Thinking with HIV:

microbiopolitics, pathogens and the limits of multispecies relationality

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Declaration of Authorship

I, Bryan Lim, hereby declare that this thesis and the work presented in it is entirely my own. Where I have consulted the work of others, this is always clearly stated.

Signed:

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Abstract:

The contemporary shift towards ecological modes of thinking is shaping the way human-microbial relationalities are being practiced – the proliferation of practices aimed at the deliberate entanglement of human and micro-organisms for therapeutic ends can be linked for example, to the emergence of a post-Pasteurian notion of health. Yet, what responses to the COVID-19 pandemic suggest is that such post-Pasteurian microbiopolitics (Paxson, 2012) also run parallel to a more traditional immuno-microbiopolitics (Cohen, 2009) which figures co-existence with microbial others in terms of defence/aggression. Situated at the point where these two different microbiopolitics meet, this thesis builds on posthumanist thinking and probes the limits of current debates in social theory regarding multispecies relationality by asking: what might it mean to embrace an 'unloved' and 'unloving' pathogenic other if doing so also simultaneously threatens one's very own existence?

To this end, this thesis engages HIV – a virus that is often seen only as scourge, crisis, and disaster – as a more-than-human heuristic to learn what microbes and infectious diseases have to teach us more broadly about different ways of wading through viral clouds, uncertain ethico-onto-epistem-ological projects and multiplying utopian and apocalyptic futures. Thinking with HIV, I argue that in the context of pathogens which do not become 'good' in a post-Pasteurian framework (as opposed to microbes like hookworms for example; see Lorimer, 2019), taking seriously the idea that the microbe is multiple (Mol, 2002) will require that research focuses not exclusively on health-seeking practices but also on those which do not aim directly at the absence of disease or even the avoidance of death. Subsequently, by telling multispecies stories associated with voluntary HIV autoinfection as practiced by the Los Frikis and bugchasers, the microbiopolitics of HIV will be opened up to theoretical and empirical scrutiny to illustrate how a multiplicity of HIVs and modes of lives are gestated-into-being (Neimanis, 2018). By braiding these multispecies (his)stories and their multiply enacted bodies – both human and more-than-human – with meditations on anthropocentrism, human foodiness, birth and loss, this thesis takes to heart how multispecies worldmaking is never only benign and makes clear some of the microbiopolitical calculations at stake when reassembling modern life.

Table of Contents:

0. Introduction

I will always remember the interview I had with a man I shall refer to as Matias early on in my academic career. He was 20 and also at university, and having responded to my call for interviews on HIV PrEP (pre-exposure prophylaxis) user experience, we met at the Barbican one hot summer afternoon. We immediately connected over a variety of topics: his coming out, the difficulties I faced being in the closet, our involvement in the gay scene, the desires we shared. Yet, for all our similarities, one difference obtained between us and it is this dissimilarity that would subsequently go on to inspire the multiple routes my doctoral research embarked on.

What struck me the most during the interview was that Matias had never known sex with a condom. He told me that he had been taking HIV PrEP ever since he became sexually active. 'Normal' sex for him was sex without a condom. I had not yet started HIV PrEP at that point and having led a sexual life filled with fear of HIV infection, his remarks incited a thrilling mix of confusion, panic and awe in me. His remarks reminded me of how just the week before, I rushed to the clinic to get tested after having had protected sex. Telling me that there was minimal risk of me being exposed to HIV since I had used a condom, and that even if I was exposed, it would take a few weeks before any tests could detect any possible HIV infection, I was turned away by the nurses. Matias' remarks haunted me for months after, surfacing each time I had 'done the dirty' and returned to the nurses at the clinic. What Matias told me was at such odds with everything that I had known up to that point. It also went against what most of my interviews with other men who lived through the HIV/AIDS epidemic in the 1980s had shared with me – their fear of HIV exposure and the attendant suffering it brings, the remorse they felt as survivors and their inability to even consider any form of sexual intimacy without a condom.

How could Matias break the condom code? And with such nonchalance? In the weeks following the interview, the questions which emerged from my encounter with Matias would lead me to an engagement with the possibility that what HIV is for me, might not necessarily be what HIV is for him. In other words, despite the virus being treated predominantly as scourge, crisis, and disaster, HIV was becoming something else with the advent of PrEP: a non-issue and minor inconvenience to be managed away with the daily ingestion of a blue pill. Approaching HIV in this ontologically plural manner certainly helped me to make sense of the disconnect and conflict I first experienced when meeting Matias. The idea that reality is indeed multiple is the subject of Annemarie Mol's seminal book, *The Body Multiple* (2002). Based on her ethnographic study of a disease (lower limb atherosclerosis) in the Netherlands, Mol argues convincingly that depending on the practices involved, atherosclerosis can be brought-into-being in multiple ways. Here, Mol joins other Science and Technology Studies (STS) scholars in asserting that rather than assume a singular reality which we understand differently via a myriad of epistemologies (i.e. representationalism),

different objects are actualised by different practices – and that all these objects are *real*. The proposition that HIV can be enacted multiply is explored in this thesis via a supporting theoretical scaffolding which takes as given that the world is not static and unchanging but always in an open process of dynamic becoming (Barad, 2007). This means that things-in-themselves do not pre-exist our apprehension of them and what we take for 'things' are but phenomena in their ongoing materialisation. This relational ontology will be laid out in much greater detail in chapter two, but it suffices to note for now that from this perspective, reality is always brought-into-being through practices and not something 'out there' that we simply 'discover'.

Bodies, both human and more-than-human are indeed always multiple, and it is not just HIV that is brought-into-being as more than just enemy. Owing to a newfound appreciation for the health benefits that certain microorganisms co-produce with their human hosts, a fundamental reappraisal of the prevalent negative associations of microbes is now underway. With the understanding that the very processes that define what it means to be human are processes dependent on the 'corporeal generosity' (Diprose, 2002) of our microbial partners, there is at present, a general 'microbiomania' (Helmreich, 2015) that has gripped popular science and a wave of 'new' microbiopolitical practices such as helminth (i.e. hookworms) therapy (Lorimer, 2016, 2017, 2019), birth canal bacterial colonisation for babies born by caesarean section (Houf, 2017; Molloy, 2015) and faecal matter transplants (Beck, 2019; McLeod, Nerlich, & Jaspal, 2019; Wolf-Meyer, 2017) are also proliferating. Our *microbiopolitics* are changing, a term which Heather Paxson explains as referring to (2008, p. 17):

> *… the creation of categories of microscopic biological agents; the anthropocentric evaluation of such agents; and the elaboration of appropriate human behaviours vis-`a-vis microorganisms engaged in infection, inoculation, and digestion.*

I elaborate on Paxson's microbiopolitics and the many questions it raises in chapter three, but plainly put, the move in the biological sciences, social sciences and humanities towards an ecological approach that endorses inclusion, tolerance and cooperative relations instead of strict separations between objects and subjects, has led to both the emergence of a post-Pasteurian notion of health and the multiplication of practices aimed at the deliberate entanglement of human and micro-organisms for therapeutic ends. Yet, if we remember once again the presence of traditional narratives of HIV as scourge, crisis, and disaster and more recent responses to the COVID-19 pandemic, what becomes clear is that such post-Pasteurian microbiopolitics also run parallel to a more traditional immuno-microbiopolitics (E. Cohen, 2009) which figures co-existence with microbial others in terms of defence/aggression. In fact, if there can be said to be a general problem of HIV – that is, the question of how we should co-exist with HIV – it is no exaggeration to say that the problem has been and continues to be configured as an immunological problem of keeping

organism and micro-organism apart. Enforcing and policing the corporeal boundaries between the human and non-human thus becomes the *raison d'être* of HIV prevention – and really, if we think about it, of any public health programming with respect to pathogens. This immuno-microbiopolitics did not suddenly occur overnight and it certainly did not arrive out of nowhere. It will be important thus to develop an understanding of how this immuno-microbiopolitics came to become so entrenched in modern life – this will be done in chapter two, where the emergence of the concept of biological immunity through the 19th century will be traced.

Yet, for all their apparent differences, both the immunological and ecological doing of human-microbial relations can be said to be similar insofar as they are both committed to securing the human. To pre-empt a key argument I make in this thesis, both post-Pasteurian microbiopolitics and immuno-microbiopolitics are striated by a kind of normative anthropocentrism that privileges the perdurance the human organism. A brief survey of the research done by scholars affiliated with philosophical Posthumanism and other related and cognate fields such as human-animal studies, political ecology, new materialisms and multispecies ethnography reveals for example, how scholarship can simultaneously challenge anthropocentric ideas, while remaining committed to the perpetuation of futures where humans are sustained, maintained and always rendered viable. Focusing on human entanglements and dependencies with insects (Beisel, Kelly, & Tousignant, 2013; Raffles, 2010), dogs (Haraway, 2008; Kohn, 2007), meerkats (Candea, 2010), forests (Kohn, 2013), plants (Hustak & Myers, 2012) and matsutake mushrooms (Tsing, 2015), scholars have interrogated human exceptionalism by illustrating the myriad ways in which the world we inhabit and what we are, only comes-into-being through multispecies engagements. Such research, as a means of thinking through the pragmatics of being kin with more-than-human others focuses on commensal or at the very least, non-lethal others as a means of illustrating symbiotic relations that challenge the idea of human exceptionalism and atomistic self-sufficiency. From helminths to gut bacteria to palm trees and sheep, living with these more-than-human others may be problematic and inconvenient at times, but very rarely do they pose a direct threat to the self-maintenance and/or preservation of the human organism. Yet, the persistence of HIV and the recent emergence of COVID-19 for example, both raise different kinds of questions related to finitude (both for the virus, and for us humans) and demands that we pay closer attention not only to the realities of living with pathogenic others, but also the particularities of doing non-anthropocentric social science research with pathogens.

