, in fact, consistently implements various genetic mutation and related plot devices to its back stories to guarantee this connection is never lost. In coupling biotechnology and stillness, the significance of the film and the zombie paradigm is revealed, as it requires us to consider the hand Biology has had in marginality and the role it plays in the fear and consequences of its hubris. It requires of us a consideration of the

²⁵ In reality some of this can be true however the understanding of nails and hair continuing to grow after death has been attributed to the shrinking of flesh giving the appearance of such growth.

benefits and challenges of biotechnologically instigated delineation and the resulting marginality.

New Paradigms

These popular culture examples highlight the establishment of a zombie paradigm in which specific, yet mutating, characteristics are employed. Romero's zombies – slow, ghoul like, flesh-eating and localised (non-exotic) – have been transmuted over time into fast, ferocious, ambiguous pursuants and then back again, never appearing the same twice.

This chapter has outlined several deviations or 'mutations' of the zombie paradigm as exemplified in Romero's narratives within the genre that he has richly contributed to. I have identified shifts which are significant in the context of the way in which zombies are used here as they allow deeper access to various and potential ways of using the zombie as a metaphor to discuss concerns of biotechnology in particular.

ROTLD implicates the mind/body split with the inclusion of the feeding on brains, and asks that we reconsider the mind/body divide. It employs comedy as a tool of isolation and enhancement of cultural fears. It gives the zombie an undeniable fleshy, wet and unavoidably horrific appearance, cracking open the boundary of the body itself as contained and ordered, and implicating the undead in the most active way possible. It positions itself within the medical and military establishments through its various scenes in medical supply companies and autopsy rooms.

ZLAND reminds us that rules, or the breaking of them, exemplify that challenging zones can perhaps only be achieved from within the order of things – that entities with ties to multiple zones might be more able to undo constrictive boundaries.

SOTD pays respect to the Romero zombie as slow sympathetic creatures that are both monstrous and familiar. It subverts the paradigm through its comedic treatment of the fears and concerns the zombie theme evokes, as it isolates these fears and enhances them. It implicates discourse on mortality and marginality, proposing a world where difference can coexist – even if it is fraught with challenges.

The Walking Dead also embraces Romero's zombies as sympathetic slow creatures, both monstrous and familiar, but it attacks the remaining 'safe' positions to view the monster from within its perpetual instalments. It rejects resolution and reordering through chaos, as solace is never truly found. Rather it proposes an acceptance of an un-ordered world. It suggests that the last distinction between categories of self/other is a deception, as everyone is already the other waiting to surface through the latency of the zombie virus. This subsequently renders the systematic ordering through Biology as ineffectual, and thus complicit, in the category crisis.

Resident Evil more obviously insists that biotechnology is at the core of the category crisis. It is solely about genetic manipulation and biotechnological hubris. It depicts that the creation of new creatures (and categories) has resulted in the unwitting destruction of itself – that its attempt to genetically manipulate has also created chaos in the ordering of things.

The Zombie: A Conclusive Paradigm

The zombies presented in this and the previous chapter, collectively enable interrogation of categories often employed in Biology. The zombie paradigm suggests that a slow, lumbering, aggressive, monstrous yet familial creature, presents various fears and challenges to us as we view it. Self-other and human-nonhuman is able to be considered in this context through an inclusion of 'brains' motifs implicating consciousness – awareness of self and the mind/body split. The zombie latent is included in this paradigm where the last remnants of zonal safety are obliterated. Slowness/speed (awareness, fear) allow for an inclusion on cultural concerns and complex ordering. Discussion of the delineation of living/dead is likewise enabled through biological scenarios as infection and mutation –the virus is implicated. The possibility of living with marginality, rather than expelling it, is explored through elements of zombie 'kinship' and through the rejection of a climactic resolution in the narratives to the zombie problem.

The delivery methods of these narratives allow for access to these. Gaming references and comedy have been employed as a way to 'tour' marginalisation. Perpetuity

drives home, above anything else, that control and containment of a resolution are not possible. The unrelenting chaos and the negation of containment through a seemingly never ending series amplifies the potential for acceptance, rather than simply attempting to reorder. The dissolution of resolution is powerful when we use the zombie as a metaphor. The lack of resolution of not only the stories (as they begin at the end and leave the end with a questionable beginning), but also in the properties of the zombies who inhabit unresolved zones of ambiguity, inescapably call in to question dualisms, categories and classifications bound by margins.

In chapter seven, I will explore the zombie figure further by discussing more detailed characteristics that these various narratives have exposed in order to begin a more specific analysis of its potential to be used in a re-reading of other biotechnological entities.

Part Three

The Zombie Metaphor: Applications

Chapter Seven: Zombie Characteristics

Chapter Eight: The HeLa Cell Line as Zombie

Conclusions

As I held the flasks from the incubator, with warm living stuff of me and others within it, I was left without words — without a way to comprehend the spectral subjects I was seeing and the gravity of the sublime and confronting stuff I was experiencing...

Postscript notes on The Anarchy Cell Line residency.

Synopsis

Part three focuses on developing the characteristics of the zombie paradigm and on the application of it as a metaphor to the biological-cultural entities of the HeLa cell line and *TAnCL*.

Approach

The focus shifts in chapter seven from the foundations of the zombie paradigm through popular culture film, to a deeper exploration of the paradigms' key characteristics in terms of taxonomies. These key characteristics not only deal with the conceptual aspects that underpin the zombie's culturally driven attributes, but begins to link more visibly, culture and science which is critical when applying the zombie metaphor to lab entities. While part three largely leaves behind popular culture as a source of information on the zombie, I will still refer in places to film as examples of the enactment of certain concepts.

In chapter eight, I both apply the zombie metaphor, and identify zombie similarities to the HeLa cell line and *TAnCL* project to bridge scientific and humanities discourses surrounding these entities, and to bring them into a shared dialogue. Revealing similarities allows for the HeLa cells to be 'primed' for the extension of the *possibilities* that the zombie metaphor offers; the similarities merely offer a way of evoking a kinship between the two, the application derives new ways of seeing such entities and indeed ourselves (as we are subject to the same systems of knowledge).

The conclusion concludes the end of part three and this thesis, and is of course a summary and an extrapolation of all that was explored herein. It also *extends* complexities and opens up possibilities for new biotech-body dialogues rather than neatly tying up the issues that science, Biology and biotechnology present. It is hoped that through these new dialogues, new possibilities for approaching the scientific ordering of things through the application of categories and zones might be conceivable.

Chapter Seven

Zombie Characteristics: Living-Dead

Earlier in chapter five, I discussed the formation of the zombie paradigm that George A. Romero's living dead quadrilogy of films inadvertently established. The various aspects of the contemporary zombie canon were created during these films, which included the introduction of this particular monster as the cannibalistic, lumbering undead that verged on a reflective reminder of self – sometimes a marker of the other, but always a simultaneous and complex layering of both in various ways. Chapter six then considered the narratives created after Romero's early work and explored the instances where the paradigm shifted. Some of the more general features of the zombie trope were raised such as the change in speed, the use of comedy, consciousness, kinship, perpetuity, and the introduction of gamer culture which gives a more active element to the narratives. In this chapter and the following, I interrogate more specific characteristics of the zombie in order to establish and articulate a more in-depth catalogue of mechanics and traits through which the zombie appears to operate and ultimately disrupt distinctions. Identifying dichotomies and traits that are productive in revealing and interrogating the tensions and debates across science and the humanities are essential when considering the zombie metaphor and its application to biotechnological entities.

I have necessarily divided the two main classifications into separate chapters to assist in tracking what are significant taxonomies associated with the zombie and indeed

the entities it will be applied to. These chapters are – living-dead and human-non human – under which several features are discussed. Under the banner of living-dead, I examine the areas of imagery and disgust as it relates to the abject nature of zombie film, the abject cadaver, reanimation and movement. These are all characteristics relating to the zombie as an ‘undead’ entity (as it occupies both distinctions). The next chapter focuses on properties of human/nonhuman crisis such as identity, self, other and the familial corpse, multiple vs solitary (the zombie horde), virus, contamination and mutation (species), and further explanation on containment contamination/unclean. These properties relate to how the zombie disrupts and occupies both human and nonhuman classification. However, there are crossovers and complications arising from structuring these chapters in this manner. For example, cannibalism, as it applies to both a vehicle of transformation through infection and as an abject action, is a characteristic that would be at home equally in the living-dead section or the human-nonhuman section as the initial reaction to it in these scenarios is firstly abjection, then fear of infection and mutation. In keeping with this attitude, I have allocated a bridging section at the end of the living-dead section, to discuss cannibalism as firstly an abject act and then as a bridge into transformation, which coincidentally leads in to the next section of the zombie’s challenge to human/nonhuman distinctions with an inclusion of its various characteristics. It does come full circle in this respect with the end of the nonhuman chapter discussing contamination and virus, which are interlinked with biting that falls under cannibalism. This structure is not only necessary because of the layered and interconnected traits of the zombie but also becomes a useful demonstration of a ‘cats-cradle’ (à la Donna Haraway) that reveals the complexity to what is an established practice of simplification of otherly entities in science. This latter point becomes one of the focuses in chapter nine. Interrogating the characteristics and refining them into these tension-filled, multiple, simultaneously operating categories, will assist in forming a language for the zombie as a metaphor, enabling connections between my experiences of Biology and biotechnology in the lab and the entities these interactions implicate (and create).

Living-Dead

*Zombies are not dead,
but they're not alive, either.
They're Schrödinger's men.*

—*Think Geek Featured Haiku ("Allyn", 2011)*

The zombie in contemporary film is represented as either 'raised' from the dead or dead and living at the same time. The zombie is generally situated in a position of being at one time alive and another time, dead, with the *illusion* of distinctions seemingly intact. This zonal pretence is quickly shattered as it is exposed through its actions and physical manifestation as being in a state that is simultaneously 'dead' and physically animated – or 'alive'. Even though this is an identifiable aspect of the zombie, the point of departure between living and that of being both living and dead is commonly challenged, blurred and obscured through narrative scenes and sequences during which the alteration takes place. It is never clear exactly *where* this moment of change occurs in these contemporary incarnations.²⁶ The obscurity of the moment where the transformation takes place, and the obfuscation of the closure of such a moment, reinforces the powerful threat to the stability of any perceived ordering of these distinctions. The undeniable occupation of each of these zones by the zombie makes them the living dead icon: in fact their monikers in the zombie genre are "the *living dead*" and "*undead*". Within this field of discourse, the properties of 'living-dead' are extensive. I have chosen to focus on the most significant markers of how the zombie challenges and occupies both distinctions of living and dead. The choices I have included are considered here as the *principal* properties under the living-dead attribute.

²⁶ In older films, the source of the risen dead was typically a cemetery, however in contemporary film this has been obscured, if not almost obliterated, from the narratives. This implies that the focus is not about what was in terms of categories, but rather on the obscurity of the delineation.

Firstly, I discuss the value of the visual image in relation to the reaction of disgust (referring to the properties of death) as it underpins the characteristics that follow it. I then examine the abject corpse itself as it applies to the corporeal presence of the zombie. Because zombies are moving, eating, seeping-waste kinds of bodies, the abject is necessary in discussing the characteristics that mark the appearance of living dead. As being alive is interlaced with characteristics of being a corpse in the zombie figure, both the cadaver and its relationship to movement are discussed – zombies defy these distinction through various indications of inter-zonal and multi-zonal occupation. Reanimation is a likely conclusion of thinking about the moving cadaver so it is also considered. Reanimation is the *junction* in which any perceived distinctions about still cadavers and moving cadavers is obscured.

Imagery and Disgust

Bodily waste (blood, excrement, urine), bodily ruptures (wounds, spilling of organs) and death (corpse, rot, decomposition) all play an important visual part in the reading of the zombie and its biotech counterparts. Whether these signifiers and symbols represent the triggers that signal the zombie through an overt presence (rotting filthy corpses) or represent them through specific evasion (sterility and reductionism), establishing a foundation that exemplifies the connection of the abject to these visually based 'signs' is necessary if we are to talk about them. Visual representation is important in conveying the abject and disgust in zombie portrayals, particularly when the zombie's movement is so intrinsic to its reading. Movement in the zombie escalates the threat of the frightening embodiment of the living-dead. It does this through the representation of often opposing visual symbols such as the dead body *and* movement. The body is represented as abject dead *and* alive, as infectious *and* doubly seeking, and as rotting but still prevailing – it is without care for our sense of morality, fear, or civility, and communicates this through its very visual fleshy, biologically activated infected, bloody, rotting and pus filled body. It is again an emblem of the complexity of categorisation, as it suppresses any ability to be bound to the process of delineation – this is best represented visually as an ultimate confrontation to the viewer.

Imagery plays a powerful role in the zombie animated corpse 'story'. Notwithstanding the power words might hold at the hands of a skilful writer, ultimately, without visual imagery the abject physicality of the rotting corpse may only be imagined; there is something quite unique and irreplaceable about seeing the animated corpse, as opposed to having it described textually. Angela M. Cirucci (2013) places Susan Sontag's dialogue on photographic documentation and imagery in the context of correlations between zombies and digital media:

The presumption remains today – even in an increasingly edited and touched-up world – that the image relates to a phenomenon in the real world (Sontag, 1973). Because we are willing to believe in this reverse-mapping of a photograph to a real phenomenon, we have come to rely on pictures to tell us tales that we otherwise could not believe or envision for ourselves... we are fascinated by photographs that show us worlds that we have never experienced. (p. 18)

Cirucci goes on to discuss that identity and the manner in which it is portrayed is unique to, and significant in, photographic imagery. Extrapolating this into a more visceral relationship (as Cirucci is talking about correlations between Facebook and the zombie allegory) it is clear that imagery in its uniqueness holds its own set of meanings and messages that text does not. Tina Chanter (2008, p. 1) goes on to note that film, in particular, may offer even more alternative opportunities for the subversion of visual identification as a normative practice (often seen in photographic representation). She notes that film can "open up the possibility of transforming the terms in which dominant socio-symbolic representations construct identification as normal." (Chanter, 2008, p. 1). Likewise for Kristeva (1982), the "unmasking of death" (p. 3) is revealed through seeing first and then experiencing. Roland Barthes (2010 [1979]) talks about the image and the corpse in *Camera Lucida: Reflections on Photography* and states upon seeing an image of a corpse:

If the photograph then becomes horrible, it is because it certifies, so to speak, that the corpse is alive, as corpse: it is the living image of a dead thing. For the photograph's immobility is somehow the result of a perverse confusion between two concepts: the Real and the Live: by attesting that the object has been real, the photograph surreptitiously induces belief that it is alive, because of that delusion which makes us attribute to Reality an absolutely superior, somehow eternal value; but by shifting this reality to the past ("this-has-been"), the photograph suggests that it is already dead... (p. 78)

Barthes makes a point here of showing that the image of the corpse complicates the reading between living and dead. The image works in this way because of the tension between what the image is of – once was – object, dead – and now is – experience of death, active. The image of the zombie then, with this in mind, is rendered as an intrinsically powerful one because it implicates ‘was’ and ‘is’ simultaneously, and then brings this to the experience, creating a doubled intensity – a conflict and challenge where what we understand as a corpse is not only experienced in a ‘living’ (active) image but also as an ‘active’ ‘object’. This almost fills in the gap in Sontag’s close relationship (in which I am using as a mediator between corpse and self) allowing for a similarly intense experience akin to ‘being there’. If these various descriptions of the close relationship between imagery and imagined reality are to be taken note of, then filmic visualisation as ‘moving documentation’ is the most capable and significant technique for communicating the abject (aside from actually being there).

In zombie films, death as a biological process (which is normally hidden in contemporary civil society through the sterility of the hospital and the ritual of interment) is not only brought to ‘life’ but also carried through into the ultimate abject *vision* of the living-dead. The doubly abject reanimated corpse festers, and while its decay is evident visually, usually, death implicates change through process and progress of decay with the final inevitable disintegration of the body. Living-dead imagery embodies (quite literally) the refusal to be contained in the condition of death. It does this by visualising the energy of ‘decay’ and by simultaneously refusing to whittle away completely, because imagery is sustained through either documentation or memory recall. While the rotting of flesh is ever present in the imagery living-dead, it is defiantly never fully fragmented or collapsed. Furthermore, bacteria, pus, virus, mutation through the threat of biting and subsequent infection are also present in the imagery, eliciting the experience of disgust (as per Kristeva’s note that seeing comes first, experience is triggered by/through it).

While ‘disgust’ is normally seen as a moral measurement via recognition and ranking through moral and social understanding – or ‘taste’ (Miller, 1998, p. 2), here it is used in a more physical sense – a reaction in that Spinozian-Kristevian sense: as a result of the interaction between the threatening corpse and those who would gaze upon it.

Spinoza (Deleuze, 1978, p. 1) called this kind of moment 'affectio' – a useful term in relation to the concept of disgust, as the self is so affected by such an experience. Without the affectation of the body upon which emotive-physical reactions (the experienced feeling of 'disgust' and its resulting physical or emotional affects) result from the interaction between the person and zombie, in particular as the representation and impact of the doubly abject corpse – the animated zombie corpse – is lost.

Steve Jones (2013) in "XXXombies: Economies of Desire and Disgust" notes that the living-dead:

are conduits for pestilence. Fear stems from ... human susceptibility to infection ... disgust is rooted in disease avoidance. Furthermore, disgust is closely related to distaste and is principally designed to protect organisms from orally consuming contaminants ... zombies potentially evoke this instinct. (p. 200)

The confrontation with contamination is visual, and relentless. Its visuality implicates disgust at its most useful level to instil avoidance-immediacy. These sentiments cannot be adequately communicated (particularly in the instance of contamination) without visual demonstration because nothing implicates "...archaic, conflicting impulses" (Grant, 1994, p. 122) like a physically threatening (yet enthralling) monster through its horrific demonstrative imagery. Kristeva (1982) would suggest that disgust is a reactive experience which warns or incites the observer to keep oneself at a safe distance for containment: "Apprehensive, desire turns aside; sickened, it rejects" (p. 1). The power of the experience of disgust, however, is not as simple as safety – she goes on to comment that: "And yet, from its place of banishment, the abject does not cease challenging its master" (Kristeva, 1982, p. 2). With disgust comes confrontation and a kind of reflective element in which the one who is viewing the abject tries, but fails, to resolve the impact of such an experience – this is noted of viewing the cadaver in Kristeva's work, which begs the observation that the zombie which is living and dead complicates this reflective experience further. Resolve, if slipping away at the feet of abject confrontation (disgust) of a cadaver, is utterly devoid of potential for resolution with an entity that is doubly complex and unable to be resolved in its status as either alive or dead. Disgust is the point at which one is open to being challenged by the abject. The visual appearance of the zombie is death in-

carnate, but its movement through film makes it complex as death and life – embodying the layers of abject possibilities, which is extended through the dead body (contamination, rotting), also being a living body (infection, open painful wounds, experience of dying/ death). This means that disgust through seeing is a kind of trigger for confrontation, and ultimately for the challenge to the understanding of the propelled, observed, and embedded abject subject; *imagery through seeing and disgust through its related experience of the abject, signals the meta-threat of the zombie.*

The Abject Cadaver

Establishing that seeing and experiencing the dead-undead signals threatening circumstances, a deeper look at the cadaver itself as an abject subject is important in understanding what exactly is at risk. Sandrine Sanos (2012) in her book *The Aesthetics of Hate: Far-Right Intellectuals, Antisemitism, and Gender in 1930s France* notes that the abject originated historically as the exclusion of other, and that abjection arose out of our “material inability to avoid contact with abject ‘things’” (p. 13). She goes on to note Kristeva’s definition of the abject in general as “fallen object” and that which can never be resolved or removed from thought because it is oppositional to the ‘self’ (Sanos, 2012, p. 13). She outlines the importance of discussing the origins of the abject because it helps to connect the body in relation to culture: the abject is not only a set of signals and reactions – or even as a philosophical exercise in these mechanics – but rather an action or moment in which one is confronted with the perception of civility through the revelations of our relationship with the materiality of the body in a social and cultural context.