Lest it be mistaken, it must be made clear that in posing the continued self-preservation of the human as a question, I am not advocating for the death of the human; critiques of anthropocentrism can after all operate alongside a commitment to the perpetuation of the human species. Rather, what I aim to do here – as detailed in the following chapters – is to develop a sensitivity that will attune us to the novelty that emerges when the perdurance of the human organism is not taken for granted. *Is the eradication and/or*

elimination of unfavourable microbes like HIV and COVID-19 the only way forward? Faced with a lethal and omnipresent microbe, how do we reckon with the kinds of biopolitical and microbiopolitical calculations needed to reassemble modern life? Situated at the point where two different microbiopolitics meet (i.e. post-Pasteurian microbiopolitics and the more traditional immuno-microbiopolitics), this thesis builds on posthumanist thinking and probes the limits of current debates in social theory regarding multispecies relationality by asking: *what might it mean to embrace an 'unloved' and 'unloving' pathogenic other, if doing so also simultaneously threatens one's very own existence?*

To this end, this thesis engages HIV as a more-than-human heuristic to learn what microbes, or more specifically, pathogens, have to teach us about different ways of wading through viral clouds, uncertain ethico-onto-epistem-ological projects and multiplying utopian and apocalyptic futures. We live with myriad pathogens at any point in time and space and my choice of HIV as a more-than-human heuristic (over mycobacterium tuberculosis or the hepatitis C virus, for example) should be taken not only to reflect the importance of HIV to the contemporary homosexual experience, but also the various ways in which the threat of HIV infection has been and remains entangled with the way I express my desires, as well as my wish to confront and redress these entanglements head-on. Returning once again to my encounter with Matias, it is not simply the fact that Matias had sex without a condom that triggered such an emotional response on my part – it was that he dared to do so, and I did not. It may very well be that Matias only dared to have sex without a condom because he was taking HIV PrEP, but this response reveals, in itself, what I found additionally curious about my meeting with Matias: *dare we live with pathogens only when the threat they pose to human life has been neutralised through biomedical means like HIV PrEP?* There are thus at least two ways in which my research might respond to Matias's comment that 'normal' sex for him was sex without a condom. On the one hand, as an invitation to explore the plural becomings of HIV in the age of HIV PrEP; and on the other, as a lure to explore the symbiopolitics (Helmreich, 2009) of HIV co-existence in situations where the threat the virus poses to human life is not neutralised and/or the perdurance of the human subject is not taken as a priority. Needless to say, the two responses identified here are not necessarily mutually exclusive, but it is worth highlighting that it is in the context of the latter, that this thesis will investigate how HIV is multiple.

Thinking with HIV thus, this thesis argues that in the context of pathogens which do not become 'good' in a post-Pasteurian framework (as opposed to microbes like hookworms (Lorimer, 2016), for example), taking seriously the idea that the microbe is multiple will require that research focuses not exclusively on health-seeking practices but also those which do not aim directly at the absence of disease or even the avoidance of death. Subsequently, by telling multispecies stories associated with voluntary HIV autoinfection as practiced by the Los Frikis and bugchasers, I will open up the microbiopolitics of HIV to theoretical and empirical scrutiny and illustrate how a multiplicity of HIVs and modes of lives are gestated-into-being

(Neimanis, 2018b). By braiding these multispecies (his)stories and their multiply enacted bodies – both human and more-than-human – with meditations on anthropocentrism, human foodiness, birth and loss, this thesis takes to heart how multispecies worldmaking is never only benign and makes evident some of the microbiopolitical calculations at stake when reassembling modern life. Very broadly then, the thesis might be understood as doing two things: the first illustrates how all bodies, whether human or more-than-human, can always be enacted in novel ways that defy the logics associated with immuno-microbiopolitics; and the second highlights how the reconfiguration of the anthropocentric ways we think and approach disease, finitude, birth and death is inseparable from the development of a sensitivity that will attune us to the novel viral becomings that emerge when the perdurance of the human organism is not taken for granted. To be clear, the aim of this thesis is not to advocate for any particular way of living with pathogens – and much less to romanticise or encourage any form of viral autoinfection. Rather, by examining particular instances of HIV autoinfection and weaving together the specific social, political and economic conditions from which it emerges with the hopes, wants and suffering experienced by their practitioners, the goal then is to elucidate what is wagered, gained and lost in embracing an 'unloved' and 'unloving' pathogenic other. *Relatedly, what new modes of thinking and being might emerge when we start to think of and use our material bodies as the gestational milieu from which other more-than-human lives and modes of life may develop?*

The next chapter sets the groundwork for the rest of the thesis by providing a brief history of the HIV/AIDS epidemic. Histories vary depending on who is telling them and the history of the epidemic I provide here is guided primarily by my experience of the epidemic as a gay man and the predominantly biomedicalised manner in which HIV is dealt with in my life. It should come as no surprise to the reader then, that the history I provide pays special attention not only to the way in which gay men have responded to HIV, but also to the epidemiological-biomedical epistemic shift underpinning changing constructions of HIV infection. I also examine how the individual and the social have been traditionally conceptualised as distinct from each other, before exploring how this dualism is tied problematically to the widespread endorsement of the 'structuralist' approach in HIV prevention. By highlighting how HIV social science research is currently grappling with the important task of resisting the bifurcation of HIV prevention into the social on one hand, and the individual on the other, this chapter makes clear how HIV has been problematised and subsequently charts the areas which my thesis departs from and wants to contribute to.

Chapter two constructs the theoretical scaffolding supporting this thesis and explores another kind of bifurcation: the cleaving of the individual into the human on one hand and the more-than-human on the other. By detailing some key concepts related to body, disease and infection that form the foundation of what I take to be an immunological mode of doing HIV prevention, this chapter considers how bodies come to be conceptualised as ontologically distinct entities. Here, the work of Ed Cohen on the 'immunity-as-

defence' paradigm (2009) is key and the chapter proceeds via a close reading of his research on immunology and biopolitics. Cohen helps me to trace the emergence of the concept of biological immunity through the 19th century, thus allowing me to provide an account of how and why estrangement is often the default and primary mode of human relations with microbes. As we shall see, in depicting the world as thoroughly inhabited by deadly microbes from which we needed to defend ourselves from, the 'immunity-as-defence' paradigm radically reconfigures not only the way in which 'we imagine our bodies as living organisms but also how we imagine what it means to be an organism living among other organisms and what it means to be a human living among other humans' (Cohen, 2009, p. 4). This brief excursion into the history of immunology will then serve as the backdrop from which I will be able to examine the flourishing of a more ecological, post-Pasteurian way of relating to microbes (chapter three) and subsequently, the proliferation of more-than-antagonistic relations with HIV (chapters four and five).

The relational ontology that underpins this thesis is also explained in chapter two. Here, I draw on Barad's (2007) agential realism and discuss some of the key concepts associated with it: posthuman agency, intra-action, agential cuts and ethico-onto-epistem-ology. My engagement with Barad's agential realism is further enriched by a consideration of the work of STS scholars (Gad, Jensen, & Winthereik, 2015; Jensen, 2017; Latour & Woolgar, 1986; Law, 2015; Lien & Law, 2011) on multiple ontologies. This includes, as mentioned previously, Mol's *The Body Multiple* and I will apply the insights I have gleaned from my reading of her work specifically to HIV. I also explore Paxson's notion of microbiopolitics (2008) in greater depth in this chapter and after having made explicit how any microbiopolitics always indexes the friction that results from the traffic between its respective intraspecies and interspecies ethics, I consider the relevance of value relationalism to microbiopolitics. Arguing that value, subject and object are always entangled in a process of mutual co-constitution, microbiopolitics cannot thus be separated from axiology and becomes then, a process through which we actively engage in world-making. The chapter concludes with a discussion of Edelman's 'reproductive futurism' (2004), which is a rhetoric of futurity associated with the valorisation of a heteronormative political discourse and social order motivated by a moral commitment to 'protect' our future, or not-yet-brought-into-being children. Through an examination of Edelman's Child and all that it stands for, I will illustrate how reproductive futurity and the 'immunity-as-defence' paradigm work hand-in-hand to prevent 'damage' (Tuck, 2009) and ensure the survival of the Child.

Chapter three builds on the discussion in the previous two chapters to assemble and make clear the problem with which this thesis takes as its concern. It explores how despite the widespread and ready acceptance of the 'immunity-as-defence' paradigm which coaxes us into adopting the self/not-self distinction as a means of organising the way in which we live as organisms among other organisms, other ways of co-existence are possible. To this end, I will draw on recent developments in microbiology and immunology to interrogate the generally accepted idea that the immune system functions solely to

discriminate self from non-self. By examining the phenomenon of autoimmunity and research on the holobiont, I will demonstrate how in spite of the allure of the self/non-self-dichotomy, self cannot be understood as ontologically distinct from non-self since the tolerance of 'foreign' entities is not only a normal part of an organism's 'housekeeping', it is also vitally crucial to its evolution and development – this will also serve to put some empirical 'meat' on the theoretical 'skeleton' I constructed using agential realism and science and technology studies in the previous chapter. If 19th century scientific research advanced a vision of the human body as a singularity that is both exposed to and opposed to a relentlessly pathogenic 'outside', new research challenges us to revise our ideas around human-microbial relationality towards a more ecological format. This ecological mode of doing biomedical science is associated with the shift towards a post-Pasteurian notion of health and relatedly, the proliferation of practices which aim to deliberately entangle human and microbes based on the health value the latter provides. From this post-Pasteurian perspective, no microbe is 'intrinsically healthy or unhealthy; instead, they are contributors to the becoming or retraction of health' (Andrews, 2018, p. 5) and we are thus beginning to renounce our faith and attachment to the microbiopolitical evaluation of microbes as universally 'negative' to consider how the microbe may indeed be multiple.

Chapter three also makes the important argument that for all the differences that obtain between post-Pasteurianism and Pasteurianism, both remain resolutely normatively anthropocentric (Mylius, 2018) in the sense that the self-maintenance and/or preservation of the human organism is always privileged. I illustrate how for so long as our epistemic frameworks remain committed to the preservation of the human organism, what also emerges is a kind of conservatism that obscures and obstructs the bringing-into-being of other ways of living that may not necessarily share the same kind of commitment to the perdurance of the human. Certainly, this conservatism may not hinder humans from forming new relationalities with microbes that offer some sort of biological benefit to them, but the issue becomes particularly pronounced in the context of pathogenic microbes like HIV, since practices that aim deliberately at the entanglement of human and HIV *for therapeutic ends* (i.e. the securing of the human subject) do not exist. For those microbes which remain solely pathogenic within this post-Pasteurian framework, taking seriously the idea that the microbe is indeed multiple will require that research focus not exclusively on health-seeking practices but also on those which do not aim directly at the absence of disease or even the avoidance of death.

The next two chapters take as their concern practices of human-microbial relationality that do not aim directly at the absence of disease so as to examine the ways in which HIV may be brought-into-being as desirable outside a post-Pasteurian framework. Chapter four focuses on the Los Frikis, a group of punk musicians in Castro's Cuba who practiced HIV autoinfection as a reaction against oppression and as a means of survival. Chapter five is dedicated to bugchasers, or men who deliberately forgo condoms when

having sex with other men so as to expose and infect themselves with HIV. Through the telling of these multispecies stories centred around HIV autoinfection, the wide range of human and viral identities that can and may be brought-into-being will be empirically illustrated. Particular attention will be paid to the unique social, economic and cultural conditions implicated in the practices of HIV autoinfection so as to make evident the stakes involved in embracing an 'unloved' and 'unloving' virus. By diffracting the experiences of the Los Frikis and bugchasers using the theoretical tools sketched out in chapters two and three, I will also comment on the predominant ways in which we think futurity, birth, death and life. These multispecies stories often evoke feelings of extreme discomfort and are not easy to tell or stomach. Yet, the hope here is that by telling these multispecies stories it will be possible to let the experiences of the Los Frikis and the bugchasers introduce a difference to how we approach human-microbial relations. As I will illustrate, if the Los Frikis *lived by embracing death*, bugchasers *embrace death to birth life*. In both instances regardless, while HIV autoinfection ultimately kills those involved in a biological sense, such practices also constituted forms of creativity that enhance/expand the possibilities of what it means to be 'human'.

Chapter four begins with a brief account of the historical, social and economic forces that shaped Cuba's unique HIV/AIDS containment effort. This will be important for understanding not only the evolution of the HIV/AIDS epidemic in Cuba, but also the context in which the Los Frikis practiced HIV autoinfection. As it will become clear, the Los Frikis and their experimentation with alternative ways of living with HIV illustrates how even though HIV is indeed detrimental for human health, this does not preclude HIV from taking on a range of other more positive values. Through an analysis of *Socialism or Death* (Norborg & Sand, 1995), one of the very few films dedicated to the documentation and exploration of the phenomenon of HIV autoinfection in Cuba, I also meditate on the relationship between life and death and consider how the practice of HIV autoinfection becomes entangled with the emergence of a queer alternative to socialist life precisely because of its affiliation with death. I continue my reflections on the relationship between life and death by engaging with research on the significance of death (Aries, 1974, 1981, 1985; Bataille, 1962; Bauman, 1992a; Freud, 2014; Heidegger, 1927; Romanillos, 2011) and argue that our anthropocentric conception of finitude shapes the kinds of knowledges and worlds that are acknowledged and made possible in the first instance.

Chapter five begins by noting some key distinctions between the practice of barebacking and bugchasing: the former relates to the eroticisation of condomless anal intercourse, while the latter, involves the eroticisation of HIV, its transmission and its infective processes. Through a survey of existing social science research on bugchasing, I then illustrate how because HIV continues to be problematised in what I have previously argued to be an immunological register, the phenomenon of bugchasing is often seen as relevant only in so far as it can be made sense of in relation to viral eradication/elimination. This renders

the practice of bugchasing irrelevant and uninteresting, and robs it of the power to make a difference to our thinking. I approach bugchasing thus not as an already well-defined problem for HIV prevention, but as a lure through which we may rethink what is interesting about bugchasing in the first instance. My analysis of bugchasing in this chapter owes much to Tim Dean's extensive research on the subject (2000, 2008, 2011, 2012, 2015), and draws heavily in particular, on his seminal study of barebacking culture, *Unlimited Intimacy* (2009). Through a re-reading of Dean's work from a multispecies perspective, I examine how the practice of bugchasing is implicated in novel modes of being-with others, both human and more-than-human. As I demonstrate, because viral transmission simultaneously transforms all parties involved into brothers, fathers and sons under bugchasing kinship systems, it also allows its practitioners to *birth* new forms of life with the help of HIV. Thinking with bugchasers thus compels us to approach finitude not only in terms of mortality, but also natality (O'Byrne, 2010). The chapter concludes with a discussion of the science of how microbes reproduce. I suggest that HIV be understood as a socio-material memory of sorts, coming-into-being precisely because it is an accumulated microbiological repository of all intra-actions that the virus has had with human bodies across time. The expansive relations any viral infection engenders will always exceed the infector/infectee dyad, since every event of novel HIV infection embroils the infectee in a larger trans-temporal/spatial chain of (socio-material) relations. It is in this manner that it then becomes possible for HIV infection to be transposed from its current status as a death-bringing event that causes only harm, to become an accepted and established means of forming positive, nourishing and life-giving multispecies relations.

Chapter six, the last chapter, draws the thesis to a close by weaving together some of the thematic strands related to life, birth and death dispersed across the previous chapters by elaborating on what one thinker has termed '*posthuman gestationality*' (Neimanis, 2018b). Explaining and adapting philosopher Astrida Neimanis's figuration *'bodies of water'*, I speculate on what it might mean to conceive of our bodies as *milieu-for-another* in a pathogenic context – that is to say, as directed towards the becoming of other bodies and ultimately, as 'providing the conditions for an unpredictable plurality to flourish' (Chandler & Neimanis, 2013, p. 62). Through an engagement with Neimanis's work, I argue that what may be gleaned from the multispecies stories I have told of the Los Frikis and bugchasers is how a decommitment to self-preservation at all costs can help us actively participate in the bringing-into-being of different forms of life and modes of living that emerge precisely through the dissolution, *to varying degrees*, of the perdurance of the human body. I offer one last multispecies story related to my encounters with covidiots, or gay men who despite COVID-19 pandemic guidelines, continue to meet up so as to engage in a myriad of (non)-sexual practices. Thinking with these covidiots, I ruminate on Ivan Illich's *art of suffering* and how it can help us navigate the tensions we experience as a result of the (sometimes harsh and oppressive) realities of our lived experience and the ever-present potential for change and novelty – as theorised by the notion of *milieu-for-another*. I conclude by suggesting that our own arts of suffering and the kind of affirmative ethics

(Braidotti, 2016) we adopt will temper the limits to which we are able not only to develop a sensitivity that will attune us to novel becomings, but also become embodied in others/serve as-milieu-for-pathogenic-other. This I propose, will be key for the broader posthuman project of working out the value of human life not only for humans, but for life more generally.

1. Groundwork

This chapter considers multiple aspects of the HIV/AIDS epidemic as a means of setting the groundwork for the rest of the thesis. Section 1.1 is concerned with providing a brief history of the HIV/AIDS epidemic in the UK and north American context, with a particular focus on the shifting epistemological frames (epidemiology and biomedicine) used to make sense of the epidemic. Section 1.2 will examine how this epidemiological-biomedical epistemic shift is entangled with where 'responsibility' for viral containment and HIV/AIDS risk is located. Lastly, through an attention to the manner in which the individual and the social have been historically conceptualised in HIV prevention, sections 1.3 and 1.4 will examine key ideas and developments in the field of HIV prevention that led to the widespread endorsement of the 'structuralist' approach. The aim of this chapter is two-folds. Firstly, it is to provide historical context for the thesis. Secondly, by highlighting the current state of social science research in the field of HIV prevention, I will subsequently be able to set out the areas in which my thesis departs from and wants to contribute to.

1.1 A brief history of the HIV/AIDS epidemic

I want to begin by briefly considering the development of the HIV/AIDS epidemic as a means of providing a historical backdrop to the disease this thesis is interested in thinking with. It should be noted however, that it is neither within the scope nor the main concern of this thesis to provide a comprehensive and extensive overview of the history of the HIV/AIDS epidemic. After all, as one prominent Public Health historian points out, the history of the epidemic changes depending on who tells it and while for some 'the gay response is the history of AIDS, for others it is the impact on sexual attitudes and behaviour, the story of research policy, or of health education' (Berridge, 1996, p. 3). The history of the HIV/AIDS epidemic I have chosen to narrate here is guided primarily by an interest in understanding how and why the problem of HIV prevention has been assembled in the biomedical form it takes today and thus pays special attention to the epidemiological-biomedical epistemic shift that underpinned changing constructions of HIV infection. To this end, this section will present a synthesis of the work done by scholars who have written on the historical development of the HIV/AIDS epidemic, namely Virginia Berridge in the UK and that of Jeffrey Escoffier and Gerald Oppenheimer in the North American context. While there exists differences in the development of the HIV/AIDS epidemic in both contexts, epidemiology played a prominent role for both the UK and North America in making sense of HIV/AIDS in the early 1980s (ibid.). As it will be shown, although epidemiology has since ceded to biomedical science the power to construct the meaning of HIV infection in what has been termed the 'biomedicaliasation' of HIV/AIDS (Kippax & Race, 2003; Kippax & Stephenson, 2012), the former was nonetheless crucial in shaping the nascent field of HIV prevention. In a scientific climate plagued by uncertainty, it was epidemiology and its set of procedures for generating and

testing hypothetical causal variables that offered a means of arriving at some explanatory framework to allow a road towards controlling the epidemic to be paved (Oppenheimer, 1992).