Hannah Westley (2008) identifies the abject as having two positions – that of ‘to abject’ which is actioned upon another, and ‘to be abject’ which is a state or “condition” (p. 188). ‘To abject’ is to espouse an act of expulsion where one purges that which is not considered to be of the ‘proper’ self, whereas to be abject is to be in a *state* of repulsion *embodying* that which is not accepted as the proper body. The condition of abjection is threatening to society, while the act of abjection is necessary to maintain its borders. As a contradiction, this tension plays out upon seeing a dead body, whereby the viewer abjects and maintains societal boundaries through this act of viewing, while the dead body embodies abjection and threatens the boundaries. This both confirms

ordering and disrupts it at the same time. The corpse is not only an abject subject, it is also the incorporated and disruptive counterpart to a discourse on the complexities of social ordering.

For Kristeva, the corpse is the decisive representation of the ultimate compromise of bodily boundaries themselves. It is not death itself that is to be feared, but the reminder of death as 'cast away' from the concept of life which is most threatening (Kristeva, 1982, p. 2). When the two are combined as in the living dead zombie figure, the critical confrontation of the boundaries of the body and identity are ultimately challenged. Kristeva (1982) also notes that the body, in order to retain its integrity, must "bare no trace of its debt to nature" (p. 102) and therefore must be free of any evidence of encounter with the threat of the proper body such as marks or openings. This means that the body should be intact and without any sign of being anything other than a perfect body. This implicates many issues of course, such as social acceptability of things like aesthetics, age etc. But here I am using this in its most extreme potential - that of the open wounded body. Kristeva (1982) notes that any evidence of these threatening encounters would signify "*the impure, the non-separate, the non-symbolic...*" (p. 102).

In chapter three, I discussed Latour's concepts of purification and the conflicting concept of hybridisation. Applying this to the abject (as Kristeva implicates the concepts of purification and translation through the pure/impure body and the lack of resolution of this during the disgust-conflict-challenge), the living dead body may also offer a challenge to the containment of a dualistic scientific representation of the body within a culture. This is because the body in science is only officially recognised as dead or alive (in texts, studies and formalised scientific data).²⁷ Additionally, the body in Biology is 'sterilised' in an attempt to remove abjection from the process of

²⁷ There are of course many instances of discussions from within science on the reading of the body as alive or dead as a complex subject but this is only ever really discussed in order to find a new goal post for the classifications, such as in the case of how one is to medically determine whether a subject is dead or not. It is also discussed in terms of mental health in relation to those working within the medical fields, such as in the case of those who need to deal with donor cadavers. Ultimately, most of these discussions sit outside of the formalised standards for understanding the body in the field of Biology.

this challenge through confrontation when such a body is observed – also correlating with a disgust-related reflex (where one attempts to expel from contact or view that which is confronting); the two settings (viewing the abject *zombie* body and viewing the body in science) are connected in this way.

The zombie disallows any escape from dualisms as it is both alive and dead, corpse and animated, other and self; *it is simultaneously representative of the threat and the threatened*. This threat is compounded through the simultaneously occupied zones of living and dead. It occupies a threatening position of outside of identity, ego, self, and society (which includes cultures), and simultaneously occupies them from within also. As Kristeva (1982) noted, society is threatened by its outside in the presence of the danger that the corpse represents:

Excrement and its equivalents (decay, infection, disease, corpse, etc.) stand for danger to identity that comes from without: the ego threatened by the non-ego, society threatened by its outside, life by death. (p. 71)

All of Kristeva's tenets, and more, collide in the zombie figure. In true zombie style, this monster creates complete chaos as it murkily merges and compounds the tension created through the complexity of the hypothesis of containment. It is a kind of thematic looping where it is impossible to escape the possibility that such zones might be so severely blurred.

As the cadaver is the ultimate symbol of the unclean and improper body, it is often envisioned as having the inside moved to the outside of the body through the breaking of skin; the corpse is a symbol of a body whose "fragile container" (Kristeva, 1982, pp. 3, 53) has been broken open. I want to make a distinction here, however small, that the 'corpse' and the 'cadaver' can be applied to specific, but not fixed, uses. Technically, the legal definition of a cadaver is that it is set aside for medicine, whereas a corpse is set aside for burial (Duhaime, n.d). This is a distinction which positions the deceased as either biological or spiritual. Both, it should be noted, are used in medical discourse, although corpse is a more evocative terminology as it is also used outside of the medical field (and applied to any dead body), whereas cadaver is used mostly within medical terminology (and applied to a *human* dead body especially

when used in a medical context) (Refractor, 2001, p. 154). The cadaver is the embodiment of the subject of being dead and thus provokes the subject of mortality and humanness. It is often used in medicine and science to describe a deceased person as a manner of labelling. This enables a process of seemingly detached examination – a kind of objectification that allows reductive analysis of humans in particular to take place. The corpse, then, is a more visual and spiritual embodiment of the physicality of death applicable to emotional readings of a dead body implicating a cultural resolution (burial) rather than a medical one (dissection).²⁸ Both readings are related, intertwined and connected, and neither can be considered without the other in Western understandings of death (as both material and emotional readings of the body apply) but the distinctions are useful here, as I discuss both the physicality and subject of death.

The first encounter in visual based narratives (screen, image) with the corpse is dominated with visual markers. Visuality, as I have discussed, is an important aspect of the powerful combination of the experience of disgust, confrontation (and therefore challenge to understanding of classifications) and the more fundamental necessity of recognising the zombie (so the challenge can become specific to the *types* of classifications included in this confrontation). Such visual markers in the corpse specifically may appear to differentiate the body between its living and dead classifications such as open and unhealed wounds, body colour, bodily contortion, movement and often visible, fatal unreversed trauma. These are intrinsically associated with the ‘dead body’ as the changes are often oppositional to that of the ‘living body’, scaling from the still body with an abnormal pallor to an obviously rotting *and* incomplete body. The further along the temporal scale of ‘post mortem’, the more significant these changes appear, and the body is intertwined with both cadaveric and corpse visual markers as both ritual and biological signs may start to appear (the body disintegrating, the body embalmed, or ‘laid out’ ritualistically). However, rescuing us from the assumption that the integrity of these visual distinctions between living *and* dead (and thus their categories) are potentially unwavering, we simultaneously see shared

²⁸ see Margrit Shildrick (1997, p. 13) on mind/body soul/body split in the medical/anatomical model.

ambiguities of ‘repose’ in both the cadaver and ‘the body at rest’ in visual representations of death. In some cases, for example in fine art, the body’s post mortem temporality may be depicted as spanning all of these moments simultaneously, encompassing all manner of temporal signifiers such as repose, expression, and decomposition (Byron, 2013).²⁹

The artwork *The Body of the Dead Christ in the Tomb* by Hans Holbein (1521) is unable to be reproduced here due to potential copyright restrictions. *The Body of the Dead Christ in the Tomb* can instead be accessed via <http://noslides.com/hans-holbein-the-younger/the-body-of-the-dead-christ-in-the-tomb/>

Fig. 20. *The Body of the Dead Christ in the Tomb*, Hans Holbein the Younger (Holbein, 1521)

This is indicated also in a different manner though our ceremonies of mourning where the viewing of deceased loved ones are often (if lack of visual trauma allows) dressed and made up to look as though they are simply at rest rather than dead, having many markers of death obliterated through processing by morticians. Memorial photos taken during the 19th century as keepsakes often displayed the deceased as sitting and resting rather than dead. Ingrid Fernandez (2011) notes of this phenomenon: “Memorial photography attempts to re-establish bodily and social boundaries by reconstructing the corpse as a living body” (p. 347). We allow our perception of death to transcend temporal concepts of mortality and its physical processes, often avoiding representations of the abject even though the act of casting out of the abject through posing and making up the dead to look like the living reposed, is in itself a signal of the power of the abject subject. In the case of Holbein’s painting of cross temporal death-corpse imagery, both strategies are embraced, and through its *confrontation*, the power of the abject subject is apparent.

²⁹ Art often performs this testing bed for ideas, reactions to political, social and technological happenings, and is used as an example throughout because it offers a mode of thinking through social problems and concerns – similar to film.

The artwork *Memorial Photograph* by Alice M. Boughton (2010 [1910]) is unable to be reproduced here due to potential copyright restrictions.

Memorial Photograph can instead be accessed directly via <http://melisaki.tumblr.com/post/1139917419/two-women-under-a-tree-photo-by-alice-m>

Fig. 21. Memorial photograph by Alice M. Boughton – the woman on the left is deceased (Boughton, 2010 [1910])

The zombie itself is a quintessential visual representation of *axi*-temporal abjection ('*axi*' meaning connected/intersecting) pushing forward, back *and* through the boundary and confrontation of the end of life into life-death. The zombie is all at once, and quite literally, body, cadaver, corpse and active-alive – through the visual representations of its bodily colour, its contorted or broken gesticulations, its insides outside, its sounds, its decomposition and its activity where it is in motion rather than at rest. The only sign of repose is when it is in an ambiguous momentum/moment of mutation or it is readying a juxtaposing action in which it will reveal that it is both dead *and* alive. This contrast in response to the cadaver-corpse-active body is only possible because the viewer is comforted by its apparent *irreversible* death. Beyond Kristeva's abjection of the confrontation of one's own mortality is that of the frightening prospect of *beyond* mortality where identity is lost and the body is co-opted by the clock of abject decomposition, not only the loss of the 'philosophical self' or 'soul'

but also the loss of elements of the 'material self' or body.³⁰ The abject zombie as both corpse and 'alive' is rendered exponentially confronting and challenging, as it not only embodies the challenge to the intact self but also the desire for the reconstruction of existing social boundaries and the living body. The abject living-dead, presents, in this case, as a defiant symbol of contested and simultaneously accepted classifications.

Reanimation

Rising from death as reanimated flesh is a compulsory aspect of zombie creation. This act punctuates the moment when the corpse becomes the more complex living-dead. This is not to say that death in these narratives is a finite state where taxonomies are given weight, but rather death (or its signs) points out the 'problem' of the taxonomical condition[ing] of how we understand death. We know this because there are many challenges to the exactness of the moment of death in contemporary zombie narrative. Of course, this is echoed in medicine as previously explored through discourse on establishing when a living body is rendered officially dead for donor reuse, however these discussions remain largely in the internal construction of science and medicine.³¹ Between the prescribed margins of *living* and living-dead, specifics as temporal moments are obscured, allowing category distinctions to be opened up for discussion. In true monstrous method, these moments of mutation *should* be impossible to locate, as to do so would reinforce the very distinctions such a monster is employed to threaten the stability of. For example, in the film *28 Days Later*, the character of Mr. Bridges is infected by bloody cast off from a contaminated crow which infects him and turns him into a 'zombie'. There is a very brief pause, however the

³⁰ Philosophical self draws upon the works of Robert Kirk regarding the philosophical zombie – a discussion about the location of the self in terms of cognitive thought, qualia, consciousness and sentience which ultimately indicates that the 'mind' as a general term of these elements embodies self identity.

³¹ For example, such discussions are undertaken through studies and published papers aimed at the medical establishment. Rarely are social or cultural examinations included in the medical establishment as integral considerations other than when needed for ethical approval. These kinds of papers are often geared towards the medical establishment. Weasel (2001) for example notes this of most areas of cultural significance in science such as the inclusion of feminist discourse within the field of Biology.

exact moment where Bridges' mutation happens is concealed. This moment of change is implied as profound within the narrative, yet the specific location of the borders between these boundaries is intentionally made vague.

Reanimation is heavily adopted in classical story telling too. For example, it is employed in the works of Shakespeare as a symbol of profound loss where loved ones are separated, only to be reunited at a later time. The loss is so profound that the characters cannot perceive of it as separation and read it as resurrection instead, such as in *A Winter's Tale* (Benson, 2008). This concept of loss and reunion is subverted in the zombie narrative through the infection of the familiar who indeed returns – but as a zombie. The profundity of loss is subverted and even made redundant by the unstoppable force of the zombie who does not care for such affects – the zombie slams the desire to distinguish between categories with its intrinsic indifference to them. The potential for instability of the categories is also suggested through the resurrection of 'the familial' who are not 'intact' and not the same as before.³² This is not to ignore that these narratives often carry with them signs of connection both physically as reminiscent of familial counterparts or emotionally through narrative (as exemplified through the stories of loss), but they do demonstrate the idea that the resoluteness of borders between things are in fact fragile.

Reanimation is the moment when civility (the body proper, the ground as barrier, the 'body undivided' as sacred (Ferber & Wilde, 2011, p. 3) is corrupted. Reanimation signals an indifference to civil society (staying put in the ground – not breaking the honoured rituals of interment) may spread its indifference towards civil behaviour. The point where the mutation occurs, while not meant to be located temporally, represents the juncture where boundaries are revealed as unstable. Reanimation in the

³² Familial referring to the familiar *and* 'family' as those who the viewer knows and understands as a complete person.

zombie narrative commonly takes place as a result of infection. Often in the first instance of mutation, chemical or biological manipulation is the cause, but infection from zombie to human through biting characteristically takes place thereafter.³³



Fig. 22. *Creepshow*, Film Still: *Zombie rising from the grave* (Romero, 1982)

Resurrection, as the 'spiritual' aspect of reanimation, is also implied in the zombie allegory through the undoing of the body as proper - 'intended'. Caroline Walker Bynum (2013) notes on the subject of resurrection in Christianity (where resurrection takes place as a re-assemblage of the body proper rather than the disintegration of it):

Changes in resurrection metaphors to stress rot and rupture, followed by regurgitation and impassability, suggest that the body that rises is quintessentially the martyr's body, in danger not just from pain and mutilation but also from scattering, dishonour, even cannibalism, after death. Resurrection is a victory over partition and putrefaction; it is both the anaesthesia of glory and

³³ See *ROTLD*, *ResE*, *28 Days Later* and several films which suggest the outbreaks as viral (denoting biological causes but perhaps not 'created' as such) these include films like *World War Z*, *SOTD*, *TWD* etc. and still implicate Biology although perhaps as a result of evolution, development, environment (*Pathogen*), population issues etc.

the reunion of particles of self. Resurrection guarantees not only justice denied to the living; it guarantees the rest and reassemblage – the burial – denied to the dead ... it [understanding of resurrection] owes something as well to slow shifts and deep continuities toward the cadaver, and toward biological process... (p. 58)

If Bynum refers to the re-assemblage of the self and avoidance of inevitable decay through resurrection in Christian text in particular, then the resurrection of the cadaver proper (the *physical* resurrection) subverts the Christian re-assemblage – the saving and elevation of the spirit. The zombie through its overtly uncontained and *broken* abject corporeal presence stands in opposition to the proposition that one can be saved after death. Rot is not avoided, it is still inevitable, and ‘justice’ through resurrection is not distributed when shifted into zombiedom – it is indifferent to it – which is an assault on the idea that salvation through civility is possible in this corporeal and taxonomical context. Instead, the zombie plays on our fears of infection and decay through making us endure with ‘putrefaction animated’ well after dying. It reminds us of our corporeality in connection to our spirituality – it subverts the concept that something will prevail without the body, and vice versa through the purification of death through its rituals. Even though, in essence, resurrection rejects the notion of being ‘at rest’, it also, through the zombie parable, rejects the binary of pure/impure and the split between mind/body that we envision is possible through civil action.

Movement

As Richard A. Gilmore (2005) states “there is liveliness to the walking dead” (p. 121). The undead are ‘performed’ on screen as living entities while simultaneously occupying the state of being a corpse. Movement is a key element in the representation of the lively corpse. This liveliness of the zombie, (relating to it the philosophical works of Baruch Spinoza (Deleuze, 1978)), indicates through its movement not so much a state of being alive, but rather the more ambiguously and challenging position of *not being at rest*. Undead is an appropriate term when we consider Spinoza’s assessment. Philosopher Gilles Deleuze (1978) explains Spinoza’s concept of rest and movement as a relationship:

The individuality of a body is defined by the following: it is when a certain composite or complex relation ...of movement and rest is preserved through all the changes which affect the parts of the body. It's the permanence of a relation of movement and rest through all the changes which affect all the parts, taken to infinity, of the body under consideration. (p. 5)

Furthermore, Deleuze (1978) notes the concept of "affectio" as affects on the body through interaction with other bodies: "Spinoza will say that an affectio indicates the nature of the modified body rather than the nature of the modifying body, and it envelopes the nature of the modifying body" (p. 5). In these kinds of encounters (such as in the lively corpse and the living body), illicit emotions, which are experientially based so that bodies interacting are affected by one another, are in essence modified by the presence and interaction of each other in turn. This is an account of movement rather than one of immobility – even the experience of encountering a zombie is lively and infectious as it interchanges dynamically between living-dead. The zombie ceases to be an object of observation (as would be the case of the corpse in medicine) and becomes a subject and agent as it enacts both a corpse and liveliness-encouraging affect upon all agents – embedded in each other's experiences, encounters mutually affect one another.

The concept of the relationship between rest and movement is very complex, and movement is only ever significantly disrupted *when a body becomes a corpse*. K. Silem Mohammed (2006) quotes Spinoza:

I understand the Body to die when its parts are so disposed that they acquire a different proportion of motion and rest to one another...(even when) the Body is thought to be alive – the human Body can nevertheless be changed into another nature entirely different from its own. For no reason compels me to maintain that the Body does not die unless it is changed into a corpse. (p. 95)

The corpse, upon being animated again (or to appropriate Spinoza's language "*changed into another nature entirely different from its own*") is no doubt the ultimate affectio – modification – *mutation*. However, Spinoza considered this new relationship of the corpse as simply a shift in a continuum rather than a reversed binary state of being, further complicating the concept of corpse, as he acknowledges that functions and signals of 'life' may continue after the corpse state has been observed. This

suggests that the relationship between rest and movement of the living state and the dead state is not finite but rather, *different*. In medicine for example, experiments have been done on pigs regarding life extension during fatal wounding that has rendered the pigs as visibly deceased (Trivedi, 2006). However, they are in fact in a deep state of coma. Their blood is replaced by nutrients and the bodily temperature is dropped, giving the appearance (and biological characteristics of 'not complete' or 'whole') and physical status of 'death'. This is carried out in order to 'buy time' to repair fatal wounds so that the pig may be resuscitated much later than was traditionally possible. This is also the case in donor cadavers where the donor is kept functioning beyond the proclamation of medical death in order to be of use as a donor for needed organs. The threshold for death in the traditional and 'truthful' (scientific) sense is being shattered. If death is being complicated through this condition, it is perhaps a 'difference'.