Unlike virology, epidemiology has a strong social component in that 'it explicitly incorporates perceptions of a population's social relations, behavioural patterns, and experiences into its explanation of disease processes' and the resulting definition and understanding of HIV infection that epidemiology provided in the early part of the epidemic is thus one that firmly grounds the disease as a 'biological process occurring within a determinant social matrix' (ibid., p.50). As a scientific discipline, epidemiology is primarily concerned with collecting data on the frequency of disease in a defined population and examining any variation in the distribution of disease in related sub-populations, so that hypotheses regarding the relationship between a disease and its variables may be generated (Last, 1995). Stated simply, the aim here is to determine why certain groups/individuals (do not) develop a particular disease by studying patterns of illness in the population. The relative significance of these hypotheses can then be tested and refined using different epidemiological study designs, most common of which include the case-control and cohort study designs (ibid.). Consequently, unlike biomedical scientists who tend to be reductionist and monocausal in their approach to disease aetiology in their search for the 'first cause' of disease, epidemiologists tend to subscribe to a multifactorial model of disease, allowing for a range of biological, social and environmental factors to be included for consideration when studying how the disease in question is produced (Oppenheimer, 1992). This broad-based approach is commonly identified with the metaphor of the 'web of causation' (Krieger, 1994, p. 891):

> *Conceptually, the metaphor evoked the powerful image of a spider's web, an elegantly linked network of delicate strands, the multiple intersections representing specific risk factors or outcomes, and the strands symbolizing diverse causal pathways. It encouraged epidemiologists to look for multiple causes and multiple effects, and to identify the many—as opposed to singular—routes by which disease could be prevented.*

By 'casting a wide net' through its multifactorial approach in understanding disease, epidemiology is especially suited for exploring new and emerging medical phenomena, allowing for epidemic control to be executed at various points even before the etiologic agent behind a disease has yet to be identified. It is for this reason, that the work of epidemiologists shaped much of the early response to HIV/AIDS.

Prior to the discovery of HIV, the viral etiologic agent behind AIDS in 1984, most, if not all who were impacted by HIV/AIDS in some way or another were groping in the dark. Not much was known about the natural history and clinical course of HIV/AIDS and this lack of knowledge meant that much of the early response to the disease was characterised by a sense of novelty and disorientation. The unusual

appearance of Pneumocystis carinii pneumonia (PCP) and Kaposi's sarcoma (KS) in a large number of previously healthy homosexual men, both medical conditions that normally only manifest in individuals with severely suppressed or defective immune systems, first heralded the emergence of HIV/AIDS as a phenomenon to be reckoned with. The link between HIV/AIDS and homosexuality was first hypothesised in June 1981 in the *Morbidity and Mortality Weekly Report (MMWR)*, with the CDC commenting that 'the fact that these patients were all homosexuals suggests an association between some aspect of a homosexual lifestyle or disease acquired through sexual contact and Pneumocystis pneumonia in this population' (Centers for Disease Control and Prevention, 1981). This 'lifestyle' hypothesis would subsequently be further refined through the use of case-control epidemiological studies, where patients with PCP/KS were compared to 'healthy' men who were as similar as possible in all ways other than the disease status, so as to retrospectively determine what accounts for the different health statuses of each group (Escoffier, 1998b). With attention focused on the 'gay lifestyle', a number of hypothetical factors which were thought to be positively associated with HIV/AIDS came under scientific scrutiny: higher number of sexual partners; the use of poppers (amyl nitrates); a history of syphilis; and attendance at bath houses/saunas (Berridge, 1996). The 'lifestyle' hypothesis suggested that prevention of HIV/AIDS could only be achieved by modifying the 'gay lifestyle' itself and thus had huge ramifications for the kind of public health interventions proposed. Consequently, the kinds of disease prevention measures that emerged from the widely accepted 'lifestyle' hypothesis included: reducing the number of anonymous sexual partners, getting to know your partner and his sexual history; shutting down bath houses/saunas, stopping the use of poppers and most drastically, abstaining from sex altogether (Escoffier, 1998b, p. 13). The grouping of individuals is *de rigeur* in epidemiology, both as a means of intervention and as an analytical precondition. However, even though the definition of the experiences and desires of gay men as risk factors for HIV/AIDS allowed epidemiology to offer the possibility of disease control and prevention, such categorisations also have pernicious social and political repercussions (Oppenheimer, 1992). As Adam states, when these epidemiological categories 'which identify HIV risk in terms of types of sex and demographic groups enter into personal strategies of navigating risk in societies, they necessarily operate as a hierarchy of risk and safety, and cannot but become imbricated with widespread cultural binaries of clean and unclean, guilt and innocence, moral and immoral' (2006, p. 173). Hence, even though the CDC attempted to justify the categorisation of homosexuals as a 'risk group' in the MMWR by stating that 'each risk group contains many persons who probably have little risk of acquiring AIDS' (Centers for Disease Control and Prevention, 1983, p. 467), without the identification of the viral etiologic agent, the designation of a risk group was in effect also designation as disease 'carrier' (Escoffier, 1998b).

The initial epidemiological characterisation of HIV/AIDS detailed above owed much to the collaboration of the gay community, who explained to epidemiologists gay social and sexual norms (Delany, 1991). In a particularly evocative paragraph written on the productive interplay between epidemiology and the

vernacular knowledge of everyday gay life, Escoffier details how both the gay community and public health professionals interacted with each other (1998b, p. 15):

> *Epidemiological speculation was widespread in community during the early eighties. Many gay men attended lectures by medical researchers on sexually transmitted diseases, hepatitis B, "gay bowel syndrome," poppers, and made themselves familiar with research on the new disease. Thus, gay men's everyday knowledge of disease, health, sexuality and the social effects of medicine drew on the experience of individuals as well as the latest medical and epidemiological research. Analogously, epidemiologists, very much like anthropologists, relied on their gay male informants to help them understand the social conventions, sexual behaviour, and the urban geography of sexual activity. Vernacular knowledge thus played an important role in guiding medical researchers through the sexual and social life of homosexuals as well as shaping the gay community's capacity to care for those gay men diagnosed with AIDS, its political mobilization and its strategy for prevention.*

There is no doubt that this collaboration was immensely difficult given that it took place against a backdrop where both the gay male community and public health institutions were interested in securing their self-interests which were not always compatible – for the former, to protect their hard-earned sexual freedom achieved through homosexual activism in the 1960s and for the latter, disease control (Berridge, 1996; S. Epstein, 1988; Escoffier, 1998a). Given the immense resources that public health institutions had (support of the government and the tremendous epistemic authority of science and medicine) as compared to the gay community, the relationship between public health institutions and the gay community may be seen as resembling more of an unequal contest rather than a partnership, in which renewed fear of persecution, stigmatisation and quarantine (owing to the 'lifestyle hypothesis' and the proposed disease prevention measures) meant that the latter had to actively respond on multiple fronts. Pressed on one hand to respond to the epidemiological challenge of understanding the disease by collaborating with epidemiologists given that the matter was a matter of life and death for many gay men, and on the other to defend itself against further stigmatisation, the gay community had its work cut out for itself (Escoffier, 1998b). Unable to explain the occurrence of AIDS in heterosexual men and women, injecting drug users and haemophiliacs however, the homosexual 'lifestyle' hypothesis soon fell out of favour. Observing that the pattern and distribution of AIDS cases were similar to that of hepatitis B virus infection, a shift in epidemiological thinking took place: it was now suggested that while lifestyle factors may indirectly cause AIDS, it was the existence and transmission of an infectious pathogen that was directly responsible for AIDS (Oppenheimer, 1992). Eventually in 1984, HIV, a viral etiologic agent behind AIDS was isolated. With the discovery of the microbial cause behind AIDS, the relative importance of epidemiology lessened and

'bench' scientists (virologists, immunologists, etc.) now redefined HIV/AIDS as a set of biomedical problems to be solved chemically by drugs or vaccines.

This biomedical understanding of HIV/AIDS was reinforced by the successful development of serological procedures for the detection of antibodies to HIV (the enzyme-linked immunosorbent assay (ELISA) and the Western blot technique) which allowed the biological boundaries of this new disease to be traced, outlined and controlled (ibid.). Up to this point, the 'toolbox' used to tackle the HIV/AIDS epidemic consisted mostly of strategies that aimed to change health behaviours/induce condom use (see Fisher & Fisher, 2000; Fisher, Williams, Fisher, & Malloy, 1999; Gerrard & Reis, 1989; Gillmore et al., 1997; O'Leary, Jemmott, Goodhart, & Gebelt, 1996; Solomon & DeJong, 1989) through different interventions which targeted information, motivation or behavioural skills (Albarracín et al., 2005). While these interventions were helpful in slowing the spread of HIV, they 'did little to inspire a belief that the epidemic could be stopped altogether' (Leclerc-Madlala, Broomhall, & Fieno, 2018, p. 972). The advent of antiretroviral drugs radically changed the aims towards which HIV prevention aspired to. Mother-to-child transmission of HIV could now be successfully prevented (Connor et al., 1994) and viral loads in HIV-infected bodies could be suppressed to undetectable levels via combination antiretroviral therapy (ART) (Palmisano & Vella, 2011). The proven success of ARVs for treatment in the 1990s subsequently sparked a change in thinking about HIV prevention, prompting explorations into how ARVs, as a biomedical solution might help bring about the end of HIV/AIDS. For example, in 2006, it was argued that expanding access to ART would help curb the spread of HIV since persons with very low viral loads were significantly less likely to transmit the virus (Montaner et al., 2006). Building on this idea of treating all HIV-infected individuals with ART immediately as a means to tackle the HIV epidemic, an influential study by Granich et al. showed that based on mathematical modelling, a programme of universal voluntary HIV testing and immediate ART could in theory, reduce HIV 'transmission to the point at which elimination might be feasible by 2020' (R. M. Granich, Gilks, Dye, De Cock, & Williams, 2009, p. 54). These studies, along with many others (Cohen et al., 2011; Dodd, Garnett, & Hallett, 2010; Garnett & Baggaley, 2009; R. Granich et al., 2010) initiated and facilitated a shift in thinking about ARVs, towards one which was more prevention-centred, giving birth thus to the idea of 'treatment-as-prevention' (TasP).

The use of ARVs to prevent HIV transmission would soon also expand to include HIV-negative individuals in 2010, following the results of the iPrEx (Pre-exposure Prophylaxis Initiative) trial (Grant et al., 2010), which showed that ARVs could be successfully used for HIV pre-exposure prophylaxis (PrEP) (see also Baeten et al., 2012; S. McCormack et al., 2016; Molina et al., 2015). With its ability to be administered to both HIV-positive and -negative individuals so that HIV transmission could be prevented, the emergence of ARVs as a clear biomedical solution to the HIV epidemic is inseparable from the subsequent proliferation of post-HIV narratives which promised not only that the 'end of AIDS' was possible, but also immanent (Kenworthy,

Thomann, & Parker, 2018). All that was needed to actualise this promise, to realise this post-HIV future, as Fauci and Marston opined, was simply for us to 'follow the science' (2015, p. 2197). To 'follow the science', shifts in HIV/AIDS policies were needed and to that end, policy guidance documents on how to bring about the end of AIDS were developed and released – most notably, this included the UNAIDS *Fast track: Ending the AIDS epidemic by 2030* document (UNAIDS, 2014b). Launched in 2014, the Fast track targets released by the Joint United Nations Programme on HIV and AIDS (UNAIDS) aims to have 90% of all people living with HIV (PLHIV) knowing their HIV status, 90% of all people diagnosed with HIV infection receiving sustained ART and 90% of all individuals receiving ART attaining viral suppression. When this three-part target is met, it is expected that at least 73% of all people living with HIV globally will be virally suppressed; modelling subsequently suggests that achieving these targets by 2020 is crucial if the AIDS epidemic is to be ended by 2030 (UNAIDS, 2014a). Serving as a clarion call for concerted and sustained efforts to combat HIV/AIDS, the ambitious 90-90-90 targets act as a central pillar around which the field of HIV prevention has rallied around to mobilise resources in the quest to end the AIDS epidemic: for example, soon after the UNAIDS 90-90-90 targets were declared, the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) responded by releasing the *Delivering on the Promise of an AIDS-Free Generation* strategy document (2014), which detailed how it would go about achieving these targets. By 2015, most major players in the field of HIV/AIDS had adopted the language around 'ending AIDS' and endorsed the UNAIDS 90-90-90 goals (Leclerc-Madlala et al., 2018)

1.2 Medical technologies, responsibilities and risk

The epidemiological-biomedical shift described thus far is responsible not only for changing the manner in which we apprehend and manage HIV/AIDS risk, but it is also to a large extent irrevocably entangled with where 'responsibility' for viral containment and HIV/AIDS risk is located. As discussed previously, prior to the identification of the viral etiological cause of AIDS, the HIV/AIDS epidemic was understood and responded to epidemiologically. Because AIDS was discovered initially in particular social groups (gay men, sex workers, injecting drug users, haemophiliacs), epidemiologists offered an initial means of responding to the HIV/AIDS epidemic through the use of epidemiological categories based on these 'high risk social groups'. The use of these epidemiological categories was crucial for the early development of a means of tackling the HIV/AIDS epidemic in a climate plagued by much uncertainty, but it also simultaneously 'created a division between the "general population" and those at risk, and allowed HIV/AIDS risk to be constructed around particular identity categories' (Race, 2001, p. 173). Without the identification of the viral etiologic agent, the designation of a risk group was in effect also designation as disease 'carrier'; HIV/AIDS risk thus came to be seen as directly related to membership in these 'high risk social groups' (Escoffier, 1998b). From this epidemiological standpoint, to be gay was as Paul Flowers (2001) rightly points out, both to be 'at risk' and also to be dangerously posing a risk. The emergence of AIDS was so closely

associated with gay men that early on in the epidemic, it was actually termed gay-related immune deficiency, or GRID (Altman, 1995). The threat of HIV/AIDS and being gay became synonymous. Collectively 'othered' and understood as 'risky', gay men became the subject of much moralistic debate which intensified their social exclusion from the rest of the general population. This social exclusion was further compounded by state neglect and a lack of Public Health interventions in the very early stages of the HIV/AIDS epidemic; gay men thus had to manage the HIV risks they were facing as a community themselves and did so via the formation of AIDS service organisations (ASOs) such as the Terrence Higgins Trust in the UK (see Berridge, 1996) or the Gay Men's Health Crisis in America. Faced with a lack of support from the state and social marginalisation, the formation of these organisations were a crucial means through which the increasing number of gay men infected with HIV were supported by other gay men through buddying systems and palliative care (Brown, 1997). Epidemiological techniques for understanding and tackling HIV risk (i.e. the identification of 'high risk' groups) thus also created the very conditions needed for the gay community to mobilise in response to AIDS. Reflecting on this collective gay response to the HIV/AIDS epidemic, it has been pointed out that (Flowers, 2001, p. 55):

> *… [because] no-one knew exactly what caused illness, how disease could be treated, how infection was transmitted and, indeed, who was infected and who was not, the risks of AIDS were situated quite firmly at the community level … Responsibility and blame for HIV risk management were distributed evenly across all gay men and were, to a great extent, met by solidarity.*

Practically, what this meant was that ASOs encouraged all gay men to assume that their own bodies and that of every sexual partner to be already infected with HIV. From this perspective, knowledge of HIV status, or the absence or presence of the etiological agent responsible for AIDS became irrelevant for the task of preventing HIV transmission so long as all gay men acted in a manner which assumed that everyone else had already been infected with HIV (Ainslie, 1999). These assumptions of universal infectiousness, accompanied by the adoption of precautions against the transmission of HIV amongst all gay men subsequently gave rise to a safe sex ethic that has been argued to be firmly rooted in the community. This safe sex ethic was subsequently adopted by Public Health as an effective approach to HIV prevention (Flowers, Duncan, & Frankis, 2000; Patton, 1990; Race, 2001) and became the new cultural norm that guided sexual practice among gay men (Ariss, 1997). Two points are noteworthy here. Firstly, during this period, because HIV/AIDS risk was located at the community level (i.e. among gay men as opposed to in the rest of the population), responsibility for its management was also treated as something to be assumed by *all* gay men. As Watney (1990) succinctly puts it, it is precisely because the HIV/AIDS epidemic was seen as community problem requiring a community response that the safe sex ethic established by gay men is first and foremost a cultural practice, and not simply a series of techniques used for the prevention of HIV infection. Secondly, as Douglas Crimp noted, Public Health institutions at that time believed that sexual

abstinence was the only viable response to HIV/AIDS; it was homosexual defiance and insistence on having sex *during an epidemic*, that subsequently led to the development of safe sex. To paraphrase Crimp, gay promiscuity, by providing an alternate response to the epidemic, was in fact that which saved us, even if it was believed at that time to be that which would destroy us (1987, p. 252). On this, Cindy Patton is in agreement, noting how the 'elaborateness of gay male sexual culture which may have once contributed to the spread of AIDS has been rapidly transformed into one that inhibits spread of the disease' (1987, p. 72) while still promoting sexual liberation. Relating to more than just the acquisition of new sexual partners, promiscuity thus also concerns the proliferation of 'new ideas and new ways of doing things' (Dean, 2009, p. 5).

The identification of HIV in 1983 and the development of the HIV antibody test in 1984 subsequently ushered in a new era for the management of HIV/AIDS risk – what Flowers has aptly named 'somatic risk management' (2001, p. 56):

> *Quite suddenly, the virus quite literally became embodied. The apparent homogeneity of gay men as a singular high-risk group was broken, as gay men could be distinguished via the HIV antibody test as HIV antibody positive or HIV antibody negative. The boundaries of risk were reiterated as now kinds of gay men (antibody positive and antibody negative) could be seen as distinctly 'posing a risk' and 'being at risk' respectively. I use the term 'somatic' to stress this change, as it was suddenly the possibility of people's discrete bodies, rather than their shared group membership (i.e. sexual identity), that became intimately linked with the threat of HIV or AIDS.*

Three things are worth commenting on here. Firstly, prior to the development of a test for HIV antibodies, the risk of HIV transmission and the risk of developing AIDS were not discernible from one another – both kinds of risks were thus collapsed into one. Gay men's varied and complex motives for undertaking or not undertaking HIV testing surely affected actual testing rates (see Siegel, Levine, Brooks, & Kern, 1989), but it is the *potential* of the test to distinguish between HIV antibody positive/negative bodies that I want to focus on here, since it is this potential that implicates HIV testing with the creation of two related, but distinct kinds of risks. HIV risk was something that concerned all involved: HIV-negative individuals were at risk of being infected with the virus, whereas HIV-positive individuals were at risk of infecting someone. The risk of developing AIDS however, was not something HIV-negative individuals experienced – this was a risk belonging solely to individuals who had already been infected with HIV. In this manner, not only is HIV testing technology entangled with the production of 'risk categories', it is also inseparable from the ways in which the burden for the management of different kinds of risks comes to be distributed. Secondly, the ability to detect HIV antibodies through testing meant that the virus could now be located in specific bodies – this had a huge impact on the manner in which HIV/AIDS risk was conceptualised and located. No longer

situated within 'high risk groups', HIV risk now shifted to the level of the somatic. In other words, HIV risk and its management 'had shifted from the explicitly social (group membership) to the individual body, and this highlighted the role of an individual's control over his or her own body' (ibid., p. 57). As I will illustrate in the next section, the shift in focus to the individual as the locus of HIV risk management has much affinity with a thoroughgoing individualism in Public Health approaches to HIV prevention that problematically stresses individual choice and responsibility at the expense of the 'social'. To use Watney's terms, HIV risk management had thus undergone a shift from being a cultural practice to a series of techniques (1990). Lastly, and this is what I wish to focus on here, while the aim was previously 'equality' and solidarity among gay men when it came to risk management due to the assumptions of universal infectiousness, the ability to test for HIV meant that this 'equality' was now shattered. Creating new divisive categories which allowed for the differentiation of gay men (i.e. HIV-negative, HIV-positive and HIV untested), HIV testing procedures thus allowed for the *direction* of HIV risk to be ascertained and by association, for the relocation of HIV risk as well as the redistribution of responsibility for the management of this risk. The introduction of these divisions predicated on HIV status meant that 'equality of risk was replaced by hierarchy of risk, where some gay men were categorised as *at risk* while others were clearly *posing* a risk' (Flowers et al., 2000, p. 287). Shared responsibility for the prevention of HIV transmission thus gave way to an individualisation of responsibility. While epidemiological techniques for apprehending HIV risk previously 'othered' gay men by marking them as a 'high risk social group', the advent of the HIV antibody test can be said to introduce new processes of marginalisation and 'othering' (Race, 2001). Echoing this point, Flowers writes (2001, p. 59):