This change in motion is not without its own problems as it is in danger of becoming a distinction through the examination of the temporality of the shift. This shift that occurs refers to the state of a body once it becomes a corpse. Richard Greene (2006) notes that "death and undeath have something in common – they can both be contrasted with being alive" (p. 6). This suggests that undeath is a state which is contrasted against the boundaries of the currently understood binary state of being. It is held up against the *difference between* rest and movement – stillness and motion – relationships pre corpse state (though both Mohammad and Greene do describe undeath as a state of being once dead, reanimating and not being at "rest"). However, rest and movement *in the corpse* as transitional relationship further problematises that blurry zone *between transitions themselves*. This shift is not meant to be delineated but rather considered as a *junction of blurring*.

Society also adopts an understood moment of the shift between body and corpse, usually in the form of ritual such as burial rites that are considered an *act* in which the dead are 'put to rest' (Sprague, 2005, p. 69). This indicates that rather than delineation taking place, there are multiple readings of the boundaries which allow necessary activities to take place within society and cultures. The transition in Spinoza's rest and movement is best represented as that – a *transition* which of course opens up

many possibilities for rewriting the distinction between body and corpse, such as considering it a layered continuum rather than a separation of conditions or chronological and linear sequence of states. These locations of the shift between movement and rest are problematic as they also may encourage delineation, yet are multifaceted in their use, in that they allow for many advantageous readings to take place. It is through the *activity* of questioning temporality rather than the fixing of it that may result in questions about those delineations and the revelation of their use as almost arbitrary (because they *can* be questioned). Recent instalments within the zombie genre support this cycle of rewriting, however they embrace the concept of *re-blurring* distinctions rather than redefining them, as we see death as a fleeting hybrid moment and even absent at times. *28 Days Later* is a prime example as the moment of infection and transition occurs in a juncture of bodily rest rather than as a clear moment of death. *ResE* employs a similar mechanism, where the character Raine is mistaken for being dead while she is in fact sleeping or simply 'still', and at a later point momentarily rests her head, appearing to be asleep but *then* transitions into a zombie, allowing the 'trick' of rest to undermine a definitive state of death through its reference to sleep or 'the body at/in rest'.

The lively corpse can offer us a way of creating parallel relationships of the corpse to the 'live' body and subsequently to *our* bodies and how they are defined. The zombie, when approached from the context of philosophical explorations of states of rest/movement in living and dead bodies, reveals a rest/movement complexity, rather than a simplification of 'being'. Furthermore, as in the case of Spinoza's attempt to indicate the complexity of living and 'opposing' dead states, the hybrid states always mutate as he recognises that death is merely "a disruption or redistribution of parts" (Mohammad, 2006, p. 96). The zombie is the very visual and physical epitome of the state of being both living and dead; it is the most recognisable characteristic of the figure, and implicates within its positioning of these overlaid and intertwined distinctions, many facets of these states.

Cannibalism

Cannibalism, which is a contentious label in the zombie genre (because zombies are not considered to be, nor are they presented as, solely human) has implications for *both* of the major binary distinctions I employ in this discussion: living/dead, and human/nonhuman. It is for this reason, as mentioned above, that I use it here as a kind of bridging mechanism between chapters and as a kind of way of threading together some of these characteristics. Cannibalism as the method by which the human transforms, yet remains connected, is a mechanic that entangles with aspects implicated by both of these headings. Some of these aspects include: reanimation, infection, mutation, consumption of the 'same' as the consumer, and tremendous abjection. Cannibalism is always predicated by, and embedded within, abject imagery which specifically fouls bodily and civil margins. It is by no mistake that cannibalism, or at least biting, is part and parcel of the process of the transformative moment in the zombification process, and as such, intersects these main sections. I firstly consider the etymology, *and thus flexibility* (and potential methods of use), of the word cannibalism before proceeding. Cannibalism's multi-layered origins and uses in examining cultures and ideas such as abject action, social taboo, reveal a flexible term that can be applied to various kinds of consumption within various contexts. This flexibility through etymology is useful when applying to the zombie metaphor as it allows others and their contexts to be included in such applications. As such, an etymological examination may prove useful.

Etymology and Use: 'Axi'Cannibalism

The use of the word cannibalism demonstrates varying degrees of specificity and certainly varying criteria; in essence, the word cannibalism has been applied to radically different behaviours and cannot be figured as a fixed classification, even though it carries with it certain associations. Many members of the zombie genre fan community object to the use of the word cannibalism in describing zombies because they do

not eat their own kind (Cannibals, n.d).³⁴ It is also noted that philosophically, the zombie is no longer alive but craves its former existence, and coupled with its primal needs (feeding), it seeks out living humans rather than living dead ones (O'Bannon, 1985) – a way of consuming that which one desires to be. Additionally, some fans note that viruses need uninfected hosts to spread so it would make sense that zombies would want to eat 'others' (similar 'species') that are not infected rather than ones that were (Hanzo, 2009). This connects desire, needs and Biology together in the act of zombie consumption.

Essentially, in order for a zombie to be considered a cannibal they would be required to eat other zombies. The term cannibal however is used as an evocative indicator of abject behaviour in the zombie figure, which concurrently occupies both *human and* nonhuman categories. As the only word that adequately describes the act and abjection of being eaten by something that is at the very least identifiable with the self, it is a significant element of the zombie, both as represented through screen figures and in actual biotechnological examples (such as in the case of cells which consume a broth sometimes containing, and thus consuming, the same species). The possibility for such a term to be used as a term of distinction between self and other is already called into question through the zombie as blurred category creature. Being 'messy' and blurry, cannibalism as an abject act of the zombie cannot be easily dismissed from the cultural vocabulary in this case.

³⁴ This is also noted in many of the films within the genre: Dr. Millard Rausch in *Dawn* notes "The normal question, the first question is always; are these cannibals? No, they are not cannibals. Cannibalism in the true sense of the word implies an intraspecies activity. These creatures cannot be considered human. They prey on humans. They do not prey on each other, that's the difference!" (Romero, 1978). As the nature of 'human' can be disputed in the zombie genre, zombie cannibalism remains contested.



Fig. 23. *Return of the Living Dead*, Film Still: 'Zombie Eating Brains' (O'Bannon, 1985)

Etymologically, the word cannibalism specifically derives from the Spanish word Canibs or Caniba which is the name of a tribe of people who were believed to have eaten other humans (Dow, 1996). Cannibalism is deemed taboo within Western cultures as a significant symbol of the persistence of abjection. There are two kinds of cannibalism which are noteworthy here, since I want to exemplify how the word should not be taken as definitive of a certain approach to the eating of a specific kind of flesh. Often the contemporary use of the word has adopted a biological/scientific approach with the implication being an act carried out strictly between the same species. This is challenged by the academic use of the word which includes subsets of cannibalism used to further describe the act in a cultural context, rather than a species-based context. For example, endo, and exo-cannibalism are the two terms which describe eating of one's own tribe (endo) and eating of one's enemies (exo) (Dow, 1996). Along with these anthropological citations, race is imbued with otherness and such acts in history were seen more as acts of eating a distanced 'other' rather than the 'biological same': "The symbolic treatment of the enemy as a game animal was an extreme form of racism" (MacCormick, 2003). Similarly, endo-cannibalism is seen as eating the social same rather than the biological same as an act of respect and religious or spiritual consumption, which is seen as necessary for the spiritual longevity of the deceased (MacCormick, 2003). Both suggest terms of 'other' and 'same' and are indeed problematic, but nonetheless, these accounts of endo and exo-cannibalism shape the concept of cannibalism in earlier texts as political, racial and social, undertaken in

the most extreme manner via acts of war. Therefore, the etymology of the word cannibalism does not strictly denote human to human (as biological demarcation) consumption, but rather is an anthropological derivative of the *concept* of consumption of the similar or identifiable with the self.

Furthermore, eating one another (or even the other when multiple categories are concerned) intrinsically implicates the self and as such indicts a disbanding of the category of 'self' (Michel, 2007, p. 236). Cannibalism also indicates dissolution and a re-inforcement of the margins between nature and culture, and body and society. Russell West (2007, p. 237) notes that cannibalism blurs the distinctions between these categories as it melds one into another through the act of biting and eating another. At the same time, he points out that cannibalism as an act was established to differentiate between cultures and natures so that the threat of barbarism could be avoided, or at best, identified. This is an interesting point as cannibalism as an abject action is not only relevant in zombie characteristics (as an 'image' of abject confrontation), but also more deeply as an act of complication of the separation and re-categorisation of taxonomies. Cannibalism is complex as it occupies multiple categories through blurring them, and as an affront to the delineation of the identification of the other.

Culturally, most would agree the term cannibalism is confrontational, and not always necessarily 'strict', as the fear of being eaten by something we identify with in some way is so compelling. There is very little denial that it 'feels' like cannibalism when we view or imagine a zombie, so reminiscent of the self, now a blurry hybrid of sorts, eating one's own flesh. A mutation of the word cannibalism seems appropriate given that the zombie forcibly intersects dualisms anyway. I propose the word axi-cannibalism, denoting an ability to traverse along varying axis of similarity, or even familiarity and connectedness, which leaves precisely what connections or familiarities might be present, open for a multitude of interpretations. Pan-cannibalism (all), poly-cannibalism (many), axi-cannibalism (connected, axis, derivative) are possibilities. Such terms will prove to be useful in the following discussion as this significant enactment is undertaken by agents who in their essence are *transformative creatures who use an ultimate abject action as a vehicle for transformation of others*.

Etymologically, both in origins and use, cannibalism is a complex layered term with many uses within anthropology, cultural, political and social contexts. With this layered usage comes flexibility to apply it to different contexts and retain its evocative abject nature in order to implicate the zombie 'condition'.

Biting, Infecting, and Eating.

Biting the other for some base or primal need is the zombie's ultimate act of indifference towards civil behaviour (Coonfield, 2013, p. 5). Additionally, the abject act of biting with an infected mouth is an act of violent rupture of the membrane that stabilises the boundaries of the clean and sterile containment of proper bodies. Cannibalism is regularly associated with the zombie figure (Brown, 2013, p. 10) and includes almost all of the markers of abjection: waste, infection, opening, disgust, consumption/food and corpse (especially in the zombie narratives, as it is both active and abject) and infection. The markers of the abject, cannibalism, contamination and the overreaching theme of Virus all characterise zombie culture. Cannibalism as it relates to these other themes, particularly 'virus', exemplifies a crossover of binary distinctions as it is not only abject but also transformative. Even though I go into more detail later on the subject of virus in the Human -Nonhuman section, I want to begin the conversation on this overreaching characteristic because, as noted before, this is in particular an interconnected one relevant to both sections.

In nearly all of the zombie films since the 1950s, the bite via an axi-cannibalistic act (not necessarily ingestion - but *biting*) is the means by which a zombie could infect a human, who would then turn/mutate into a zombie. Such a method and resulting outcome denotes virus-infection-spread - in essence, a 'plague'. While the kind of bite is varied in these narratives, the breaking of flesh with the mouth is associated with infection. This mirrors an understanding of the way in which bodily fluids, usually saliva, figure heavily in the transportation of the virus in real life allegories and anxieties about infections (Hepatitis, AIDS, Ebola etc.) (Hannaback, 2014, p. 110).

The device for creating zombies mutated further through the 1960s to 80s through military biological experimentation, echoing the string of biomedical advances such

as DNA manipulation – which used a virus (which has had its own information material removed) to introduce genetic information to a cell. The virus is chosen for this task in biology as it is already equipped to infiltrate cells. During this period of on screen enactments, homages to Romero such as *ROTLD* appear, showing opening scenes in a medical storage facility where chemical and biological material is stored. When opened, a gas releases, creates poisoned acid rain and becomes the instrument by which the dead initially (afterwards, bite is still implicated in infection) rise from their graves, echoing the concerns of the period of acid rain and its environmental associations (CERN, 2012) (Greenversations, 2010). These sorts of stories can be read as a direct response to the ethical and ecological discourse of the time, but more importantly, they implicate ingestion-infection which differs from the normative treatment of the theme of infection through bite. The scientific-biological to zombie relationship, and more specifically the fears associated with biotechnology, in zombie narratives continued well into the 1990s such as *ResE* (Kellner, 2009, p. 85). This period saw some stronger additions to the narratives of viral experimentation, superbugs, and military chemical warfare. Origins of the zombie virus aside, the outbreaks were the focus of these narratives, all implementing the mode of ‘bite’ as the method of distribution.

Both virus and cannibalism are entwined in these stories – biting being the thread which combines the two thematic strands. Not only are resources, society *and bodies* consumed in this combination, but also, all aspects of civilisation, order and *categorisation* are infected and mutated. Biting, as it specifically relates to the zombie, is the instrument of transition in which Latour’s crisis of scientific purification/translation is realised. Sontag’s revelation that apocalyptic science fiction films are warnings of messing with order is not where the power in these stories reside. Latour’s crisis may also be realised through these films, but that is not where the power of them resides either – ultimately these stories play out the *potential* for messy categories as they necessarily undermine the *desire* for the flawed facade of ‘order’ and ‘ordering’. These devices of cannibalism and virus/infection exemplify the concepts of transition and blurring of the ordering of categories and the related anxieties that this evokes amongst those around it.

To illustrate the cannibalistic zombie's performance as a murky transformative figure, not only in relation to the living-dead but also in relation to human-nonhuman, in *NOTLD* a young girl who at first glance appears as a lost child, reveals her nature upon closer inspection. She proceeds to attack her human counterparts and consume their flesh. It is difficult to ascertain whether she is visibly 'otherly' or not. She is not open nor is she rotting, yet she is embarking upon the abject act of cannibalism *and infection* – which in turn *leads to transformation*.



Fig. 24. *Night of the Living Dead*, Film Still: 'Young girl' (Romero, 1968)

The intensity of the fear or abjection implied by the infected 'bite' is compounded by the abject act of eating of another's flesh. As the most compelling visceral material of the human body (there is no mistaking the impact of seeing one's own body disembowelled and eaten), the bowel and liver also handle the body's waste, which figures heavily in Kristeva's writing as abject material. She writes, "Contrary to what enters the mouth and nourishes, what goes out of the body, out of its pores and openings, points to the infinitude of the body proper and gives rise to abjection" (Kristeva, 1982, p. 108).



Fig. 25. *Day of the Dead*, Film Still: 'Zombies Feeding' (Romero, 1985)

Kristeva notes that the act of ejecting waste from the body (which includes organs in Western society, as they are often considered waste in food preparation) is what is normally sacrificed in order to keep the body clean and proper. Eating the body of another is an abject act and eating the waste of another's body is beyond comprehension – in the case of the zombie, doing so as an active, walking cadaver is *profoundly* abjectionable.

Cannibalism in the zombie narrative is perhaps the most compelling characteristic as it connects our readings with deep visceral imagery and emotion. This serves to continually trigger a reminder that the zombie is messy and meant to mess up preconceptions about the things it represents. It implicates dialogues on self-other, abject acts, civility, and corpse vitality and beyond. The act and effect of cannibalism encompasses both living-dead through the active abject infectious biting corpse and human-nonhuman through the transformative mode of infection which is explore further in the next chapter.

Chapter Eight

Zombie Characteristics: Human-Nonhuman

...any being who traverses the liminal spaces that evade classification takes on the potential to confound normative identity, and monsters paradigmatically fulfil that role. (Shildrick, 2002, p. 5)

This chapter expands chapter seven's examination of zombie characteristics and looks more closely at the binary set of human/nonhuman. The sciences are faced with the need to remove interference of the social through methodologies of categorisation in order to *order* (see Kuhn and Haraway (1988, p. 577; 1970, p. 19) on objectivity). One of these key interferences is the continual infringement of 'others' into multiple zones, producing one of the most widely discussed, mutating and challenged dualisms – that of human/nonhuman. Understanding this, the taxonomical rationale in science (particularly Biology) is that a distinction between human and nonhuman must be made and maintained in order to adequately study the parts of anything biological without interference (Weasel, 1997, p. 52). Failure to do so might complicate and undermine the binary distinctions set up to enable this 'study'; it is a circular and self-serving problem. The zombie is an ironic and powerful figure in this regard: it not only occupies the human-nonhuman, but cannibalises the human to produce a creature that destabilises both categories. This is particularly relevant as it exposes the biological processes that already go on between and within ours and other cells, which is often resisted in human-centred biological discourse (Weasel, 1997, p. 50).

Human-Nonhuman

The zombie, as a tension-laden and interwoven being, is unquestionably a threat to Biology and the techniques it adopts to fix beings within its system into a specific location. Its powerful, untiring nature and presence achieves this through both its on screen characterisation and its metaphorical locale within (or breaking out of) the biological sciences. Even though the zombie has been processed under the watchful eye of purification (film and cultural critics, viewers, even directors), it has never successfully been pinned down as specifically human or nonhuman; it has evaded the very attempt at categorisation. Just when we think we have the zombie qualified as non-human, Romero or some other creative commentator throws a proverbial spanner into the reading; zombie Bub learns how to listen to music and make a phone call, zombie Big Baddy has a memory, zombie Ed retains his friendship and plays video games with Shaun, yet none move back into one category alone. Likewise, just when you think it might be human, it gets bloody, pus filled, animalistic, and deeply and disturbingly mutated.

Human/nonhuman categorisation in science is the underpinning device for maintaining species hierarchies. *Othering* is the mechanism by which this category is applied and fortified and is characterised by examining and expressing the environment in relation to what is *not* 'self'. This is revealed through the expression of ways in which something is *similar* to or *different* from the self (*and* accenting the similarities) (Horstkotte & Peeren, 2007, p. 10). The zombie embodies many dualities in that it also implicates the material and the immaterial through its position as fleshy substance and human-self-other; it embodies Haraway's natureculture quite literally as corporeal and cultural. The zombie reminds us through its occupation of fleshy and social markers that nature and culture cannot be easily separated, and that we are not separated from the other nor the nonhuman, but rather that we occupy the same space and always have. The zombie challenges the very substance of the separation of nature and culture in that we, too, might be considered as other and nonhuman – that these states are fluid and complex, not singular and traversable. The zombie's simultaneous occupation of human and nonhuman, like many other counterparts, reminds us that "things and people are moved about" (Latimer & Miele, 2013, p. 8)

within the 'order of things'. The zombie represents a persistence that insists that, no matter how much we try, we cannot dismiss ourselves from the complexity of things and relationships beyond our human-centric attempts through science to order the self; as Latimer and Miele (2013) put it "humans can never get themselves out of culture... no amount of reflexivity is going to 'disembed' us." (p.8).

The zombie is, by its corporeal (and viral, incurable, mutated) nature, a symbol of this complexity of 'being human'. While there is no doubt that the origin of the zombie appears as 'human', it is also a symbol of the uncategorised potentials of its biology to move past the confines of the human, and consequently shakes its uncompromising confinement to move beyond the processes of categorisation. Zombification is a stain upon the attempt to maintain biological integrity as it confirms the potential of bacteria, viruses and mortalities to dissolve the bodies' corporeal, and thus categorical, boundaries.

Identity, Self, Other and the Familial Corpse

Self/other in relation to human/nonhuman is discussed in this section. While self/other and human/nonhuman are considered as different 'sectors' of natureculture, I consider them as rather intertwined within the connective composition of natureculture *and* the zombie. The human markers of the zombie relate directly to familiarity and consequently, identity - it is how we get into a dialogue about the zombie hybrid in relation to 'being human' in the first place. Additionally as the zombie exploits abjection in its multifaceted and most extreme instances (rotting, corpse, infectious, eating and so on), the self or the propulsion away from it upon viewing an abject scene, embroils self/other distinctions into any discourse about it. Time and time again, this creature, positioning as mutated and transformed, drives the narrative behind discourses on human-ness. Zombies are inherently recognisable as 'us' (even if in a fluxing state between 'us' and 'once was us') as they infer identity through the markers of self - collectively, relationally and individually visualised via familiarity. It is not like the far-removed indicators that alien figures exude. Aliens are visually transformed beyond humanness, but zombies simply *function* beyond, *and within*, humanness as broken and open bodies. This is exemplified in familiar tasks such as zombie Bub making a phone call in *DOTD*, zombies pumping gas

or playing instruments in *LOTD* and Romero's original adaptation of *NOTLD* of what was once an alien invasion story to a 'scarier' invasion narrative – when 'neighbours' attack.