> *Knowing one was HIV positive was associated with the greatest burden of risk management. Shared risks relating to transmission were no longer equally distributed. Knowledge of positive status engendered a greater sense of responsibility both in terms of avoiding HIV transmission and begging questions of status disclosure to sexual partners.*

It should come as no surprise that the manner in which the location of HIV risk (and responsibility for its management) relate to HIV antibody status is varied and complex; expectations around who should shoulder the responsibility for the prevention of HIV transmission may therefore not straightforwardly or necessarily always fall on the HIV-positive individual (see Dowsett, 2009; Rangel & Adam, 2014). That being said, quantitative research has shown that the majority of gay men who believe themselves to be HIV-negative do indeed expect their HIV-positive sexual partners to disclose their serostatus prior to sex (Reid, Weatherburn, Hickson, & Stephens, 2002). In what may seem to be an unfair turn of events, HIV-positive individuals may thus be blamed for the risk of HIV transmission even if it was the other sexual partner that decides to have sex without the use of condoms (Cusick & Rhodes, 2000). In situations where HIV-positive individuals choose to disclose their HIV status prior to a sexual encounter, they may also subsequently face

rejection from potential sexual partners and if not, may still be penalised through their experience of an 'intensification of responsibility for the safety of sexual interaction' (M. Davis, 2008, p. 185). Simply put, HIV risk and the prevention of HIV transmission became almost exclusively skewed towards the perspective of those who were uninfected (whether imagined or diagnosed) such that the experiences of HIV-positive individuals became neglected. Previous assumptions of universal positivity has thus given way to new assumptions of universal negativity and with this, gay community constructions of health action moved 'from a socially inclusive to a socially exclusive position' (Flowers, 2001, p. 294). Although the HIV antibody test was no doubt a source of relief for those not infected and served also as a risk management tool for those infected, in an ironic and perhaps even cruel turn of events, it also meant that even while the gay community continues to be 'othered' by society at large, these 'othering' processes now also came to function within the gay community itself. For those gay men who chose to test and were found to be HIV positive, they now risked being marginalised by the gay community, which until only recently had stood together in solidarity owing to (now outmoded) assumptions of universal infectiousness. Some ASOs thus came to develop and advocate anti-testing positions on the basis that knowledge of one's HIV status may subsequently expose HIV-positive individuals to discrimination (Ariss, 1997). In stating all of this however, it is not my intention to suggest that there has always existed a 'unity' among gay men which was fractured as a result of advances in HIV testing procedures. As Race rightly points out, the supposed solidarity shown by gay men in the early stages of the epidemic can itself be read as 'contingent on the social technology created by epidemiological discourse on AIDS 'risk groups'' (2001, p. 175). What I wish to do here thus is not to argue for a return to some golden age where an 'untainted' gay community existed, but rather simply to foreground how medical technologies are irrevocably entangled with the production and maintenance of new and existing socialities and subjectivities.

As suggested above, the ability to test for HIV antibodies facilitated the multiplication of risks by allowing HIV risk to be distinguished from AIDS risk. This proliferation of risks would continue with improvements in HIV-related technology. While the HIV antibody test previously divided gay men along dichotomous lines (HIV-positive and HIV-negative), the development of antiretroviral drugs for HIV treatment and new testing technology capable of measuring CD4+ counts (the number of T-white blood cells in a given amount of blood) and viral loads (the number of viral particles in a given amount of blood) (Sabin, Mocroft, Lepri, & Phillips, 1998) meant that this division would undergo further fragmentation. Now, one was not simply a HIV-positive individual – the ability to test for viral loads meant that in addition to being HIV-positive, one also had an *undetectable* viral load or a *detectable* viral load. As Race explains, the achievement of 'undetectability' is significant because (2001, p. 176):

> *Viral load test results are used literally as the most accurate predictor of time to death from AIDS. If one's viral load is undetectable one is not progressing to AIDS. Detectability equals progression*

> *towards death at a certain rate in this equation. A favourite way of explaining this among researchers likens being HIV positive to a train speeding towards a broken bridge. The viral load is the speed of the train; the CD4 T-cell count is the distance from the site of doom.*

Insofar as it can be said that there was an apparent 'unity' in the AIDS risk experienced by HIV-positive individuals in the era of 'somatic risk management', this would now be fragmented: not all HIV-positive individuals are at the same risk of developing AIDS, some are at more risk than others (i.e. those with a detectable viral load). Given that HIV transmission has been shown to not occur when one's viral load is 'undetectable' (Cohen et al., 2011; Rodger et al., 2016, 2019), there was also a change in where the 'greatest' risk of HIV infection would be located – 'detectable' HIV-positive individuals are at a higher risk of infecting someone as compared to someone who had an 'undetectable' viral load. The achievement of an 'undetectable' viral load is possible only with ARVs, which are used as part of the management of HIV infection in what is known as Highly Active Anti-Retroviral Therapy (HAART). This possibility of biomedically treating and managing HIV infection meant that being infected with HIV was no longer a death sentence, but rather a chronic condition to be managed via a pharmaceutical regime. With the right treatment, HAART halts the progression of AIDS by suppressing HIV in the body. However, adherence to HAART is absolutely crucial for treatment success (i.e. the achievement of viral suppression) and the treatment regime can be rather unforgiving (Race, 2001, pp. 175–176):

> *Regimes involve taking a number of pills two or three times a day, consisting of three or more different types of drug, and there are often strict requirements around timing, what you eat and when, and possible interactions with other medications and recreational drugs … In order to monitor therapy and obtain repeat prescriptions it is necessary to have viral load tests on a regular basis … Missing doses of drugs contributes to the development of viral resistance. When one's viral load rises, this indicates treatment failure, usually a result of the virus becoming resistant to the drugs.*

Beyond the fact that strict medication adherence is crucial for the achievement of viral suppression, what is noteworthy here is also how adherence, or more precisely, non-adherence to HAART may also itself now become a source of risk. Failure to adhere to medication regimes contributes to the development of viral resistance, which in turn threatens to render existing treatments for HIV, ineffective (Sethi, Celentano, Gange, Moore, & Gallant, 2003). In this way, 'non-compliers or poor adherers become a further source of risk or 'pollution' and culpability for their inability to assimilate intrusive, toxic and taxing drug regimens for the rest of their lives remains clearly with them' (Flowers, 2001, p. 64). HAART is capable of reducing infectiousness in HIV-positive individuals through viral suppression, but in the process of doing so, paradoxically reproduces these subjects as sources of new HIV risk by way of non-adherence/the

development drug-resistant strains of HIV, which subsequently threaten not only to nullify the benefits of the HAART regimes that are in use in the first place, but also to worsen the situation through further infection of non-infected others with these drug-resistant strains of HIV. As Hirsch et al. point out, antiretroviral 'drug resistance is present wherever antiretroviral drugs are widely used, and as treatment rollout continues', viral resistance will expand (2008, p. 278). Tests with the ability to check for viral resistance have been developed, which in turn produce another subset of HIV-positive individuals as a new source of risk (i.e. those individuals with drug-resistant HIV). Subsequently, it is not difficult to imagine new responsibilities being placed on these individuals to not only disclose their HIV serostatus and their viral loads, but also the strain of HIV that they have as well (Flowers, 2001). Hence, while advancements in HIV-related medicine by way of improved testing procedures and treatment options make it possible for HIV infection to be managed as a chronic condition, thereby prolonging the lives of those infected, they also have a hand in the (re)location of risks (both new and old) that serve not only to differentiate individuals, but also to make unique and differing demands on these individuals in terms of how these risks are to be managed. Waldby was not mistaken when she argued that hierarchies of HIV risk 'maps itself onto the hierarchy already implied in the binaries of sexual identity, so that women are treated as threats to men, and homosexuals as threats to heterosexuals' (2003, p. 8) – but what is also clear from my account above is that the emergence of new HIV-related technologies is integral to the production of these hierarchies of risk as well.

1.3 HIV*/AIDS, Biomedicalisation and Individualism*

In the previous section, I have attempted to provide an account of how new techniques for understanding HIV risk and attaining health (e.g. testing, HAART and PrEP) cannot but imbricate socio-sexual subjects, (re)locating risks and responsibilities for risk management in the process. While HIV/AIDS risks were collectively shouldered and managed at the community level early on in the epidemic by gay men, the availability of testing technology and biomedical treatment subsequently led to what has been the proliferation of HIV and AIDS risk categories and the privatisation of risk-management (Flowers et al., 2000). As I have shown, with the advent of each novel technique for understanding HIV risk or/and attaining health (e.g. testing, HAART and PrEP) new risk categories are created. Insofar as the previous section might be said to have been written from a 'micro' perspective in focusing on how medical technologies are entwined with the production and maintenance of new and existing subjectivities, risks and responsibilities, the rest of this chapter (1.3 and 1.4) can be said to take a different 'macro' route by charting the historical development of various approaches to HIV prevention. By examining shifting conceptualisations of the social and the individual within the field of HIV prevention, it will be possible to gain a better understanding of the manner in which what is commonly known as the 'structuralist' approach to HIV prevention (Kippax, 2010; Kippax & Stephenson, 2016; Kippax, Stephenson, Parker, &

Aggleton, 2013) – which focuses on the relevance of structural forces in understanding patterns of HIV transmission and responses to the risk of HIV infection – has come to be widely endorsed in the field of HIV prevention. The account of the ascendance of the 'structuralist' approach to HIV prevention presented here will subsequently serve as a springboard into the rest of the thesis, which will consider where and how posthuman and ecological thought might contribute to thinking about the problem of HIV differently. In so far as my discussion of the development of the 'structuralist' approach for HIV prevention is primarily motivated by my desire to identify areas in which posthuman theory may intervene and not so much as to provide a comprehensive historical account, what I have written here is therefore necessarily 'tidied up' and truncated in some sense. While I am aware that the account provided here may not do adequate justice to the complex unfolding of events leading up to the predominant mode of HIV prevention as it is practiced today, it does nevertheless, serve as a useful starting point for this thesis to intervene and make a contribution to social science research in the field of HIV.