The zombie is *familial*. Familial is used here in relation to 'familiarity' and in this context specifically points to the zombified presence of family, friend or recognisable people. It is easier to support human/nonhuman delineations through the use of other species (even though this is still contentious if we are to keep in mind scientific crisis of purification and transformation). Specie-ation, in this respect, should include animals and aliens, which is effectively argued anyway as more complex than a case of 'easy othering' (through, for example, Haraway's (2008) inclusion of other species within our 'human' story, and Latour's and Waldby's work on translation/DNA (2012 [1993], p. 11; 2000, p. 6)). As previously mentioned, while alien and animal others might be superficially easy to use as armature for scientific delineation of human/nonhuman, *familial* zombie figures, no matter how far they are transformed, are less easily dismissed. The zombie immediately and noticeably muddies the species safety net through its mere presence as 'us': zombies are the same species but different – something more. They share our DNA at the closest level and are the same, yet mutated. They work well in upsetting human/nonhuman and self/other boundaries because they are so close to us. Arguably, they *are* 'us'. For example, in *LOTD*, Big Daddy is observed with a name tag, a job and enacting a task he undertook in his former life. When Big Daddy and other zombies seek out their own space, "they are us", is written into the observation of the characters. Human-ness and nonhuman-ness is implicated through complicated relationships and readings between these counterparts.

The connection to 'us' is further amplified through the reminder of the mortality-civility aspect of the corpse. A corpse, to reiterate, is not a passive object – it decays, and as it does so, it is animated through the process (material changes take place); the corpse will not be still during the condition of death, upsetting the state of oblivion we have come to find safety in through ritual (based on our fear of losing the self and living on). The zombie corpse exhibits a *fusion* of self and other, suggested through

religious understandings of the believing body that it is transformed into a “spiritually realised self”, as Susan Zimmerman (2005, p. 103) postulates when writing about Bynum and Kristeva. She also notes the persistence of the concept that decay does not signify death as an ‘end state’, but rather as *a process in which borders are infringed upon* (Zimmerman, 2005, p. 104). She argues that Kristeva’s (1982) powerful words resonate with the literal enactment of this fusion in the living-dead: “The corpse, seen without God and outside of science, is the utmost of abjection. It is death infecting life... The in-between, the ambiguous, the composite.” (p. 4).

This composite *must* therefore implicate identity. Kristeva notes that *identity* is at risk of consumption through the process of decay, which acts as a blurring of bodily boundaries. However, she also advocates for the fusion of ‘nirvana’ once obliteration has been achieved through putrefaction. Zimmerman (2005) observes:

The corpse serves as material witness to the ambiguous relationship between fragmentation and “nirvana” in the structure of human life; abjection enables the subject to comprehend the corpse in the self. (p. 105)

The zombie corpse, doubly active and spiritually un-transformed, instead, physically represents an impingement upon the boundary of the self as intact and immovable – un-infect/affect-able and, ultimately, a literal challenge to the sense of containment of the self as it seeks to ‘infect’. When it is also alive, it represents an affront to the concept of fusion as humanistic – it reveals that fusion is not linked to religious belief in the living dead corpse for redemption, but rather to the unaffected state of the ‘other’. The dual status of the living-dead as decaying, fragmenting self *and* active untransformed spiritual other (or as something else) is exemplified in the zombie figure, further challenging the scientific drive to reduce the body to just its parts; the self is implicated in the familial but suspended within the otherly zombie condition.

Multiple vs. Solitary – The Zombie Horde

Zombies are not the lone monsters normally presented in horror and science fiction; they are uniquely a mass/mob/throng/horde/pack of creatures. Often this defining quality of the zombie goes unnoticed, yet it is the distinctive characteristic that makes the threat multi-fold. In apocalyptic fiction where the multiple outnumbers the lone

survivors, the integrity of the margins and the normalised majority in society is re-ordered. The zombie-other, despite its embodiment of abjection (which is normally marginalised) becomes, through its disturbance of the position of dominant bodies within society, the new centre of society, and the intact clean and proper *self* becomes marginalised. No longer is the clean and proper the mainstream inhabitants of society – the zombie is the new ‘normal’. The zombie disturbs the status quo. Not only does the zombie exemplify the dissolution of category boundaries, it *overtakes* the society that insists upon enforcing such boundaries in a stampede of overwhelming majority presence.



Fig. 26. *Resident Evil: Extinction*, Film Still: ‘Zombie Horde’ (Mulcahy, 2007)

Fears associated with the zombie horde are different from that of the singular or lone monster. The threat appears inescapable as there is no sanctuary of society left to rescue the survivor/s. The survivor is outnumbered in a definitive way: not only is the horde the dominant threat in situ, it is also the dominant threat in the apocalyptic society in the zombie narrative. Craig Dersken and Darren Hudson Hick (2011) in their essay “Your Zombie and You: Identity, Emotion, and the Undead” point out some interesting aspects of the zombie horde; it can be likened to the concept of ‘taxis’ in biology, whereby entities are driven instinctually to move towards or away from a particular ‘stimulus’. While the zombie horde comes in fast or slow, attracted to the stimulus of human flesh (and its clumsy functional trappings of noise, smell etc.) the response is still similar – fear – which is only ever challenged by the survivor’s attempts to escape, which is often met with failure. The threat of the horde still represents the threat of a lone monster changing the lone survivor, only with a horde, the

threat is multiplied (and uncontrollable), and made even more complex through this multiplication. The threat of being torn apart and devoured is compounded through the implication of infection and becoming one of the horde to enact the infecting abjection on other rare survivors.

The horde, through its mass, is an indisputable threat, reminding us that as it approaches there may be no escaping the complexity of category blurring and dissolution through its tipping of the scales of marginalisation. It is unrelenting, infecting and has already (or will inevitably) rupture the social structure that allowed such categories to exist in the first place – the zombie horde signifies that category distinctions are unmistakably a thing of the past, as the othered is no longer easily considered as abnormal. It's not only about the diminishing of human society and all of the zones it clumsily orders to allow it to perpetuate, but a *representation of the mechanisms of the infection and marginalisation of it*.³⁵

Virus, Contamination, Mutation - Species

As a challenge to our isolation within the order of things as science would have it, various hybrid creatures have still intertwined with us in our culture through fiction, social and cultural theories, and through our interactions with various companion species. Haraway (Latimer & Miele, 2013) notes that the presence of (and our interaction with) these hybrids and companions challenges the “dominant knowledge practices” (p. 7) which underpin our understanding, in particular of the distinction between human and nonhuman. Specie-ation (as a term used to describe the biological process of the advent of a new species) also implicates the determination of its inclusion by the scientific body. It is an event in which difference is scientifically proclaimed *and* a process that is destabilised in the zombie narrative through the zombies *multi-zonal* positioning (difference *and* familiarities/sameness). If companion species are those that are proclaimed as fundamentally different yet intertwined with

³⁵ Referring to Hannah Westley's perspectives in chapter seven where I note that “The condition of abjection is threatening to society while the act of abjection is necessary to maintain its borders.”

us, and companion species actively challenge dominant knowledge practices, then the zombie aims to demolish them (Haraway, 2007, p. 16). The fundamental departure is viral in nature but it is enough to spawn a complex mixture of anchors and markers that both embody *and* transcend the position of 'difference' utilised in establishing what constitutes a species. Conversely, the zombie also references companion species through its *empathisable* difference – different but also 'us'. In *LOTD*, upon seeing the zombies try to find somewhere to be, the key character "Riley" states in response to an order to kill the zombies, "no, they're just looking for a place to go – same as us". This empathetic position creates a human kinship corresponding more with human-animal relationships than human-human compassion. Ultimately though, with the critical potential for such a reading (as it simplifies the relationship and potentially may fall into some delineation traps), the zombie in this instance offers an example of Haraway's inter-nonhuman relationships – in which perceived others have been *included* in our stories and are intertwined with, rather than separated from, our experiences. This may encourage a perception then that a reconsideration of taxonomies could become part of our society – from within – rather than society being subjugated to threats to taxonomies from outside of it, in which such threats (because of their ordering) can be re-marginalised and dismissed.

At the thematic heart of the zombie as a different body, is the concept of infection *and* mutation. It is the point at which the foundation of specie-ation is turned into a complex and messy dialogue. Infection and mutation (whether from virus or plague) are the harbingers of classification crises. Infection and mutation are the processes by which the virus is spread, and plague is the result of this process, which firmly roots itself both in biological sciences and social experience. A plague is typically handled within a civil system (public healthcare protocols) as it implicates societies and in turn, a plague is never without its creation, mutation and consequences thereof.³⁶ Devices for infection appear in zombie stories for a reason – they echo the biomedical

³⁶ In Australia the prevention of infections etc are handled by Government as a civil issue – see <http://www.health.gov.au/internet/main/publishing.nsf/Content/health-overview.htm>

advances of the various eras in which they appear. Nothing is more persistent in science than the crafty creeping ‘virus’ of social commentary and nothing is more reactively gripping in cultural stories of the body than the scientific perspective and subsequent representations of it. Mutation, through a zombie virus/plague undermines the specie-ation process which is at the heart of scientific ordering. This particular kind of familial mutation obliterates the potential to fall back on old habits by re-marginalising other species, forcing us to admit them to a more complex possible society where changes, rather than threat of change, could take place.

Virus

Ruth Meyer (2007) states that “viruses have always been apt metaphors for processes and objects of border crossing, travel and migration” (p. 1). In science too, the virus is the vehicle for change/transformation. The virus is potentially able to change genetic information (Mayer, 2007, p. 7). Viral carriers are used in genetic manipulation by design to infiltrate cells and insert new genetic information. This problematises human/nonhuman restrictions within biomedical science. Viruses, unlike cells, do not proliferate on their own – they instead require host cells which they can utilise the functions of to replicate more viral units (Cooper., 2000). Both enacted and embodied hosts are ‘complicated’ and transformed, both physically and metaphorically, by the addition of new genetic information through the virus.

The act of biting, eating and infecting naturally implicates the concept of virus, and in the spread of it, a ‘plague’. The vehicle for the dissolutions of theoretical boundaries (and actual bodies) in the figure of the zombie is the virus. It is by no mistake that the recent rise in killer virus fiction coincides with the biotechnological era that we find ourselves in (Dougherty, 2001). Biological weapons which destroy only targeted biological entities leaving the structures of civilisation intact, (Mayer, 2007, p. 3) show a kind of ‘technological rationalism’. The fear of such a threat in fictional narratives of biological warfare is instead intensified through the stark juxtapositioning of society and *the loss of it* – represented *through* what remains: the largely intact surroundings of the survivors. The body, which is not momentarily obliterated but instead defiled over a period of time as an infection turns the intact body into an abject one, intensifies the horror of the prospect of biological viral weapons reminding us

that they are never far away. The killer virus threatens (and mostly succeeds) in literally dissolving the integrity of those distinctions in the most corporeal manner possible. The dissolution of the body proper cannot be mistaken for theoretical in the face of a killer virus infection; it is undeniably literally transformative and *inclusive* as it requires a specific host to proliferate, which in turn transforms to simultaneously include both it and the mutation. Killer viruses and material dissolution are fact.³⁷

The killer virus specifically includes the corporeal body and bodily experience. The binary distinctions, as well as the corporeal integrity and perfection envisioned in the biological sciences, offer up the human body as the 'host with the most' to 'infect'. It implicates both transformation and purification through DNA mutation *and* speciation rooted firmly in the host species. 'Infection' is a potent component of the resistance to categorisation, and the abject is its host – infection, contaminated, viral are all words that are in their essence processes of *transformation*.

Containment and Contagion

Contagion is the act of transmission through contaminated subjects of an infection – it is the means of the virus. Containment applies to the enforcement of boundaries, both physical and theoretical. Contamination applies to the breaching of boundaries or at the very least, the threat of it. At the heart of the threat of infection are the tensions created between containment and contamination. In this section, I discuss both aspects and the tension it creates, as these are related to the moments in which potential for transformation is realised, and as such, will figure into the discussions of biological and theoretical containment and purification densities that I discuss when applying it to biological entities in chapter nine.

³⁷ For example, the Ebola virus, even though not a manufactured virus, emerges as the literal dissolving of bodily containment of organs through anticoagulation, resulting in, amongst a plethora of organ and bodily function failures, bleeding from orifices. It is a host specific infection epitomising abjection and physical transformation.

Containment

In the zombie narrative, containment suggests a method by which protection from transformation is achieved, however, this inevitably reveals itself as a delusion because containment is *always* breached. Containment, in the zombie narrative, primarily warns us that the boundary between the clean and the unclean, proper and improper (civility/society and chaos), is potentially permeable (Kristeva, 1982, p. 69).= Without a need for containment is to be without a threat to it; to be without a threat to containment implies that boundaries are steadfast and impermeable. Essentially, containment strengthens the proposition that taxonomies are flawed (O'Connell, 2005, p. 218). Containment also intertwines the concept of the clean and proper body as the symbol of a society that embraces its ordering, with the *loss* of containment through an encounter with the abject body which symbolises the *destruction* of ordering. Containment is the created (and porous) space between transmission-transition, or 'contagion', and boundary integrity of categories and 'normalised' bodies. A tension exists because these boundaries are potentially permeable and the contagion casts light on this permeability (and transformability) through the act of infection.

Contagion

The zombie is particularly effective in representing aspects of the threat of contagion to containment. It not only draws attention to the contained body-taxonomy, but also exemplifies its demise. In contemporary zombie narratives, the virus figures heavily in the production, spread and eventual apocalyptic demise of humankind (Paffenroth, 2012, pp. 146-147). *The virus is the vehicle by which the dissolution of bodily and identity containment is distributed, and where transformation is enacted.* Transformation is implied in a visceral and primal fashion with the zombie through the disruption of the bodily containment of the skin, and through exchanging of bodily fluids, such as blood or saliva, which carry the invisible viral infection to the next body. Transformation, in viral terms for the zombie infection, means a reorganisation of genetic information as the body is altered to become something beyond its former self. Virus implicitly heralds, whether scientific or discursive, a set of relatable themes and values such as spread, and "moving from and through the margins" (Buiani,

2005) of any of these given contexts. As researcher and artist Roberta Buiani (2005) states, “viruses are perfect candidate(s) for the champions of marginality”. Contamination ultimately allows the margins to be disrupted by contagion – that which is supposedly ‘contained’ within can be reorganised, let loose and allowed to infect other marginal fields. It may be *genetic re-coding* that threatens the integrity of the (‘human’) body firstly and society ultimately. Similarly, the coding of the body as biological (and biotechnological) taxonomical ‘text’ implicates the limited resistance left in a society which is increasingly governed by biotechnological determination (Waldby, 2000, pp. 6-7).

In its essence, the virus challenges order, and Buiani notes this as the reason why such use of the word is gaining popularity in contemporary critical discourse (Buiani, 2005). What zombies allow for is the potential to creatively consider what might happen if these controlled elements were to break free because it does not destroy a host, it *transforms* it. Likewise, in the case of the zombie virus in *TWD*, the concept of ‘contained’ host (as clean and proper human) is compromised as the transformative aspects of the contagion are *already* present within the ‘proper body’ highlighting the illusions of such ordering. No longer is the zombie transformer, because the category of human is *already* transformed (Keetley, 2014, p. 7). There is still however, a transformation, or in this case ‘realisation’ of transformation, yet to take place.

Contagion as an active constituent in the margin wars indicates a potential, a ‘happening’. It threatens to disrupt the margins of self and body, and reorganises the body into *something else* – not simply into ‘a *reduction of*’ it. It certainly implicates the *body as flesh* within a story of transformation and destabilisation, further shrinking the mind body split so heavily adopted in science. The biological, the self and the other in a transformative intertwined display, are all made possible by the disruptive and transformative force of contagion.

If the virus is the vehicle through which bodily and identity dissolution is distributed, and zombie scenarios are results of created viruses and rogue contagions, then the scientist could be seen as a hacker. The scientist, as the creator of contagion and a failed harbinger of containment, also embodies the tensions between containment and contagion. Science is therefore both the source of categories *and* the infectious

elements which set about to infiltrate, reveal and then dissolve them[selves] – quite a Latourian scenario and quite a category crisis exemplar.



Fig. 27. *Resident Evil*, Film Still: 'Sterile Hood' (Anderson, 2002)

In these narratives, the risks of biological 'meddling' are subdued initially and revealed through consequence later. Like most stories in apocalyptic science fiction, the scientists usually either ignore or dismiss warnings about their work in favour of an almost uncontrollable drive towards new discovery, or are represented as curious, mischievous and unaware of the implications of their work, but in both cases, the drive for discovery blinds the recognition of, and the respect for, 'risk'. Deborah Lupton (1996 [1995], p. 108) in her paper "The Embodied Computer/User" notes that in science-based fictional stories, technology ('modernity') is prevalent, and suggests that 'risk' represents the dual nature (for example benefits *and* consequences) of that technology. 'Risk' in stories about technology, science and Biology, reminds us that we should not settle into our own sense of security about the utopian promises of science, but rather remind ourselves of the complex nature of scientific practices, readings and knowledge.

The benefit of research versus the risks of it initially outweighs the virus and its mutational aspects in these scenarios. While the virus in bioresearch is generally seen as either something to be overcome or restrained or as a vehicle to introduce new genetic information into an organism or cell, zombie narratives usually include industrial-military/commercial complexes that tend towards viral warfare (Lauro, 2001, p. 278;

Pulliam & Fonseca, 2014, p. 56). *ResE*, often considered as the basis for the development of the popular contemporary zombie culture, utilises the virus in the more traditional biological research sense. The virus in *ResE* was used to introduce the concept of resistance to physical harm – to alter and transform in a positive way – to improve, but is done so under a military contract. The virus was to be given to soldiers in the field to give resistance to corporeal dissolution – to counteract death. Again however, in the tradition of the apocalyptic science fiction genre, something goes wrong and the result is that all dead and living flesh upon infection is transformed into an embodiment of the ‘immortal cell line’ (Curtis, 2010, p. 7; Lukas, 2010, p. 235). Science is driven towards ‘beneficial’ research, creating a cont[agent] who is at once transformed and able to transform. The transformation is co-opted by the uncontrollable aspects of biology.³⁸ In turn, this cont[agent] represents both the immortal cell line workhorse and the associated duties of the contagion, which in turn creates a set of survivors who desire to contain – unsuccessfully. This circular act through viral infection illustrates the futility of containment and undermines the resistance to delineation through the study (reduction) and conquest of its complexities.

In *DOTD* and *LOTD*, the challenge to the reduction of the body, rather than the disruption and transformation of the body, is evident in the zombie characters of Bub (*DOTD*) and Big Daddy (*LOTD*) through the blurring of memory, cognitive ability and biological association and transformation. Both Bub and Big Daddy, exhibit complex signals of change, relationship to former self, and transformed other. Through the zombie, there is no reduction; rather there is a multi-layering and intertwining of these states.

³⁸ P. Brodwin (2000, p. 11) in *Biotechnology and Culture: Bodies, Anxieties, Ethics* proposes that scientific texts have already written in to cultures (‘biological entities’) their ‘agency’.



Fig. 28. *Day of the Dead*, Film Still: 'Bub' (Romero, 1985)



Fig. 29. *Land of the Dead*, Film Still: 'Big Daddy' {Romero, 2005 #476}

Reduction indicates an attempt to again re-categorise through reduction of information, rather than transformation through the adding of information via contagion. Contagion adds complexity. If containment is the act of enforcing distinctions, and contagion is the act of dissolving them, then the tension created between the two through zombie encounters creates a crisis in which the safe structures of taxonomies are disrupted. These tensions, which implicate within the concept of 'transformation' (fear of and actual) through biotechnological means, serve to ultimately highlight, as Shildrick (1997) put it, "the *illusion* of control that has sustained medical knowledge from the start" (p. 215).

The Destruction of 'The Lab'

Unlike the laboratory protocols of intense sanitisation techniques, survival in zombie narratives hinges on those who are left joining forces to physically and violently rid

the planet of the infected (Curtis, 2010, p. 17). There is no washing of hands, no sterile shiny surfaces or securely contained micro bacteria and cells in glassy containers in incubators to protect a survivor in a zombie virus epidemic. There is a basic rule: keep away from the biting, walking dead. Sanitation is not managed with vaccinations but rather with shotguns, machine guns, melee weapons, even cricket bats and vinyl records.³⁹ The ultimate resistance comes in an unsterile and visceral form – death by melee weapons at the hands of everyday ordinary people.



Fig. 30. *Shaun of the Dead*, Film Still: 'Cricket Bat Weapon' (Wright, 2004)

(Wright, 2004)Biotechnologically emancipating the zombie narrative dirties and bloodies up the order of 'the lab'. The zombie opens up the laboratory doors (or rather escapes them) and takes its contagion into the everyday. In this scenario, the hallowed space of the laboratory is not sacred, not worshipped but rather stands as a fragile, unclean symbol of scientific hubris, dissolving taxonomical endeavours of order. In fact, the lab in the zombie allegory is often depicted as filthy, damaged, contaminated and abandoned.

³⁹ A melee weapon is one that does not involve a projectile. While an established traditional term, it is also a common term used in gaming, most commonly applied to the zombie warfare genre.



Fig. 31. *Resident Evil: Extinction*, Film Still: 'Ruined Lab' (Mulcahy, 2007)

Such breakouts force everyday people to take responsibility and care of the problem, even if in tandem with the authorities. Of course, in a well organised biotechnological savvy world, we are encouraged by the presence of the CDC and other bodies of disease control. In the zombie narrative, the 'CDC' and representatives of it (military, scientist, public healthcare etc.) are usually the first to be infected.

For example, in *ResE*, the first infected are in fact the occupants of the 'Umbrella Corporation' – scientists and laboratory workers. Those who create, and then attempt to sanitise, end up demonstrating a lesson in which those who present as creator-saviours are inevitably reduced to the same host-worthy flesh as the othered workhorses colonised through their saviour-creations.



Fig. 32. *Resident Evil*, Film Still: 'Zombie Scientist' (Anderson, 2002)

If 'risk' is the reminder that technology may have a duplicitous nature, then infection of the creators reminds us that the consequences for ignoring the concept that science,

Biology and technology are *complex*, may be severe and unrelenting (Lukas, 2010, p. 235). In these particular scenarios, ignoring the complex nature of the structure of Biology and the creation of the biotechnology that enacts it, results in the obliteration of that structure (Curtis, 2010, p. 17). Indeed, the undoing of this structure may also be its saviour, because in these narratives, nothing is achieved until this particular configuration of knowledges are destroyed.

Conclusions

Biological horror fictions (killer virus, zombie fictions) represent the ultimate attack on the body/human/proper/self as a safe and contained element. In these last two chapters, I explored the major dualisms that are implicated in the zombie narrative along with some of the subsets of these themes. I discussed the zombie in relation to living/dead and found that it represents a 'collaboration' of the binaries – a kind of layered, complex, interweaving amalgamation that is necessarily impossible to delineate to defy simplification. This is necessary because it fundamentally underpins its monstrous construction, *and* importantly, it makes it an ideal metaphor to apply to other entities that may too defy simplification. I also explored the distinctions of human/nonhuman and its subsets, finding that it represents a complication of these distinctions through its transformation via the virus – contamination-containment scenarios – all purposing the languages of Biology (and thus implicating it).

I found that the zombie is at once living-dead, self-other, human-nonhuman, technological, cultural, social and biological, and fragmenting and fusing. The zombie *is* the living-dead human-nonhuman; a position where all bets of integrity are off biologically, self/otherly and categorically. The occupation of both categories and nuances in-between allows for the ultimate confrontational revelations about the fragility of borders and boundaries in Biology. The zombie is most impolite about the problem of purification in science and open to, but critical of, the process of translation, as it exploits the many investments in these particular categories. The zombie is an emblem of the complexity of categorisation as it suppresses any ability to be bound to the process of delineation.

Through investigating the characteristics of the zombie paradigm, a working metaphor is possible. This metaphor includes within it a set of physical traits comprising of a slow, lumbering, abject figure that can be empathised with, *and* bear the brunt of a desire to eliminate it (it never really is destroyed). It may shift to a fast creature, implicating extreme aggression. It is fleshy, wet and rotting and 'bite-y', signalling its infectious body. It is always at its most powerful when it is familiar – and it is familiar, often reminding us of our/its origins, connections, relationships. It implicates a discourse on the mind/body split through its familiar presentation and through its association with brains and discourses of consciousness.

Moving deeper into an interrogation of zombie as a living-dead figure, it disrupts these distinctions and denies them any status as binary or distinct. The zombie corpse as undead is utterly threatening by this very fact. It contradicts the containment of taxonomies by threatening them, and indeed by doing the business of transforming them. It even blurs the distinction of species as it attacks the integrity of the cannibalism it implies – it is *axi-cannibalistic*, feeding off anything in all zones, infecting them and transforming them without caution for the illusion of taxonomical integrity, able to infiltrate and pollute. The zombie forces reaction and affectation through any encounter with it, compelling the affected to interact in/with the threat.

A deeper investigation of the other primary distinctions that the zombie incriminates – the human/nonhuman – revealed that the occupation of multiple zones through questions of specie-ation, and its infectious transformation is also at the heart of the zombie's power. It renders as familiar yet otherly. It is the harbinger of disorder as it flips the tables on the expectations of normal/abnormal. It does this through the zombie horde which marginalises those within the classification (and illusion) of the 'norm', outnumbering them. The virus and its transformative qualities are called upon in the zombie paradigm and metaphor. It is through technological means that this is realised, thus situating biological knowledge and the biotechnology that enacts it at the core of this figure's presence. Ultimately, the zombie not only undermines taxonomies, but positions itself in such a vague placement within them that it disallows a reimagining of new orderings. It forces us to consider what a space without fixed bodies might look like.

There is no doubt that many of the characteristics of the zombie in these narratives overlap, extend, push, transform – indeed – mutate. It is for this reason that it may serve as the ideal metaphor for discussing the entities that biotechnology embroils in its wake. When interrogated through the lens of the zombie, such bodies may be revealed as more complex than their reduced descriptors as objects of science. The zombie warns us through its markers (virus, fleshy) of its grievance with biotechnology in particular. It serves us better to allow these distinctions to be undone rather than replaced, or we run the risk of allowing valuable cultural metaphors and the insight (and mess) they expose, to slip through our fingers.

In chapter nine, I apply the zombie and its characteristics, subsets and traits to the HeLa entity and new hybrid art/science creation *TAnCL* to explore the metaphorical and analytical work enabled by this figure.

Chapter Nine

Zombie HeLa

How, for instance, is the gene asked to testify to identity categories such as race or cultural narratives such as purity that are always already multiple, hybrid and dangerous – in short, monstrous? (Blocker, 2003, p. 196)

In chapter seven and eight, I explored some of the many traits of the zombie. I looked at the living-dead and its constituents such as the abject, life beyond death, the body/corpse/cadaver and the blurry moments of transformation. I also considered the human-nonhuman and its various elements such as self-other, modes and effects of transformation – the virus – containment and contamination. This analysis in chapter nine reveals the usefulness of the zombie figure as metaphor for unpacking the classification and categorisation systems evident within science, and in particular in Biology. The zombie is a paradoxical and boundary-sitting entity with a strong biotechnological bent. The HeLa cells, like the zombie, blurs the purification/translation boundary and exemplifies the crisis prompted by the tension of delineations implicating discourse on the ordering distinctions of living/dead, human/nonhuman and their impact on social and cultural issues such as race and gender, within science. We need new ways of discussing and analysing biological entities that can go beyond /combine the regulatory language of science and the metaphorical promise of the humanities.

This is where the zombie, with its biotechnological ‘bent’, might help us make sense of some of the complex issues these kinds of lab entities raise.

Building on the work done in previous chapters, this chapter explores the correlations between the characteristics of the zombie and the HeLa cell line, and provides a lens through which to read HeLa. Firstly, I discuss how the scientific distinctions of living and dead are challenged through the nature and positioning of HeLa cell line within biotechnology and the zombie paradigm. Secondly, I explore how the zombie categories of human or nonhuman are similarly challenged through many of the practices that have surrounded the HeLa cell line in its tumultuous history. In each of the following sections, I also periodically refer to *TAnCL*, additionally testing the application of these markers of the zombie, revealing what it may contribute to the discourse through the zombie metaphor.

Living-Dead

The mass of egg like pods was stunning as I walked in the small cold room. A giant fridge stood like a sentinel in the corner. One of the pods opened. Mist spewed out and covered the floor of the room reminiscent of the incubating eggs in Aliens. The scientist pulled a handle upwards out of the pod and in the frame was a mass of tiny vials with a fine frost on them. Barely readable writing — allocations, names, species... All these cells, these donors, long gone, reduced, supposedly removed and seemingly sleeping, still made me think of the stories of donors passed — animal — human — other — their bodies living on in some way even though they had long expired, through these sleeping cells...

Postscript notes on The Anarchy Cell Line residency.

The HeLa cells in science are marked as ‘dead donor — alive cells’ with a seemingly clear separation between the two. In science it only really matters that the cells are human, cancerous and have certain cellular or viral properties — because those properties denote how they are used and how they will be of use. However, the dead donor/ alive cells markers cannot, in fact, be so easily separated when we consider the social stories that seep into the cells’ use and into discussions of them both in Biology and in the humanities. Like the zombie, the HeLa-Henrietta connection creates a dramatic entanglement, rendering the boundary between the human, female, ‘black’, donor (as ‘gone’ or reduced) and the cells (as ‘present’) unclear, implicating within this,

the connected markers of *donor – dead* and *cells – alive*. When these stories are entangled, their taxonomical positioning is too. The HeLa cell line is then an undead entity. In this section, I will discuss the medical and biotechnological foundations of these zones and how they intersect in the HeLa cell line.

Life, Death and Biology: Donors

The concept of life and its relationship to death is implicit in biological research, as seen from the very beginning of anatomy as a way of constructing knowledge on/about living bodies through the study of dead ones (Waldby, 2000, p. 117). As Waldby (2000, p. 1) points out, the ultimate application of this relationship is seen in projects such as the Visible Human Project (VHP), which is a project depicting a digital internal scan of a body of an executed prison inmate, a project for and by the National Library of Medicine. The concept of life in science is positioned as an object of study rather than a mystical or spiritual event, which is an approach that is exemplified (*and complicated*) in the clinical and legal criteria for ‘death’. Waldby (2000) states:

As Foucault (1972) suggests, life is not a transcendental quality but a specific historical formulation with a specifiable archaeology, the posited object of the biological sciences, an abstraction and entity to be explained and demonstrated rather than assumed. Life as scientific object is the force which animates living bodies, an elusive force which exceeds its location in any particular body. (p. 118)

Reduction, manipulation and demonstration are all attempts to produce objective understandings of ‘life’ – usually demonstrated through that which is not living. This is seen in processes of Biology and biotechnology such as anatomy, tissue preservation and so on.

The zombie is an apt tool for rethinking the abstraction of life (and death) within the sciences, as it represents the complexity and intertwining of distinctions of living and dead, rendering the *constructions* of such distinctions also as complex and interlaced. The medical positioning of the boundaries between living and dead are more obviously constructed. While death may be consigned in medicine through brain death or bodily cessation, the construct is reordered according to various needs or required

functions. For example, the body of a potential donor needs to be kept functioning in order to be able to harvest organs to redistribute to other bodies that need them. The donor cadaver (which is the term used once the body is deemed usable in medicine) occupies a different construction of what it is to be dead, which simultaneously occupies some of the criteria of the living (such as breathing, circulation etc). The corpse state (see Spinoza) comes into play here where the body exhibits characteristics of life, although the body is simultaneously considered to be dead – a “donor cadaver” is the name given to this state of *need (donation) vs being (dead)* and to a kind of *need-being*. Spinoza would encounter this body as ‘something other than’ dead: it is important for medical purposes that the donor cadaver occupies this position as the living tissue is required for further use. However, the identifier of ‘dead’ is also necessary for such tissue to be removed and used. The processes underpinning organ donation, while not necessarily the focus of such policies and procedures, allow for a family to philosophically comprehend death and for the medical establishment to simultaneously release the body from society, occupying a status within the establishment as both living and dead. This is also true of the position of cells within biomedical and biological research. Cells are needed but are often established from deceased donors – the cells also fulfil the need-being positioning as donor for experimentation, donor as deceased, but cells as alive – but in Biology, they are simply a corporeal tool. The way in which Biology deals with category crisis is to simply establish a hybrid category within its ranks.

The positioning of death within medicine reveals more of its construction through recent discoveries relating to resuscitation. There are recent advances which allow a body to be revived up to seven hours after it is thought to have medically expired. This complicates the ‘truth’ that death occurs only after the hypothetical A, B and C have been achieved; the boundaries separating that which is living and that which is dead have begun to shift (see earlier discussion in chapter seven on the studies done on pigs). What was previously considered to be dead might now be considered to have been, in fact, alive if we are to take note of these new biotechnological advances. Such terms – dead and alive – are reliant upon consensus of when it is both culturally and medically appropriate to begin the processes of recognising death (certification, removal of life support and eventual cultural ritual such as burial) and when it

is appropriate to take vital organs from a body that is no longer considered to be a viable living entity.

This general consensus about these boundary delineations has shifted and changed throughout various historical periods in relation to new medical discoveries, particularly new technologies. The electroencephalograph (EEG) for example had been used as one of the ancillary methods of determining whether the higher functions of the brain were considered to be functional or not, however, the reliance on the EEG due to the potential false positives has been lessened in favour of more basic approaches to brain stem death, automatically inferring lack of higher brain function anyway (Paolin, Manuali, Di Paola, Boccaletto, Caputo, Zanata, Bardin, & Simini, 1995, p. 659).⁴⁰ Brain death is the main characteristic in medicine of the legal status for allocating someone as 'dead'. Brain death is applied to living tissue as a separate element; a state of legal death may be applied to a body regardless of the body's ability to function by some criteria. It suggests that the fascination with the integrity of *biological* categories of living and dead are still strong forces when considering the zombie as a marker of category destabilisations in medicine and science.

Donors: Henrietta

Henrietta as a donor signals the complication of this living and dead separation in medicine in particular. At the time of her illness, there were, as I have examined in chapter two, medical research processes (procuring tissue from Henrietta) already underway. At the time of her death, this was taken as an opportunity to procure more cells, bigger biopsies and better tissues. However, during this period, Henrietta's life injected itself into that process. Her life was implicitly bound in the reading of her

⁴⁰ Paolin et al for example established that in a test of reliability on equipment used for determining brain death the EEG component of the test yielded 9 out of 15 cases of having brain functionality, albeit of varying and limited degrees, in patients considered as deceased and worthy of such tests (Paolin et al., 1995, p. 659). Such tests could be considered as unreliable in determining brain death. In 1969 and 1974 Dr Adrian Upton performed an experiment using an EEG on jello and detected small alpha like waves exemplifying that one test could not be relied upon in determining brain death if 'awareness' – like readings were detected in jelly (Inglis-Arkell, 2012).

dead donor body when the assistant noticed her painted toenails (Skloot, 2010, p. 90). The team removing the cells had hoped that they were still 'alive' as the cancerous tissue was taken shortly after her death (Skloot, 2010, p. 89). The delineations between donor - dead, and cells - alive, in the context of donor cadavers specifically that of Henrietta Lacks, is collapsed as the observers and the scientific participants mark these various signs of intersecting zones: Henrietta-alive-painted toenails, donor dead-autopsy, donor-Henrietta tissue-alive, cancer-death, cancer-illness living and so on. Michael Gold (1986) in *A Conspiracy of Cells* noted this collapse in the account of Mary Kubicek who was the assistant at the autopsy for the purpose of collecting tissue samples for growing:

Mary's eyes wandered down toward the corpse's feet and suddenly she was overcome. The toes. They were painted with bright red nail polish, and a dainty job it was. It suddenly made this carved-up cadaver real. All the laboratory experimentation never hinted at the tragedy of this disease. But here, she thought, over here on the table is the proper demonstration. Here is what cancer does. (p. 20)

This quote demonstrates the collapsing (and interweaving) of the various zones at play between Henrietta as both woman-donor-human-cadaver *and HeLa* as living cells. The acknowledgement of this 'human' element is unequivocally marked and mediated by race and gender.

HeLa: Cell Line

Like Spinoza's 'rest', cells are an example of the hybrid states of being both living and a corpse (dead). The HeLa cell line disrupts the binary distinctions in Biology of what exactly is, or is not, human and what is alive or dead. The HeLa cell line, as a living collection of 'immortal' cells, is simultaneously placed in stasis (in a state of rest rather than movement) at any given time, while continuing to enjoy the status of 'living' well beyond the death of their origin: the donor. Not all cell lines are immortal (a label given to cell lines that are able to proliferate unhindered by the normal limitations of cell reproduction which ends after 50 cycles). The HeLa cell line enjoys this label because it is, historically, the cell line best known for being 'virulent' and reliable in its ability to reproduce exponentially. While it is one of many such cells lines, it is

the most infamous for this very virulency having allegedly ‘infected’ other cells lines in the incubator.

Much of the conversation on the HeLa cell line has focused on it being ‘immortal’ because the cells remain alive, proliferating, contributing and altering knowledge (scientific and social/cultural). These discussions have originated primarily from the social sciences, indicating that this status of living or dead (indeed living *while* dead) is pivotal to the HeLa cell line’s *story*, rather than just its use in science alone. The HeLa cells, when they are associated with Henrietta through such stories become a potent force when connected back to biotechnology and Biology as they defy reductionism, categorisation and social disconnection because of this connection. The HeLa cells, like the living-dead, *refuse suppression*. Both the zombie and the HeLa cell line arguably occupy this zone of immortality – that which is able to survive beyond death. The cell line itself occupies these precarious states of being; it remains in stasis until it is needed, and is then revived using various processes and chemicals. The ‘living while dead’ scenario is one of the most discussed aspects of the HeLa cell line as cultural and scientific subject and object.⁴¹

There is a direct correlation between immortality in scientific materials such as the HeLa cell line, and a concern about the use and understandings of biological elements which have become disembodied (through the very application of the scientific process). As Hannah Landecker (1997, p. 6) notes, it is ironic that the very disease that marks the prospect of death is created by cells that can continue to live indefinitely in the right environment. Biotechnology shows a desire to *use* living tissues, cells, and

⁴¹ In fact, most of the sources referencing HeLa used in this thesis use the word or discuss at length ‘immortality’ – it is the point of connection between the science and social stories of HeLa-Henrietta. Such articles include, *The Immortal Life of Henrietta Lacks* (Skloot, 2010), “Seeking CellvationTM: HeLa Cells and Immortality” (Landecker, 1997), *A Conspiracy of Cells: One Woman's Immortal Legacy and the Medical Scandal it Caused* (Gold, 1986) along with many articles, wiki listings, database entries.

entities as workhorses. Biotechnology focuses on creating a cache of practical, biological materials as well as producing methods for making this possible.