From the anomalous emergence of PCP/KS among previously healthy homosexual men till the discovery of HIV in 1984, epidemiology played a vital role in shaping the direction of early responses to the epidemic. In the absence of any knowledge of the 'first cause' of AIDS, by black boxing and setting aside questions of human biology, virology and immunology, epidemiologists were able to describe the social context and morphology of HIV/AIDS by adopting a multifactorial approach and analysing the relationship between the distribution of disease in subpopulations and associated environmental, social and interpersonal factors (Weed, 1998). Unable to identify the microbial cause of AIDS however, epidemiology soon ceded dominance to microbiology with the isolation of HIV, taking on a more peripheral and supportive role in providing evidence for the viral hypothesis (Oppenheimer, 1992). Advancement in HIV-related technologies first in the form of serological procedures for the detection HIV antibodies and later on in ART and PrEP further served to solidify biomedicine's hold over HIV/AIDS. As detailed in the previous section, this diminished interest in the multifactorial model that epidemiology was the champion for, meant that the problem of HIV/AIDS increasingly came to be conceptualised in a monocausal manner (i.e. microbially) to be dealt with via biomedical means, which in turn, led to the creation of new risk categories and the (re)location of the responsibility for HIV prevention among different groups. A review of plenaries with a focus on HIV prevention at past international AIDS conferences done by Barry Adam show, for example, that a large proportion of speakers treat prevention primarily/exclusively as a biomedical issue (2011, p. 3). A quick review of major international policy documents reveals a similar trend: the advancement of research in HIV prevention is taken primarily as an issue related to the development of biomedical technologies, such as vaccines, microbicides, pre- or post-exposure prophylaxis or circumcision (ibid.).

Whereas under the purview of epidemiology, HIV/AIDS was previously configured simultaneously both as a social and biological problem – a socially transmitted disease – in its current form, the problem of HIV/AIDS

is assembled strictly as a biomedical problem accompanied by clear biomedical solutions (ARVs, TasP and PrEP). An example will serve to clarify this point further. In 1990, an influential article called for the development of a microbicide gel as a form of female empowerment (Stein, 1990). The idea here was that by allowing females to bypass tricky or difficult condom negotiations with their male partners, the gel would subsequently allow them to be better able to protect themselves from HIV infection. Even though microbicide gel as a method for HIV prevention is less efficacious than condoms, since the former is able to be implemented much more frequently, it thus has the potential to prevent more cases of HIV infection at the population level. Stein is right in stating that to 'prevent AIDS, both men and women need to be empowered' (ibid., p. 461) and her call for the development of methods that help prevent HIV transmission at the woman's initiative is without doubt, something to be welcomed. Yet, in all of this, it may be said that Stein does not go far enough. While the article does draw our attention to the unequal gender relations at play which give rise to the situation where women are unable to successfully negotiate condom use with their male partners, the solution proposed is one that is premised on these unequal relations. Consequently, the logic of male domination that acts as a barrier for women to safely and successfully negotiate condom use is not challenged and is worked around instead. In other words, while Stein's call for a microbicide gel to be developed as a form of female empowerment in HIV prevention is laudable and must be supported, it is in some ways inadequate, because rather than situate the biomedical intervention as part of the solution *and* interrogating the social and cultural reasons that produce the need to empower women in the first place, the microbicide gel as biomedical intervention is simply privileged as *the* solution.

The exclusive focus on biomedical interventions as *the answer* to the HIV/AIDS epidemic is perhaps nowhere clearer than in Thabo Mbeki's involvement with AIDS denialism in the early 2000s. Mbeki, shortly after becoming South Africa's president in 1999, questioned the scientific consensus that HIV is the cause of AIDS, arguing that the spread of AIDS in Africa was distinct from the western context (Ceccarelli, 2011). Subsequently convening a Presidential AIDS Advisory Panel to investigate the causes of the AIDS epidemic in South Africa, the panel consisted of a significant number of scientists and experts who rejected the causal link between HIV and AIDS. During his presidency from 1999 to 2008, Mbeki instituted multiple public health policies (such as the denial of ART to AIDS patients, or the withdrawal of medicine to prevent mother-to-child transmission of HIV) that subsequently led to an estimated 171,000 new HIV infections and 343,000 deaths between 1999 and 2002 (Nattrass, 2008, p. 157). In response to Mbeki's AIDS denialist claims, the Durban Declaration, a document which declared HIV to be the cause of AIDS was signed by more than 5000 scientists and published in the prestigious scientific journal, *Nature*. As an editorial in the same issue of Nature that the declaration was published in made clear, the Durban Declaration ('Declaration for AIDS sufferers', 2000):

> *… is a massive international response to recent debates in South Africa, and is made on behalf of people infected with HIV. Frustrated at a needless and tragic delay in treating sufferers, the authors see the declaration as a decisive rejection of arguments put forward by many of those on a panel set up by South African President Thabo Mbeki to 're-evaluate' the cause of AIDS.*

Mbeki and his advisory panel were clearly mistaken in their assertion that HIV does not cause AIDS. HIV infection can lead to AIDS if not treated in time and the tragedy that is AIDS denialism in the history of the HIV/AIDS epidemic needs to be recognised. Moving beyond this recognition however, I want to entertain here the possibility that the controversies about HIV/AIDS in South Africa have something important to teach us about biomedicine – or more specifically, about the danger that accompanies the certainty that seems to surround biomedicine and its ability to provide *the* answer to the HIV/AIDS epidemic. I want to draw attention thus, to certain aspects of the Durban Declaration and Mbeki's arguments that are relevant to the broader point I am making about the kind of dominance that biomedical solutions have in relation to the HIV/AIDS epidemic. According to the declaration ('The Durban Declaration', 2000):

> *As with any other chronic infection, various factors have a role in determining the risk of disease. People who are malnourished, who already suffer other infections or who are older, tend to be more susceptible to the rapid development of AIDS following HIV infection. However, none of these factors weakens the scientific evidence that HIV is the sole cause of the AIDS epidemic.*

In juxtaposition to the monocausal view of the AIDS epidemic espoused in the Durban Declaration above, in an interview with Time Magazine, Mbeki argued that ('Mbeki: Africa's Challenges', 2000):

> *Clearly there is such a thing as acquired immune deficiency. The question you have to ask is what produces this deficiency. A whole variety of things can cause the immune system to collapse. Now it is perfectly possible that among those things is a particular virus. But the notion that immune deficiency is only acquired from a single virus cannot be sustained. Once you say immune deficiency is acquired from that virus your response will be antiviral drugs. But if you accept that there can be a variety of reasons, including poverty and the many diseases that afflict Africans, then you can have a more comprehensive treatment response.*

Implicit in debates between Mbeki and the international scientific community over AIDS denialism is therefore a tension between monocausal and multicausal ways of understanding the cause of AIDS (Furman, 2017). The Durban Declaration was not wrong in stating that HIV is the sole cause of the AIDS epidemic: without the existence of the virus, there would be no epidemic to speak of. Yet, in some ways, the Durban Declaration was also mistaken, not because HIV does not cause AIDS (as Mbeki argued), but

because it is only part of the answer in understanding how an epidemic comes to be. In other words, while the existence of HIV alone is sufficient as a biomedical explanation for how AIDS comes to manifest in the body of a HIV-positive individual, because an epidemic happens on a scale that exceeds that of a single individual, what is also relevant here are the 'flows' of HIV and how the virus moves within a population. Colleen O'Manique makes a similar point in her book *Neoliberalism and AIDS Crisis in Sub-Saharan Africa: Globalization's Pandemic*, in which she highlights how the 'ontological monism' of AIDS policies in sub-Saharan Africa focuses on biomedicine, reducing the 'AIDS pandemic to its individual clinical and behavioural dimensions', erasing and obscuring 'the material conditions which allow the virus to thrive, the broader factors that condition access to treatment, and the day to day realities of affected households where the tangible impacts are felt' (2004, p. 5). We might thus place the altercation between Mbeki and the broader scientific community as happening within a larger debate concerning the aetiology of *a disease in an individual* and that of *an epidemic in a population,* or more simply put, 'between a causal account of the AIDS disease and a causal account of the AIDS epidemic' (Mosley, 2004, p. 400). Thus, the factors that Mbeki identifies (e.g. poverty) can cause HIV in the sense that they make some individuals far more vulnerable to HIV infection than other. This is precisely the point the Mbeki was trying to make in his speech at the opening of the 13th International AIDS Conference in Durban (2000):

> *Poverty is the main reason why babies are not vaccinated, why clean water and sanitation are not provided, why curative drugs and other treatments are unavailable and why mothers die in childbirth. It is the underlying cause of reduced life expectancy, handicap, disability and starvation. Poverty is a major contributor to mental illness, stress, suicide, family disintegration and substance abuse. Every year in the developing world 12.2 million children under 5 years die, most of them from causes which could be prevented for just a few US cents per child. They die largely because of world indifference, but most of all they die because they are poor.*