Cell lines are alive (reproducing, growing, moving and eating) regardless of, and often well beyond, their donor's life span. Each time cells are used, they are 'resurrected' through a process of defrosting and the addition of chemicals to help them to do so without breaking apart (Kielberg, 2010); their awakening is assisted, and without this the cells could not survive. In fact this is even sometimes referred to as 'resuscitation' (Sigma_Aldrich, 2015). Henrietta died in 1951 yet her cells still 'live', and most interestingly *we still make connections between her living cells and the dead Henrietta*. In this context, the HeLa cells' position is a paradox; the cells are never really dead but simply in stasis when not used, and these cells live independently (biologically so) of Henrietta too. In the context of scientific handling of the HeLa cells and their position as objects of study, we must acknowledge that within these constructed knowledge systems these cells are *simultaneously* dead *because their donor is no longer alive*, and alive because they are animated under the microscope. The moment where these various states between and of body and cells shift is indistinct, much in the same way that identifying the moment of transformation is problematic in the zombie.

HeLa Cell Line: Immortality, Life and Death

Some of the rhetoric around the HeLa cells has focused on critique of the use of the 'immortality' label (Landecker, 1997, p. 19). However, the dramatic elements of the autopsy of Henrietta were evident in the recollections of when the technician truly realised that while the body was dead. Essentially, codes of 'life' remained – in particular the lingering image of the painted toenails of Henrietta's body visually represented the retention of elements of life (Gold, 1986, p. 21). In fact, it should be noted that the cancer cells being procured for study and use were alive while the body was proclaimed dead. The mixed imagery and symbolism of the cadaver is consistent with the living dead theme, particularly in the case of Henrietta where the sole purpose during the technician's visit to the body was to procure living cells. The body is dead and yet symbolically and scientifically it presents as simultaneously alive through the cells that are harvested from it. This is not dissimilar from the zombie body whereby the figure simultaneously presents as biologically alive, medically dead, corporeally

reanimated, and symbolically representative of the life of the person who is zombified. Corpse brides, punk zombies, gas station attendants and others with painted nails, once well-dressed people, shuffle around in a state of un-death – just like the HeLa cells.

This motif is also the most compelling characteristic of the zombie figure. That which is both dead and alive forces the hand of the human counterpart, clinging to the last vestiges of societal norms, who must adopt extreme measures to end, or learn to live with, what is seen as an unnatural alive/dead status; not only does the zombie sit outside of contained categories, it forces those around it to inhabit the edge also. This underpins the curiosity (and undeniably the fear) surrounding the status quo of the taxonomy of 'life'. Paradoxically, life tends to be the very thing Biology extinguishes in many processes in order to understand the very status of 'life'. As Lisa Weasel (1997) comments:

If one is initially drawn to this field by a love of and awe for the beauty of nature as I once was, the first thing that becomes apparent is the inescapable paradox that in order to know something, one must kill it. (p. 52)

Tissue culture is an aspect of this process of knowing. Life is persistent in any story of death, and no more so than in stories of tissue culture. G. Penso and D. Balducci (1963) note on the subject of viewing a cell line in *Tissue Culture in Biological Research*:

These cells were part of a human being once alive and now dead, and they survive beyond his death. "I am confident that there truly is such a thing as living again, and that the living spring from the dead." (p. 6)

My own experiences are similar. The confrontation with the HeLa cells as alive, active and – in tissue culture terms – 'prolific', compared to Henrietta's horrific death from these very cells, insisted that I consider her in relation to the living-dead. In fact the first culture of HeLa cells I had tended to were weak, although some survived to be bleached out (a method of laboratory cell destruction) and discarded. The second batch from a different scientist's stock proliferated beyond my expectations. Landecker (1997, p. 19) notes on this point that death and life is a narrative present in cultures themselves, as some cells live even when others around them are dead. It is through the act of 'feeding' and environment that these cells are kept alive: in fact,

feeding is the method by which these cells retain their immortality, effectively removing the markers of time which are continually modified by the presence and refreshment of serum and medium (the feed for cells) (Carrel, 1931, p. 621). The technician observes and takes part in the life and death of cells in vitro ('in glass' – the petri dish) through their caretaking duties. The technician is a participant in the use and the narrative of those cells as originating from a once living and possibly dead host through its origins as coming from someone/something. This seepage creates the undead zone as technicians simultaneously acknowledge origin and participate in sustenance and use of the living tissue.

The HeLa cells are marked in science as that which comes from a dead donor, and it appears on its surface to indicate a taxonomical exemplar. However, as I have shown, the HeLa cells also exhibit traits which can be likened to a living-dead entity. Henrietta's story, the cells in stasis and their resurrection, and the positioning of the connection and fracturing between Henrietta and her DNA (she is dead/the seemingly independently living fragment of her cells), is an ideal demonstration of living-dead characteristics. The HeLa-Henrietta intersections reveal HeLa-Henrietta to be an undead entity – a lab dwelling entity that defies taxonomical fixing. The zombie, as undead, when applied to the HeLa cells, reveals the connection between biological processes and their resulting taxonomies as complex and intertwined – as never able to be fully fragmented or collapsed or *simplified*, revealing the complexity, layering and ambiguity of taxonomies ultimately problematising the use of categories.

Abject

The cells used and analysed within biological research are so far reduced and reproduced in sterile methods away from the messiness of bodies and reminders of self that it is quite easy to forget what they are connected to. The HeLa cells on the surface appear to refuse abject readings in the same way. However, it is through stories of connections with materiality *and* social history, and the languages used to describe this, that we may be reminded that these cells do indeed have a history and a corporeality that exists beyond the dish. The visceral language applied to the HeLa cells in particular, seeps into biological and lab protocols and analysis. In chapter two I ex-

plored some of these words such as 'monstrous', 'catastrophic', 'aggressive', 'contaminant' etc., indicating a failure to keep this cell line contained from such visceral descriptors. The corpse itself is also implicit in the Henrietta-HeLa narrative, as the cadaver is present in the transformative processes of the story; the very root of the Henrietta -HeLa relationship is planted in the abject.

The undead cell line is most compelling due to its unwillingness to stay intact and clean. Like Waldby's (2000) observation of medical dissection displays, the cell line symbolises the way "in which life dwindles and fades, yet remains" (p. 139) only with the HeLa cell line, this is more obvious in the stories of a living donor whose life is eventually succeeded by her own cells. Not only are cell lines active in the process of constructing biological knowledge, the HeLa cells in particular act as a complication of a biotech *memento mori* - "remember you must die" - in conjunction with the living self (my own blood in *TAnCL*), asking "but when is dead *dead*?" The HeLa cells as a *memento mori* remind us of being human, alive, as well as reminding us of not only our own impending death but also of the tension between alive/dead categories as it represents a messy amalgamation of *beyond* death. This is not unlike the reminder posed by the zombie through its very human markers, which is a reference to a former life. Furthermore, once something of the body leaves the body, it is considered to be 'waste' (Andrews & Nelkin, 2001, p. 29). The cells of Henrietta's tumours can therefore be positioned as a waste product of her body. The separation in biotechnology of the elements of the body such as cells/the social body/the material body highlights the extent to which we are willing or unwilling to extend connections beyond materiality. For example, the Lacks family is distraught over the use of *Henrietta's* cells, signalling the interlacing of the social body and the material body. So too do the stories of the HeLa cells in relation to social and biotechnological perspectives intertwine - complicating waste and body, abject and proper/contained sterile. Like the zombie's united taxonomies, these distinctions as applied to the cell line, do not work in reality.

When primary cultures are acquired, flesh is needed in order to remove cells from; as flesh is stripped away, so too are the confronting social connections - at least superficially. The cells are 'sterilised', and the more obvious connective markers of body -

blood and guts – are removed. Connections for cells and their support materials (food which would normally come from blood) in laboratory research are replaced by sterilised materials and referred to by terms such as ‘serum’ and ‘bovine’. While ‘human’ remains one of the linguistic markers of cell lines such as HeLa, they are always surrounded by other scientific terms which, in effect, veil the fleshy markers beyond their cell category designation. Once cells are procured from a primary source, they disclose little resemblance to the physical embodiment of the ‘host’; cells are microscopic, rest in a pretty pink medium and are fed by an almost clear liquid or serum. Serum is in fact made from blood, cells come from *flesh*, and both are included in our bodies, but the components of cell culture are so distanced from their origins that these obvious connections are difficult to retain. It is not that whole and unprocessed blood is an ineffective method of feeding cells – after all, our bodies employ this method of ‘cell culture’ – but rather that the other components are seen as unnecessary and in the way. Even though the fleshy markers of the abject (and fragmented) body appear difficult to instate in laboratory practice, their presence is not impossible in this context. Through hybrid, cross-disciplinary, or re-reading practices, the veil of reductionism and abstraction is lifted. Linguistic social markers inject themselves into science anyway, denying a complete obliteration of fleshiness – such as monster, aggressive, saboteur – terms of embodiment. Such language, combined with sterile processes, marks the *attempted* (but deficient) distancing between researcher and subject in order to achieve objectivity and avoid potentially disturbing or traumatic encounters with these objects/subjects. The attempted distancing results inevitably in the latent use of social references. Additionally, hybrid works and zombie readings of lab entities in context reveal their abject inclusions, unfixing the staunch binary positioning of mind/body to include the abject affectation of the challenge of the ‘open’ (in this case fragmented) body.

Despite this attempt at sterilisation and distancing, HeLa cells are reclaiming their connections from multiple directions. Ultimately, the persistence of connection of the cells to the donor and the stark contrast between the death of Henrietta and the life of the cells which exceed her own mortality, are what makes this particular zombie story most interesting. It is not that the sterilised connections are *not present* in science (in the same way these reminders are visible in the zombie body), but rather

that they are *obscured* by science in the attempt to reduce and categorise in order to study. Rather than reduction being the outcome, rereading the HeLa cells as undead reveals them as 'transformed' and *transformative* of the veiled scientific language they appear to be subject to. The utter persistence of the story of Henrietta, the encounters and readings of HeLa by 'others' in the lab (cross-disciplinary/hybrid practitioners), indicates that this attempt at cleaning any mess away from the HeLa cells will always be revealed as flawed through its/her fleshy, abject and embodied histories and mutating uses.

Resurrection and Reanimation

The HeLa cells, once woken from their cold, frozen, lifeless stasis, can immediately and unexpectedly conjure up social connections to the living through the stories of Henrietta. Regardless of whether Henrietta is still alive or not in her whole bodied form, arguably the daughters (the cell descendants) of the refuse taken from her body are alive, proliferating, working, infecting/colonising other cell colonies, and adding to the very knowledge that it is so seemingly reduced by. These cells defy suppression through their history which inextricably intertwines social and scientific markers - the stories of both life and death remain alive too.

Catherine Waldby (2000, pp. 41, 141) specifically discusses biotechnology in relation to living/dead, human/nonhuman dichotomies in *The Visible Human Project: Informatic Bodies and Posthuman Medicine*. She observes of Foucault's *The Birth of the Clinic*, that the dominion over the 'natural' in medicine is symbolic of scientific efforts to extend bodily existence to its maximum degree. In order to do this, death as the finite conclusion to life is contested through medical and biotechnological intervention. Binary distinctions such as 'living' and 'dead', that are medically defined in order to maintain these distinctions, support medical actions and innovations but are also contested through medical interventions such as surgery, treatment and any means of extending life. Biotechnology, as a foundation for such methods of extension, leaves in its wake an ambiguity of the distinctions between what counts as alive, and what counts as dead.

The moment where Henrietta becomes HeLa is also rendered obscure and ambiguous because of the coupling of their 'nature' and biotechnological intervention to extend their use through harvesting, stasis and so on. Even though in name there is a moment where the cells become a workhorse, their transition from living Henrietta to cell line is completely obscured by the competing states of being through the biotechnological processes of donation and the presence of the donor (both in a technical and a social sense). Both zones are present or potential. The period of the animation of the othered entity, 'the cell line' denotes a statement of status as a living-non-living and highly complex layered zone dweller.

Not only is the birth of the cell line indicative of corpse reanimation as it renders the cells as undead through this connective moment of donor-cell daughters, it also points towards a less objective, uncontrollable and more 'messy' concept of life. The cells themselves are in fact animated (when called upon for use from the freezer) and marked as undead. Walby (2000) notes in an interview, Dr Spitzer (who was involved in the digitisation of the VHP), discusses the concept that animation is connected to 'human' when the origins of the 'information' permits:

SPITZER: What we want to happen here, we want this data stuff to react, to act human...As soon as your needle gets up near his aorta you can feel his aorta pulsing...So you think he's alive. ...I don't think I have to do any more to convince you that he is human. (p. 117)

Walby (2000) notes here that "Spitzer clearly equates the force of animation with the force of life" (p. 117). In the case of the VHP, it is noted that while observations of the phenomenon of reanimating something through science is in fact a kind of 'resurrection', science portrays it as a 'creation'. This could resonate with earlier monster figures such as Frankenstein. Even though science generates the notion of 'creation' of new hybrid creatures, regardless of origins, (its process is to reduce and purify) the VHP is a reanimation *and* a creation not unlike the HeLa cell line:

If the body is mechanism, death occurs when the mechanism fails or runs down. It is in the terms of this conceit that a power of animation, the technical motivation of traces, can count as a power of reanimation, the 'bestowing of life upon lifeless matter', to use Shelley's famous phrase. To cast the figures in the VHP as kinds of resurrection is both to claim that they are forms of the

original bodies and to cancel out the effects of death on those bodies. (Waldby, 2000, p. 129)

This clearly adds a level of complexity to what might appear to be a simple reading in science of such entities – that they are one or the other no matter how science challenges its own statement through the process of reanimation/resurrection-creation. The HeLa cells, moreover, demonstrate the issues of the obfuscation of death through their reanimation every time they are taken out of frozen stasis and awoken. But this is compounded by not only the animation of human parts but also the more complex addition of living bodies (for example, *TAnCL*). The reanimated VHP corpse doesn't induce abundant discourse on biotechnological reductionism, which can be adequately represented through a more complicated implementation and reading of the cells other than as symbols of labour and production. Inclusion of stories in the contemporary scientific object, 'the cell' (as a representative of failed reductionism) is almost necessary to place these stories *in a modern setting*; the cell is, after all, arguably the modern matter of biotechnological innovation.

The monster returns when it has relevance to a particular cultural or social setting – so too the cell line may lay dormant for some time, only to be called upon when it is required. The story of the 'monster in the pyrex' is resurrected at culturally significant moments, such as the confrontation of mortality and attempts at cultural decontamination during scientific discourse. Temporality in the cell line as an object of science is physically disrupted through manipulation of food via the withholding of metabolic elements. It is socially disrupted by the intersection of social stories of donors and cultural discourse surrounding these abovementioned biotechnological concerns, and of course by the caretaker's presence and interaction with the cell line. Such cell lines may be destroyed in the process of scientific methodology, but their stories, immortalised in scientific papers and social ones alike, assure their perseverance – their resurrection and reanimation – when they are most needed. Their fleshy presence is always marked by stories of proliferation and infiltration in other cell lines too, infecting and spreading discourse, reminding us that while we may sterilise distinctions, they will always be challenged by that which we attempt to suppress and delineate. This serves as a reminder that nothing is reducible to the extent in which science requires it to maintain order.

Human-Nonhuman

It became messy. Not only was I looking at my own blood under the sterile hood, I was looking at its proximity to the HeLa cell line. I had spilt my blood everywhere. Sopping it up with a now red cloth, it was warm, it was alive and it was me and soon to be 'me/Henrietta'... I looked at the delicate glass disc enmeshed with an abject but almost pretty lacework of tissue and blood. Blood was dripping off of the disc onto the sterile surface, not only had my own blood moved beyond my body, it was now attached to a glass disc with Henrietta's cells. Who and what was this now? Alive and dead, me and her, something else and us beyond us both... What are we when we are in the lab as subject, object, participant, maker?

Postscript notes on The Anarchy Cell Line residency.

Medicine, in particular, has sought to maintain the integrity of categories in order to fortify any boundaries between human (self) and nonhuman (other) (Waldby, 2000, p. 39). However, as Waldby (2000, p. 39) observes, medicine also intrinsically identifies the very elements of corporeality which aid in dissipating these boundaries because death, disease and biotechnology, which can disrupt borders, figure into the methodology of 'human delineation'. I argue here that category delineation is inherent in the methodologies, structures and orders of science and medicine, while simultaneously contradicting (or at least providing contradictions) to such delineations of human and nonhuman. In this section, I explore some of the various characteristics of the human-nonhuman that are identified within both the zombie and the HeLa cells/Henrietta story. It is important to mention at this point that this particular aspect of the HeLa cell line is what made it worthy of 'unpacking' in my first encounter with it – it was *complex*. So in this section, I use the story of the attempt at speciation to highlight the problem with categories of human/nonhuman.

Revisiting the work of Bruno Latour, the conflict in scientific delineation is enacted in the two different and contradictory practices present in most science fields: translation and purification (Latour, 2012 [1993], p. 11). Purification is an act of *science* which seeks to define what is human and what is not. This is challenged by the more modern

and coinciding scientific practice of translation, which seeks to hybridise nature and culture through the classification of new beings. While certain practices in science determine that all living creatures share the same building blocks for DNA which is a method of translation, DNA is also used to determine *differences* between the human and nonhuman – an act of purification. Translation suggests that we are all hybrid creatures, as we are not purely human or ‘not’-human if we share genetic building blocks. ‘Not this’ as a descriptor in this delineation is an undeniably powerful term which cannot be dismissed as a simplified opposite. ‘Not’ is used as a way to introduce what Anthony Wilden (2001) (in his work on communication theory) describes as “discrete introductions” (p. 122) to the non-discrete, and is explored as a boundary in itself, adding momentum to the powerful meaning of the word ‘boundaries’. While Wilden (2001) discusses digital theories, his description is interesting in the context of delineation in general:

On the one hand, all such theories correspond to the necessity of digitalizing analog continuum by introducing discreet boundaries into the non-discrete. On the other, in logic and in language they involve the use of ‘not’. ‘Not’ in itself is a metacommunicative boundary essential to the ‘rule about identity’ which is the sole sufficient and necessary condition of any digital logic. In other words, boundaries are the condition of distinguishing the ‘elements’ of a continuum from the continuum itself. ‘Not’ is such a boundary. (p. 122)

Although Wilden may conceivably be creating a foundation for the rejuvenation of ‘boundaries’, here I am inferring that this terminology may present a foundation for the introduction of new elements *without impermeable borders by recognising that distinguishing elements without connections carries with it the risk of creating new categories*. The scientific process of translation has given us the potential to dissolve these kinds of boundaries of human/nonhuman beyond playing the boundary integrity game of what something is ‘not’ through its connection to all other living things. A more contemporary understanding of Biology is needed because our world already presents us with hybrid entities (Jenner, 2003, p. 26) (or those whose existences undo categories such as human/nonhuman such as the zombie which is played out in popular culture). However, the process of purification through categorisation is still persistent in science, and indeed in society at large. We use these processes to reinforce order, and thus our safety as ‘normal’ by the process of othering those that do not fit into our particularly ordered delineations. Purification is embedded in research practices

and methods as researchers seek to enable reproducibility of results. The processes of purification through reductionism further serve the more mundane practice of abstraction, allowing the study of 'parts' blocking holistic and inclusive potential. Major shifts in taxonomies (and by default the potential for science practices) happen when we think in holistic ways about cells being connected to bodies, to experiences, to cultures and so on (see Weasel on ecofeminism (1997, p. 49)). The study of parts (abstraction) creates barriers to a paradigm shifting approach where dualisms are understood as intertwined. Weasel (1997) notes on the subject and problem of abstraction:

Just as cell and molecular biology breaks life down into smaller and smaller pieces so that the vision and existence of a living organism is often lost, so too do its theories reflect a shattering of connections, calling upon metaphors of domination and control to explain life. (p. 52)

Establishing the HeLa cell line as either human or nonhuman – like most scientific research 'workhorses' – relies on such distinctions that Biology in particular adopts in order to go about categorising and explaining the processes of life. Ambiguity is not tolerated well in biological taxonomy. Ambiguity, however, is inherent in the HeLa cell line, and this ambiguity is the very process by which we might reveal the inconsistencies found in biological practice and in the problem of categorisation. Exploration of the category of human/nonhuman in science is a way of purifying the object of study so that it is no longer 'ambiguous', even if it inherently remains so because other markers are either eliminated or subjected to secondary readings of gender and race in an attempt to contextualise, for example, a particular health study. Such a process is considered necessary in order for experimentation and speciation to take place in a scientific climate where information (data) cannot remain ambiguous – unless one is willing to admit that any data based on an experiment thereon may also be ambiguous. While markers are noted, such as species (human), the scientific object largely remains dehumanised through reduction of the object to that of 'cell' for example (Weasel, 1997, p. 53). But, as discussed, even nonhuman objects also include the biological aspects of the human body. Because humans share biological dimensions with other animals, it becomes difficult to apply human and nonhuman distinctions at a cellular level. This in turn is acted out as an abstraction and reduction

of the object, which is paradoxically defined by a system of categorisation of entangled social/biological markers such as race and gender, further complicated by more biological categorisation such as species, genus and so on. As systems of 'knowing', these markers play an important role in the business of distinctions. However, there is never a position with which to view what we know in an unbiased perspective (Haraway, 1991, p. 576). Every viewer and participant in the pursuit of 'knowledge' views *from* the 'categories'. One is always culturally located and as such, practices such as science cannot be unbiased, pure and singular. This means that when discussing the HeLa cell line, categories are simultaneously entangled in the observer's readings of the object of study, ensuring that it blurs the boundaries between self and other. This is exemplified in the zombie as categories are deeply entangled in the observer's readings of it - the zombie visually and biologically implies self-other at a fundamental level.

The human cell (or any cell for that matter) once present in the lab is stripped of any connection to its origin, unless that information pertains to a procedural, experiment, filing system, or premise related need. For all intents and purposes in science, the HeLa cell line is of human origin only for the purposes of categorisation as it assists the experiment being undertaken. That which makes us human is not part of the process and thus the support, use (social dimensions) and supply network (donor stories) for cell lines do not come into the biotechnological discourse. In science, the persistence of multiple categories is difficult to figure into the reality of laboratory practice and analysis. However, the natureculture or the "symbiosis between science and society" (Weasel, 2004, p. 190) which enables an intersection of categories of human and nonhuman *is seen through the many stories of Henrietta Lacks*. Weasel (2004) states:

The meanings that arise in this story of Henrietta Lacks and the HeLa cell line are linked to the intersections between science and society and among race and gender and sexuality, in the specific social and historical context that has given rise to the "natureculture" that is science. (p. 190)

This particular set of binary distinctions of human/nonhuman arguably enable us to preserve our anthropocentric arrangement as a 'dominant species' through the power of fragmentation. The HeLa cell fragments, in the same way as the monstrous zombie

is fragmented, is incomplete *yet functioning*. It does so with its veiled but still fleshy and familiar associations through stories, its uses, its purification (human) and its translation (nonhuman). Were it not for the processes of science, it would not have become “the monster in the pyrex” (Landecker, 1997, p. 11). HeLa is the ‘other’, the monster that is positioned from *within* science and Biology – it has much power here.

Fred Botting (1991) argues on the subject of othering (which is a reinforcing method of categorisation) that it is a ‘natural’ practice that allows us to reinforce our perception of our social power. Haraway observes a time when looking through the microscope was simplified and uncomplicated through the traditional perspective of the abstraction of cells in question (Haraway, 1991, p. 576). While these categories can give us the comforting appearance of containment, stability and order, along with a kind of simplicity implied by that ordering, upon closer observation and through creatures that challenge these criterion, we can see that there is much more complexity and fragility to be revealed, along with the tyranny that comes with attempting to establish what is ‘not’. This is where the discourses of race and gender are so distinctly played out during the processes and results of scientific gazing.

The cell under the microscope has been subject to racial typing since scientists needed a way to track HeLa cells during their supposed infiltration of other cultures. Preceding this, racial typing of cells also evident in in the early eugenic statements of Alexis Carrel in his scientific and health based discussions on breeding and undesirable traits of particular races (Reggiani, 2002). These examples were based on different rationales (one for pragmatic reasons and one for culturally nefarious reasons) but both underline how race was broached in the dish. Both also indicate the trend in science to apply biological classifications separate from, but culturally associated with, oppression and subjugation (race, gender). Biotechnological (particularly genetic) interrogation of race and gender in the dish is also positioned as a means by which such “minute differences...hold the key to understanding the genetic basis for disease and its differential burden among groups” (Lee, 2015, p. 143). This understanding of difference is thickly layered in biotechnological history through the use

of biological knowledge to both assist and oppress on the basis of race.⁴² One of the most prominent events contributing to the layering of biotechnological history, besides determining the genetic difference of cells, was the determination of genetic difference in blood during the 1940s

In the 1940s blood was established in science as the primary vehicle by which genetic understanding was founded. This was achieved through the early American Red Cross practices of segregating African American blood from 'white American' blood (Chinn, 2000, p. 97). Blood typing was justified as needing to progress along race lines because of the argument for the need to provide the right 'type' for transfusion. This was a direct result of biotechnological advance as blood became transfusable, thus the process of typing and mixing blood became even more complex. To cite Saks again,

By choosing the internal, biological *res* of blood, miscegenation jurisprudence transformed race into an intrinsic, natural, and changeless entity: blood essentialized race. (Saks, cited in Chinn 2000, p.96)

As discussed above, genetics positions itself as assistive when race is the subject of its knowledge construction, tending to the specific medical and health needs particular to race. However, as Evelyn Hammonds, author of *The Logic of Difference: A History of Race in Science and Medicine in the United States* points out, it is not the historical eugenics of the 1940s that we need to be concerned about but rather:

what we have to worry about is how questions of human difference will be framed and what meanings we'll give to the issues of difference that will be brought to the fore by...new genetic research (PBS, 2003).

⁴² While in terms of biology and genetics racial typing of blood is a problematic act it is also important to remember that there are more complex resonances in a broader cultural sense that blood relates also to a sense of 'belonging'. Sarah E. Chinn (2000, p.96) quotes Saks in *Liberty's life stream: Blood, race, and citizenship in World War II Technology and the Logic of American Racism* that blood is:

The vital substance that bound[s] families, tribes, and even nations into a biological and communal whole; blood as race; blood as the link that passed on genetic inheritance and connected members of a group to each other.

When such considerations are applied to the story of the racialised HeLa cells and paralleled with the racial foundations of the zombi in Vodoun culture and slave history and the zombie's subsequent popularisation in western culture, the *zombi/ie* and HeLa connect in compelling ways. These kinds of connections (between HeLa, *TAnCL* and zombies) may be useful in unpacking biotechnological 'typing' in the dish. The zombie metaphor could conceivably provide such a discourse with the new framings and meanings Hammonds postulated. Optimistically, an application of the zombie metaphor here could create a more inclusive or equalising discourse on difference through the realisation firstly that biotechnology and dish 'reading' is a result of political and social processes (Lee, 2015, p.157) and that opening up discourse on race, gender and speciation, may enable a more inclusive and varied framework for refiguring subjective languages.

Difference can be extrapolated to an even broader degree. Lykke (1996, p. 15) points out that a technological exploration of the nonhuman includes the body as we have this in common with other animals. So, if all living things share the same building blocks and biological elements, then we should include others in our understanding of 'being' and indeed hybridity. Latour argues that we must acknowledge that we live in a world of hybrids, as purification is challenged by the simultaneous methodology of translation within science. Both Lykke and Latour advocate acknowledging that science sustains the concept of hybridity (and thus the monster) through these conflicting processes and makes it impossible to continue 'the assertion and denial that distinctions exist' (Waldby, 2000, p. 45). The very presence of these hybrid, indeed *monstrous*, 'workhorses' in our culture undermines our sense of order and the stability of the distinctions and privileges that we have constructed for those of us who fit into the category of 'human'. It is easy to perceive this undermining (and any creature that embodies it) as purely negative, unproductive and delinquent. However, demolishing these categories is not necessarily an act of vandalism, but rather an act of *traversion* that may enable the weary boundary dweller to become an active *category* infector, enabling them to enter into new and meaningful relationships with our 'nonhuman counterparts' through the traversion and dissolution of distinctions from within.

The HeLa cell line is a traversal in action; a cell line of transformation. Not only did it inhabit the cells of other dishes and consume and ‘infect’ them – as the zombie does to its counterpart humans – from a position of category obscurity, it also threw into question through its ability to ‘infect’ other lines, *its own* classification too. The zombie, as a biological (and infectious) force, conceives the argument for a world with a healthy respect for the recognition that categories can be shady, and indeed, the potential for a world where categories can be dissolved entirely, where new indefinable entities also have purchase in our culture.

Specie-ation: HeLa as Compounded Other

Understanding the story of how the HeLa cell line was earmarked for re-categorisation as a ‘new species’ is an important aspect to understanding how the HeLa cell line creates tension between categories. I will briefly outline this story before going into detail about those tensions and their relationship with the zombie.

Jones, Mc Kusick, Harper and Wu (1971) wrote a paper in 1971 titled “George Otto Gey (1899-1970): The HeLa Cell and a Reappraisal of its Origin”. It describes immortal cell line tissue culture history as rather uneventful until George Gey’s ‘discovery’. The article feeds into equally compelling language which described the HeLa cells as ‘infectious’ and ‘aggressive’ during the period when it was feared that the HeLa cells had in fact ‘invaded’ (VanValen & Maiorana, 1991, p. 72) other cell cultures, thus arguably discounting a lot of research. L. Corriell was reputedly the first scientist to discover that HeLa cells could cross contaminate other cultures (Landecker, 1997, p. 8), and Stanley Gartler subsequently discovered this ‘invasion’ in other cultures (VanValen & Maiorana, 1991, p. 71). Walter Nelson-Rees set up methods to identify contaminated cells through a racial marker no less, which remained the main descriptor of these cells through its identification history, regardless of other chromosomal methods of identification being concurrently employed (Landecker, 1997, p. 11). Nelson-Rees went about the process of revealing such cell lines without consideration for the context of the various research objectives. This was later challenged by other scientists who indicated that the necessity of such a distinction was dependent upon

the research under which the cell line is employed.⁴³ At the heart of these texts, was the idea that because the HeLa cell line had been used for so many years in conjunction with, and proximity to, other cultures, and had supposedly shared common genetic racial markers in other racially defined cultures that it had somehow mutated, and some claim had hybridised with these cultures. There is no scientific doubt that the HeLa cells have developed into a mutation from its 'original' genetic composition (VanValen & Maiorana, 1991; Weasel, 2004). Van Valen and Maiorana (1991) stated there were four reasons to consider the HeLa for speciation, three of which they clearly define:

First, their genotype is very different, far outside the range of those viable humans. Second, they occupy an ecological niche extremely different from that of humans. Third, they persist and expand well beyond the desires of the human cultivators of cells; they are the weeds of cell culture. ... HeLa cells now have an evolution quite independent of that of *Homo sapiens*, except for their niche dependence, which is entirely a different matter. (p. 72)

They go on to note on the subject of hybridization, and the fourth reasoning for speciation, that "Of course they can't interbreed with humans, but we don't emphasize this criterion ... it is nevertheless relevant that HeLa cells don't exchange genes with real humans" (VanValen & Maiorana, 1991, p. 72). Again the language is most important to note here in terms of human/nonhuman distinctions; "real humans", hybridisation, "viable humans", "different", "weeds of cell culture", "interbreeding" etc. Van Valen and Maiorana (1991) suggested that these criteria should constitute a rethinking of the demarcation of the HeLa cell line (and its origins) into a new species *Helacyton gartleri*; *Helacyton* referring to a new proposed genus and *gartleri* referring to "Stanley M. Gartler, who discovered the remarkable competitive success of this species" (p. 74).

⁴³ The implication in Masters's (2002) text is that the work of Nelson-Rees was challenged because the Nelson-Rees research placed a large number of research outcomes in jeopardy and the author states that the challenges Rees faced were due to a kind of retaliation in order to admonish responsibility for faulty data. However, it should be noted that resistance to the identification of the HeLa cells in non HeLa cultures includes a conjecture that the markers used are too general.

As a final act of reduction, *Helacyton gartleri* was concluded as being nothing more than a mutated cell line worthy only of being considered as joining the lower ranks of amoebae (VanValen & Maiorana, 1991, p. 73). While this specie-ation of the HeLa cell line has been rejected by scientific scholars, the suggestion remains that the social awareness of Henrietta's habitation of co-categories is difficult to shake, and that in science nonetheless, specie-ation of these biological workhorses is not taken so lightly. VanValen and Maiorana (1991, p. 73) also state that the new species is genderless, again removing its connectedness to the life of Henrietta. The insinuation here is that the HeLa cell line, supposedly previously occupying the demarcation of 'human' as a human-derived cell line, is considered to be not human because of reductive specie-ation criteria. But the appeal for HeLa specie-ation was refuted, indicating that it still implicates 'human' – in fact the very processes of science (DNA – origin human) would not allow a denial of this. HeLa is no doubt a mutation of its former constitution, but it certainly holds social anchors to the donor – Henrietta Lacks – nicely complicating its status as human-nonhuman instead of one or the other.

While Van Valen and Maiorana may have attempted to observe and embrace these new 'hybrid' or inter-zonal spaces, simply creating a new zone achieves very little in the way of challenging the binary distinctions they set out to challenge. While they eloquently and insightfully observe that "The problem is with our perceptions, not with the phenomena" (VanValen & Maiorana, 1991, p. 73), they go on to discuss how categorisation should be *flexible to accommodate* these new blurry occupants, rather than accept that things rarely 'fit' in a process of purification: "We should try not to force real phenomena into predefined categories, but rather let our categories evolve with our knowledge" (VanValen & Maiorana, 1991, p. 73). Their note is revealing, indicating that science attempts to present fixed categories *and* bend them. It exposes the fact that taxonomies are not fixed, as goalposts shift depending on discoveries made along the way to the construction of this knowledge and its supporting systems of ordering. Ordered subjects and objects of science are an illusion. The HeLa cell in Van Valen's and Maiorana's text is actually exposed as being 'transformative' *through* the language of science.

A call for acknowledgment that perceptions play a part in determining these delineations is lost in the attempt at specie-ation of HeLa into a new category of *Helacyton gartleri*. Categories when challenged are most amenable to paradigm shifts by being discarded rather than replaced by new ones which simply keep the process of binary 'not'/'is' functioning. Van Valen and Maiorana attempt to simply reassign it a new set of boundaries rather than dissolve or allow for the functioning of things without them. The zombie does not allow category replacements to proceed too far. It may enjoy a name ('zombie') but that's as far as it allows delineation to advance. It resists newly created categories through its incontrovertible amalgamation of categories. If we open up the discourse (rather than close it off with new borders), we must consider that HeLa is also then a connected and multiple occupant of many zones, which is where it's cultural, political and social power resides, as these connections make the demarcations untidy, obfuscated and even moot. Most compelling in this attempt at specie-ation is certainly the revelation that science is not a space of purification, but an example of a space where the social and the scientific intertwine and that transformations take place.

In science, the HeLa cell line is a bunch of cells, not an extension of a human being who was the unknowing donor of the cells during a time of racial and gender related troubles when it came to the treatment of women's health. The HeLa cell line embodies the understanding that two contradictory practices are at work, as in the complexity of the zombie; the HeLa cell line is human but it is also a challenge to the process of such categorisation as it is alive outside of the body, and it has been the object of discussion on the mutation of cells in the laboratory beyond their original genetic 'integrity'. Much in the same way that the zombie relinks such connections by providing a narrative in which origins and traversions matter, the HeLa cell is increasingly establishing its interconnectedness with the origins, mutation and proliferation of *both* Henrietta and her cells through the multiple stories of Henrietta permeating both science and society.

Conclusions: Human-Nonhuman HeLa

The obvious relationship between the HeLa cell line and its precarious placement in various unstable categories as species A or species B, and the precarious and indeed

illusory locale of the zombie in categories such as human/nonhuman, is difficult to contest. The zombie also posits itself in the in-between – unexpectedly fluxing and shifting between and outside of both categories of human and nonhuman, never quite being one or the other, but always both and beyond. Both are biological and messy and make abundantly clear that indeed, the categories themselves *are* actually messy.

Rather than the just the cells prevailing, or parts thereof the Henrietta/HeLa story, it is the storytellers who keep these linkages between human-nonhuman alive. This is achieved *in tandem* with the DNA as a more complete record of the life and experiences of Henrietta, practices and the tools of biotechnology. Both have been subject to discussion of race and gender in the dish revealing the impact (both positive and negative) that these kinds of stories have on social meanings of such ‘human inventions’ (PBS, 2003). Despite the attempts that have been made to distance parts of the story through claiming a new species because the cells do not fit perfectly in the category of ‘human’, the HeLa cells have managed to maintain, through storytelling and their layered and intertwining traits, a complex existence as lab entity. The HeLa cells, manage to throw other lines it comes in to contact with into obscure classification as well through its infectious qualities creating a horde of cells able to resist classification and embrace obscurity – a kind of zombie horde. The HeLa cell line and the zombie share a complication of the classification of human/nonhuman, both rendering the delineation as unclear. The zombie demands through its human-nonhuman blurring that we consider ourselves as more connected beyond seemingly rigid taxonomies. If the zombie reveals this through its human-nonhuman status, then so too does the HeLa cell line reveal its connection to Henrietta, us and our reading of race, gender, body-mind, life-death, species within a biological context.

The Anarchy Cell Line

When examined as an exploration and extension of the HeLa cell line, as read through the zombie metaphor, *TAnCL* is a demonstration of what a zombie cell line (that which sits between and within both science and society, and that which undoes distinctions through its complex inclusions) might look like. Here I briefly revisit *TAnCL* with these new readings in mind.

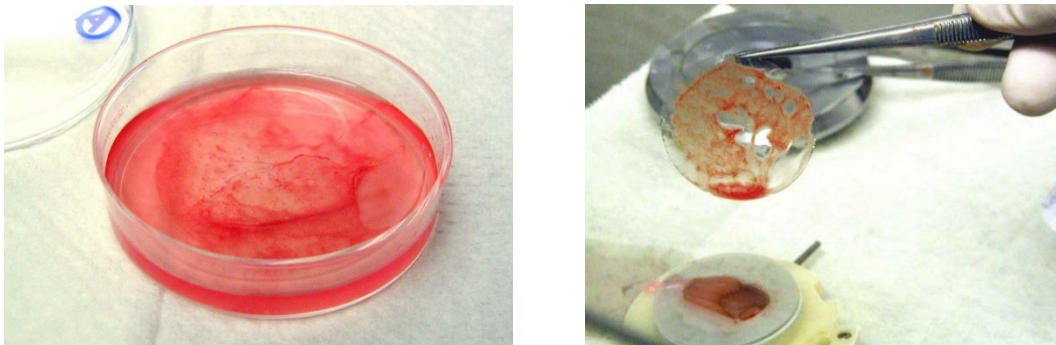
Living-Dead

TAnCL which, as noted earlier, developed from my own experiences and reactions to the HeLa cell line in science and the humanities, is also living, although placed in stasis at various intermissions. *TAnCL* embraces and enhances this complication through the inclusions of cells from someone currently living – myself. I still consider those cells mine/a part of me: separated yet still tethered to the body through both DNA and through social perceptions, as this is a socially rooted ‘artwork’. These cells (both mine and HeLa) produce waste, they feed, they proliferate and sometimes infect other cells, and they sometimes die. We also intersect and conflict in our social and cultural backgrounds which in turn creates tensions and complex connections within the dish. There is a physicality to the contents as well as a cultural component. The cell *line* itself is ‘split’ and saved again in stasis. Splitting is the act of separating the cells in a current growth medium into new flasks as they grow so multiples can be made; the more flasks of a particular stock, the more material there is to experiment with. The zombie virus works in the same manner: it infects others, proliferates virally, and provides multiple vectors for infection, subsequently providing more infected hosts to continue doing the business of infection and mutation. Splitting cells also allows the lab worker to separate some cells off to be frozen, allowing them to be kept almost indefinitely in stasis and ‘revived’ for later use. Revive is a word which is usually associated with being near to, or closely post, death. In the state of *prolonged* rest, the refiguring of the categories of living or dead are complicated.

TAnCL (and its connections to the zombie metaphor) extends the potential to understand the HeLa cells’ immortal status. In the context of scientific experimentation, there are limited ways to tell the story of the immortality of The HeLa cells. The HeLa cell line is ‘tagged’ and simplified as ‘immortal’ because stories in science are limited to practical uses as science workhorses. It occupies multiple states of being, and with the inclusion of dead Henrietta, living Cynthia and the immortal cell line, is perhaps one of its most powerful complications of ‘living-dead’ I have explored so far.

Abject

TAnCL was an approach intuitively designed to challenge the notion of reduction, and reconnect social markers in a more obvious way to the cell in the lab. By adding my own whole blood to the living dead HeLa cell line, I enabled it to axi-cannibalistically feed on my abject waste/lifeblood. Blood taken from the body – ‘waste’ – and used to feed – ‘sustenance’ – is, in itself, a powerful statement proclaiming that the abject is not only undeniably present, but that the border between the contained self and the abject other is obscured through the act of feeding for survival. The distance between fleshy social bodies and their biological derivatives was reduced, and the connections re-established through *TAnCL*.



Fig's. 33 & 34. *The Anarchy Cell Line*, Whole blood shown in dish with HeLa cells (Verspaget, 2003)

Whole blood (once spilt by accident on the sanitary surface of the pristine ‘sterile hood’) is provocative and its presence is precisely what makes this potentially invisible creative work (cells are microscopic) an undeniable reminder of fleshy inclusion – body implicated, socially connected and an ‘abject recall’. The images of fleshy proportions were purposefully chosen to demonstrate *TAnCL*'s refusal to stay suppressed under a distinction of proper, clean and unthreatening – *it is presented as uncontained*. *TAnCL* was a created extension of the subversion of biological knowledge possible through social cell line intervention via biotechnology. It both reveals and complicates the reductionism adopted in science and expands upon the Latourian concept and the zombification process of hybridization (even beyond the

hybrid) by co-infecting cells and stories, by adding in new genetic *and* social information.

Henrietta, in science, is reduced to the status of donor – a cell ‘type’ – and very little more. Race and gender, for example, are deployed in negative ways in the dish, to ‘type’, order and separate the cells in the scientific reading of them, yet/but also in arguably positive ways by the humanities to refigure and reconnect them to beyond the dish. But it is Henrietta’s cancerous cells in particular that science is interested in. This is reflected in the account of the harvesting of those cells where the scientific recollection is purely based upon the cells as the central ‘character’ and the person as a mere host; a means to carry the cells to the facility housing Dr Gey’s lab. Henrietta is reduced in this narrative to a cellular container. The HeLa cell line becomes cohabitant by colonising other cell lines. As the HeLa cell line takes residency with other cell lines, it is observed that the hosting cell line is no longer ‘pure’. Its mutation complicates the reduced state of Henrietta as host and cell line as pure. *TAnCL* makes use of this point, highlighting it further by adding the cells of [an]other (because the cross disciplinary worker is a hybrid monster). It now contains two donors plus any other cell lines it has colonised during its flask-jumping history. The HeLa cell line upsets the scientific need for purity and reliability, it persistently holds on to the social story of its donor reminding us of the complexity of origins and destinations. Henrietta was not just a host of cells, but rather a wonderful complication, infecting biological purification much like the zombie monster in its attempts to upset and undo taxonomical borders. *TAnCL*, made in a lab for social rather than scientific experiments, hybridises not only the raw materials of science but also the complexity of the sources of origins, stories and social connections – a kind of zombie re-enactment. It is a hybridisation of identities, cultures (race), and ‘species’ (and spaces) based discourse; it implicates human and nonhuman through two bodies/people as it others subjects by mixing and messing categories. It implicates living and dead as its cells embody this position and the donor’s – one alive and one dead, cells of both living on (and in ‘stasis’/rest), layering and intertwining – celebrating the complex and messy cat’s cradle of lab creation-transformations. The blood, the mixing, the blurring is what it’s all about in *TAnCL* because it is *not science but is enacted within science*. *TAnCL* epitomizes the trouble with categories by embracing and using the tension between

purification and translation in science through the cohabitation of multiple category dwelling occupants of the dish and outside of the dish. It is nothing 'new', but rather the rereading of the HeLa cell line – a new horror story which is zombie-like in its ability to undo and destabilise suffocating taxonomies as realised through science and the tools it utilises through biotechnologies. It embodies the concept of blurring (undoing) taxonomies as a system of ordering and bodily subjugation, and by default (story contamination) does so to those who would interact with it. This rereading, whether through the zombie or *TAnCL*, potentially emancipates the cell from its abstractive biotechnological confinement and separation from the experiences of the social body shifting oppressive typing into a space where new meanings and uses may instead be forged.

Conclusion

In this chapter, I established that the two main taxonomical distinctions present in the zombie, living/dead and human/nonhuman, are also present in the HeLa cell line. I explored what these might mean when the zombie's traits are applied to the HeLa cell line. I found that by applying the zombie to the HeLa cell line, that HeLa and Henrietta could be more easily recognised as a lab entity that embodies the problems with categories in science.

In the conclusion to this thesis, which follows this chapter, I will highlight these connections and intersections along with what they reveal about human-biotechnological relationships.

Conclusions

Zombie Metaphor: Revelations

If, as Cohen (1996) says, “Monsters must be examined within the intricate matrix of relations (social, cultural, and literary-historical) that generate them” (p. 5), then this examination of the zombie reveals that it is a monster that speaks volumes of our history, as well as our position within the biotechnological era. The zombie is a unique monster: it is prolific as a horde of others, viral, uncontained, both us-them incarnate, both human-nonhuman, both alive and dead and abject too as visceral and rotting body; it is the ultimate fleshy-biotechnological confrontation. It reveals our concerns about transformation and difference by being similar to us, and yet something else – it confronts in us fears about these things in the specific context of biotechnology because it is virally transformed flesh that is never fully split from what was before and what is now. In this way, it is the ultimate modern monster that provides a useful metaphor for talking about contemporary matrices – the relationships between biotechnology, the social and the cultural. The application of the zombie metaphor to complex lab-dwelling entities is an important task to undertake. Otherwise, the questions that remain about things like the HeLa cells and its constantly shifting, confounding status, can never be addressed. Susan Squier (2004) states:

The very fact that imagery and metaphor are thought to be sites extraneous to science suggests the investment science has in the marginality and obscurity enabled by those discursive modes. Thus we can look to imagery and metaphor for the expressions of excess fantasy and desire, finding therein those sites of unresolved tension, cultural paradox, and stubborn ambiguity that are crucial, if generally overlooked, aspects of biomedicine. (p. 15)

The zombie, in its characteristic modern context of 'biotech', clearly highlights these sites of tension, and most distinctively highlights the taxonomical subjugation of all things within the investigative sight of Biology. This is enacted in zombie stories through the tools of Biology's trade – biotechnology – which includes transformative techniques (the virus) and spaces (the lab). Applying the zombie metaphor to other entities that share its place of birth reveals these tensions, and thus exchanges with it similar concerns, parables and potentials for dialogic transformation and taxonomical 'undoing'.

The HeLa cell line is one such entity that shares traits with the zombie. I found that HeLa, like the zombie, is undead, and by applying the zombie, it renders HeLa inclusive of Henrietta and cultures – a connection that has been fundamentally difficult to distance in the HeLa cell line in Biology, regardless of the attempts to do so through fragmentation and story sterilisation. Henrietta and HeLa are never fully fragmented, and in this position, they reject taxonomical submission. The HeLa cells, while actively placed into sterile contexts (both story and material), are intercepted constantly by Henrietta as donor and person, implicating corporeality – and to be corporeal and *partially* fragmented, is to be abject. HeLa is a sometimes motionlessness, sometimes active entity. It too is called upon when needed: it is revived, resuscitated and reanimated, never fully shedding its multiple states. As the living donor expires and her cells do not, the HeLa cells remain deeply connected to Henrietta, calling for distinctions of any kind to be smashed.

I also explored the human-nonhuman aspects of the zombie and applied it to the HeLa cell line, finding that it too reveals an unwillingness to acquiesce to a delineation of classifications when it comes to being 'us' or 'them'. The HeLa cell line read through the zombie enables a deeper connection between the mind/body split as well as the self/other divide.

The moment where Henrietta becomes HeLa is also rendered obscure and ambiguous because of the coupling of the cells' 'nature' and the biotechnological intervention to extend their use through harvesting, stasis, immortality and so on. Even though in name, there is a moment where the cells become a workhorse, their transition from living Henrietta to cell line is veiled by biotechnological process and the tension between that and the ever present donor (both in a technical – DNA, and a social sense – stories/origins). They are 'both-and' living-non-living, which opens the dialogue within science into the potential for inclusion and expansion of social and cultural connective [t]issues rather than exclusion and reduction through the purification and demarcation of these otherly tissues. It is here that race and gender are also called upon as subjects for interrogation. Gender and race as both markers of identity and subjugation, need to be interrogated further through interdisciplinary practices in order to better understand and affect how they function (and are obscured/deployed) in the biological sciences. The deep history of slavery and the Vodoun zombi in conjunction with lab-popular culture zombie makes the HeLa cells a viable exemplar of what may be achieved through the metaphorical application of the zombie in relation to race because HeLa both includes racial history and biotechnological subjugation. When viewed through the zombie metaphor, this combination encourages a complexification of zones rather than the simplification of them. In this sense, as zonal boundaries are extinguished, race is potentially placed in a position to be at once considered as both a way of embracing identity and 'same' (rather than othered).

Such an application is not without its difficulties as race has already, particularly in the case of the history of slavery, been subject to much interrogation often from outside of those whose voices matter most in such discourse. However the zombie allows a refiguring of this kind of distancing and an equalising power base for such voices collapsing the boundaries that aim to marginalise. It renders a space where identity (racial/gendered/etc. as a positive force of 'belonging') is possible to retain, and othering (as oppressive force) is potentially eliminated- *because zombies can occupy multiple zones*. This indicates that while a need exists, the monster can do much good in interrogating the complex landscape of marginalisation –because it is marginalised, but *powerfully* so. Additionally, while the zombie as a vehicle for popular culture entertainment could suggest a trivial approach to the subjects of race and gender, it

is its very positioning as accessible and approachable to all that makes it an ideal infil[trator] to the heavy discourse on the boundaries of ordering.

The contemporary zombie allegory, in all of its biotech – biological fleshiness, might even help us to locate the *absence* of body and of social and cultural connections, in the petri dish. The commentary around both the zombie and HeLa implicates the body, the mind and the cultural philosophy simultaneously – the HeLa cell line through its zombie like characteristics warns us about the use of the body in taxonomical conversations without social connection, about the divide between what counts as human and what is expelled from it. It reminds us that our stories (all stories, scientific and social) are intertwined, messy, complex. The zombie addresses the body-social omission and the human/nonhuman divide by making these connections which are unable to be unravelled in the midst of a biotechnological scientific-social setting. The zombie and its multiple processes in popular culture are epitomized through its location; it is purified through the biology that produced it as either human host originated – viral, mutated and translated as it adopts a process of being translated into human-other. The zombie inhabits, infiltrates, the installation (and institution) that created it. The HeLa cell line also cohabited, mutated, and colonised many cells and cultures sharing the laboratory; it similarly inhabits the installations that symbolise its creation, the installations and ‘cultures’ responsible for its procurement and proliferation.

The interplays of specie-ation, denial of co-categories, abstraction and reduction, all suggest that the HeLa cell line is much in need of and extension of the the cultural, artistic and critical frameworks currently surrounding it. New dialogues like *TAnCL* and new lenses like the zombie metaphor may offer helpful (and sometimes monstrously threatening) considerations, rather than more reductive scientific conclusions, on the potential of rethinking biological and scientific ordering. HeLa embodies the monster as an otherly unclassifiable figure (its relationship to human and non-human renders it so). This is not to say that ‘monster’ as a marginalised-negative connotation, but rather as the marginalised-undo-er of taxonomical subjugation. It is just obscured (and simultaneously exposed) through the processes and distancing of scientific processes and language. Having a conversation in the lab, while under the

sterile hood, about lab zombies is a conversation that is becoming increasingly important.

Future Work

I have proposed and concluded through my exploration that the zombie is a powerful metaphor for both science and the humanities to utilise in moving beyond divided systems of knowledge to a more connected, intertwined and unified understandings of the body in society, the construction of scientific knowledge and how we can possibly embrace marginality (and use it for positive paradigm shifts) rather than reassigning it to yet another category in the borderlands. I have applied the zombie metaphor to the HeLa cell line but this is simply the beginning. I would like to further utilise the zombie metaphor to interrogate and unpack scientific (in particular, biological) discourse and practice, much in the same way Donna Haraway's cyborg has been used to interrogate the knowledge systems surrounding the technologically mediated body.

Post-colonial theory would also provide an important context/approach for the zombie metaphor given that the intersecting stories of HeLa *TAnCL* and zombies are so anchored in definitions, discussions and demonstrations of race through popular culture, science and the humanities. There are two areas of examination that could be undertaken in the field of post-colonial theory. Firstly, a greater understanding of an Australian context of blood, cells, race, experimentation and its positioning in biology and medicine is needed as it is currently marked and established through mostly African American history. It is of particular importance to non US audiences in this respect to establish a critical post-colonialist analysis of the socio-political meanings of 'blood' and cells used in biological sciences in the 20th and 21st centuries. Such an analysis could contribute to a uniquely Australian discourse in relation to our own colonialist histories. This brings me to my second area of potential examination and interrogation. The discourse specific to scientific inquiry in relation to post-colonial theory utilises a significant amount of non-Australian examples. Suman Seth (2009, p.376) in *Putting knowledge in its place: science, colonialism, and the postcolonial* notes that

while there has been some occasional discussion of the “post-colonial history of medicine” this is still largely absent from our STS discourse at large. Given that there are limited inquiries into *Australian specific* post-colonial histories of medicine *and science*, there is room here to begin the process of filling this hole in Australian post-colonial discourse.

Future endeavours could see me taking this metaphor to other researchers in collaborative, creative and theoretical projects to further explore the unique characteristics it has to offer in relation to bridging the divide between systems of knowledge, and to seeing what it can provide when reading the body beyond its history of ‘parts’ and into complex boundary breaking inclusive ground. These projects might involve more creative projects drawing from the metaphor and enacted through (or ‘practiced with’, depending on how agency is realised) cells. Finally, I would like to continue my work on the use of the zombie as a metaphor to examine scientific processes and methods. While tracing connections and laying out foundational stories, histories and concepts, I found that I needed to go a lot deeper into this groundwork that I originally thought necessary. This, in turn, left less time to apply the zombie metaphor to a broader selection of biological entity stories in science and the humanities. In this respect, I would consider the potential for a more focused body of written work, expanding chapters seven, eight and nine. Undertaking this in my future research would be fruitful in extending the zombie metaphor to a level of inquiry I believe it deserves.

Final Thoughts

The zombie’s status is vague and indefinable through its own occupation of multiple zones and cannot be pinned down to a place, time and set of impermeable classifications. Unlike the usual distinctions in Biology between living bodies and ‘non-living’ cells or body products, the benefit of thinking of the HeLa cell line as a lab zombie is that it reveals the potential to *include* these multiple oppositional states – I have shown that it already does, but Biology, scientific analysis and its reading of such entities may also benefit through its use. I have identified that the zombie is an important figure worthy of further research, evaluation and application to biological

and biotechnological discourses. In summary, the zombie has been revealed as a fitting and significant metaphor for thinking through the complex issues of biotechnology and our relationship with it. It reveals the inconsistencies in scientific systems of ordering through the application of distinctions and zones set to suppress contextualisation, perspective, information and ultimately, connections (social, cultural, racial, gendered, and mind-body). Moreover, when applied to 'objects' of study such as the HeLa cell line, the zombie may provide a way of *dissolving* those boundaries – undoing the distinctions (rather than simply making new ones) which have inarguably complicated our relationship with biotechnology as the artifice of 'illusory boundaries' (Shildrick, 1997, p. 213) and the foundation for understanding who we are and what counts in our stories. It opens up the possibility to have new conversations about who and what we are and how we connect in ways that are not 'constrained by those illusory boundaries' (Shildrick, 1997, p. 213).

I pondered the thing held up to the light by a shiny pair of tweezers – the thin glass sheath that had a sticky bloody mess on its surface that contained me, Henrietta, HeLa and probably other cells too – the hybrid fleshy undead otherly but connected thing. The blood, after a week's growth, was still red, not like the dead blood I expected of my waste. All of us were in there. I knew this was profound – complexity presented on a bloody messy circular glass slide in a sterile space that started to look dirtier by the minute. I was at once confronted with both tremendous fear and the sublime promise of unmapped and new ground...

Postscript notes on The Anarchy Cell Line residency.

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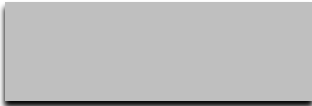
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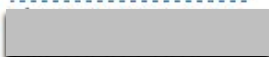
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