This vulnerability to HIV infection that Mbeki refers to above will be examined in greater detail in what follows, but it is important to note that as Mosley rightly points out, what is actually happening in the debate over AIDS denialism is a clash between a monocausal biomedical approach and a multicausal epidemiological approach to HIV prevention (2004). As Didier Fassin – sociologist, anthropologist, doctor and the ex-vice president of *Médecins sans Frontières* – has convincingly argued in his book on the politics of AIDS in South Africa, given that precarious economic and social conditions (i.e. poverty, unemployment, food shortages, violence, etcetera) are a regular feature of the lives of those living in South Africa, understanding the AIDS epidemic in this context thus also requires one to look beyond biomedicine to the social history of the country, and in particular, to issues of race and apartheid (2007). Subsequently, one possible reading of Mbeki's involvement with AIDS denialism is that he tried (unsuccessfully) to disrupt the importance afforded to biomedical understandings of HIV/AIDS to 'shift international focus back to broad-

scale epidemiology' (van Rijn, 2006, p. 523). From this perspective, the Durban Declaration may be read in two ways. The first way, as indicated above, is that it is an effort by the international scientific community to convince Mbeki that HIV is indeed the exclusive cause of the AIDS epidemic. The second way, is that the insistence on HIV as the sole cause of the AIDS epidemic despite acknowledging the relevance of other socio-economic factors, might also be read as the privileging of biomedical interventions as *the answer* to the HIV/AIDS epidemic – and it was this privilege which Mbeki was keen to challenge. As van Rijn points out, because Mbeki eschewed the monocausal account of HIV/AIDS, choosing instead to see 'multiple interrelated causes, options remained open' (ibid., p. 532). Commenting on the outbreak of plague in Europe, Stillwaggon states (2006, p. 8):

> *Throughout history it has been clear that the epidemic spread of disease requires favourable conditions. Rats (or soldiers) aboard a ship from an eastern port carried plague-infected fleas into Italy in 1348 and sparked the epidemic spread of plague in Europe, wiping out one-third of the population in most of the continent. This introduction was a random event, but it was certainly not Western Europe's only exposure to rats or plague. In 1348, plague entered a continent weakened by 30 years of falling per capita food consumption and increasing immiseration of the peasantry due to increased feudal demands. The population of Europe had already been falling in the decades leading up to 1348, and a series of disastrous harvests exacerbated the effects of war … Even though many nobles and townspeople perished in the Black Death, the ecologic context for the epidemic was the worsening economic situation of the peasantry.*

In some ways then, the point I am making here about the need for a multicausal approach to understanding epidemics is an old one; as the example above illustrates, biomedical scientists and epidemiologists have both known for years the importance of considering both microbial and socio-economic factors. Yet, as Furman rightly points out, what the AIDS denialism debate detailed above makes clear is 'that this historical lesson has not been taken to heart' (2017). The history of the HIV/AIDS epidemic (and those of other epidemics as well) illustrates that there are many other ways to reduce the incidence of a disease even when knowledge of the microbial agent of the disease and its mechanisms of infection remains unknown; hence, the assumed 'superiority' of biomedical solutions to the HIV/AIDS epidemic need not always be a given.

The diagnosis I have provided above is in my opinion, emblematic of much of the current state of affairs in the field of HIV prevention. Foreclosing other possible creative solutions to the problem of HIV through its singular focus on biomedical solutions, HIV prevention as an enterprise is now such that it becomes one of working through how best to make these biomedical solutions relevant to all who are involved, so that they may adopt these technologies and change their behaviour (Kippax et al., 2013). Social factors that were

previously seen as integral in understanding the production of HIV infection now become secondary, unimportant and relevant only to the extent that what presents itself as the 'social' is but a set of distinct and supplementary set of problems or barriers to be worked through such that the aforementioned biomedical solution may be imposed (Fee & Krieger, 1993; Kippax & Stephenson, 2016). There is a danger thus, that in naturalising biomedical strategies as the most effective and capable way of redressing the consequences of HIV/AIDS, 'alternate understandings that might locate HIV/AIDS not just within suffering and vulnerable human bodies, but within the biosocial domain as a whole' may also be bracketed off (Cohen, 2008, p. 99). I will have more to say about these 'alternate understandings' later on in the thesis, but for now, it should also be highlighted that this bias towards and emphasis on biomedical solutions as panacea, can also be seen in calls increasingly made by leaders in the field of HIV prevention for the adoption of an implementation science approach to improve the efficiency and effectiveness of HIV programs in the last few years (Hirschhorn, Ojikutu, & Rodriguez, 2007; Padian et al., 2011). Understood as 'a multidisciplinary specialty that seeks generalisable knowledge about the behaviour of stakeholders, organisations, communities, and individuals in order to understand the scale of, reasons for, and strategies to close the gap between evidence and routine practice for health in real-world contexts', implementation science in the context of HIV prevention is thus concerned with bridging the gap between what is known to work and what is actually achieved on the ground (Odeny et al., 2015, p. e180). Notwithstanding the success implementation science has had, what is noteworthy here is that once again, what is known to work in HIV prevention is assumed to have been correctly identified and consequently, all that is left to be done is for Public Health to 'implement' what it deems best (Lambdin et al., 2015). By seeking generalisable knowledge with regards to the implementation of successful HIV prevention interventions, these interventions are abstracted away from the local contexts in which they emerge, and the social is later 'added back' only as something that matters as 'enablers of' or 'barriers to' HIV transmission and prevention. Yet, as it shall become evident in the discussion that follows, the social cannot be an afterthought: HIV interventions are social affairs and their uptake and subsequent success (or failure) are necessarily entangled with the social worlds they inhibit, thus, what is 'known to work' can never be determined in advance and then later 'implemented' (Kippax & Stephenson, 2016).

One of the epistemic consequences of the biomedicalisation of HIV/AIDS as Ed Cohen points out, is that it 'limits knowledge about how HIV/AIDS inhabits this world and the human organisms who exist within it by affirming that individuals constitute the central, if not exclusive, locus of concern' (2008b, p. 97). This focus on the individual is however, not exclusive to HIV/AIDS and might be said to apply more generally to disease control (Lock, 1996, p. 210):

> *Efforts to reduce suffering have habitually focused on the control and repair of individual bodies. The social origins of suffering and distress, including poverty and discrimination, even if fleetingly*

recognized, are set aside, while effort is expended in controlling disease and averting death through biomedical manipulations.

This relation between the individual and biomedicine has been commented on by prominent social scientists in the field of HIV prevention, who have collectively highlighted how this emphasis on the individual as the primary unit of analysis (Roberts & Matthews, 2012) is also aided by a thoroughgoing individualism that takes as incontrovertible the value of individual rights, personal choice and the rational pursuit of one's own interest (Adam, 2011; Fee & Krieger, 1993; Kaplan, 1990; Kippax, 2010). In other words, the biomedical paradigm is intimately affiliated with a 'possessive individualism' and the individual is conceived of as 'essentially the proprietor of his own person or capacities, owing nothing to society for them' (Macpherson, 1962, p. 3). As it shall become apparent in what follows, the upshot of this individualism in HIV prevention is that social science researchers have spent much time advocating for the 'dismantling' of this dichotomy between the biological individual and the social community, which continue to circulate in predominant paradigms in HIV prevention research and major scholarly journal in AIDS (Adam, 2006; Waterston, 1997).

Reflecting on policy responses to the HIV/AIDS epidemic, Scheper-Hughes notes that there exists an uncanny, if not rare consensus with regards to the importance of individualism in thinking about how the epidemic should be responded to (1994, p. 991):

There exist certain conventions or ground rules, among them: the caveat that the AIDS epidemic should not be compared to other, earlier epidemics (whether of influenza, tuberculosis, or syphilis); the insistence that AIDS be treated as a 'special case'; and the acceptance of individually-oriented education programs as the only acceptable form of AIDS prevention. Any public health initiatives even appearing to be collective, universal, or routine (such as widespread and repeated HIV testing for sexually active and other 'high risk' populations) are dismissed as counter-productive (i.e. 'driving AIDS underground') and condemned as a dangerous infringement on individual rights.

Philosopher Isabelle Stengers makes a similar comment, stating that at least in Europe, the urgency of HIV/AIDS as a medical problem was never yielded to and 'demagogic and security-seeking temptations' were resisted such that the threat of the epidemic did not suffice as an 'alibi for coercive measures (obligatory testing, isolation units)' (1997, pp. 215–216). This is not surprising: emerging right on the heels of the sexual revolution and the feminist/gay rights movements, the HIV/AIDS epidemic was conceived as both a public health responsibility and a human right concern right from the start (Danziger, 2000). Gays and lesbians in America entered the era of AIDS equipped with the experience and knowledge of challenging dominant frames which constructed homosexuality as medically, morally and psychologically

undesirable from previous social movements and thus possessed relatively high levels of 'cultural capital' (Bourdieu, 1986) to organise themselves effectively to ensure that HIV prevention would not proceed at the expense of civil rights and liberties (S. Epstein, 1995). Viewed in terms of a crisis in human rights that had some public health dimensions, rather than as a public health crisis with human rights dimensions, many of the old, classical methods of epidemic control based on collective and coercive public health measures which were capable of interrupting disease transmission and protecting the social body were now eschewed and subsequently became obsolete (Scheper-Hughes, 1994). This eschewal of coercive public health measures in favour of individually-oriented education programmes for the control of the epidemic was also pragmatic in nature. As Antoine Lazarus, professor of Public Health medicine points out (quoted in Stengers, 1997, pp. 216–217):

> *… it appears that the imposition of obligatory testing would not give good results, neither at the technical level, because not everyone would submit to it, and furthermore it would be necessary to continually repeat the obligatory examinations that we know, even when negative, not to be the immediate proof of noncontagion, nor on the psychological level, because the population would believe itself to be protected by effective general measures when, in fact, this would not be so. That means that today, in this particular case (but it has strong value as a model), the most efficient solution for both individual and collective prevention is information campaigns about measures that are easy to access, but freely chosen. Let everyone do what is necessary, let everyone take protections in his or her own way. The risk is everyone's; protective measures need to be taken by everyone. No prohibitions or constraints are capable of giving good results. The instrument of prevention, considering the diversity of characters, of situations, of cultures, of ambivalent temptations of life, and of playing with death, is an individual responsibility.*

Dominated thus by individual-level behavioural interventions, HIV prevention efforts have historically focused on influencing knowledge, attitudes and behaviours. As with most things however, there are exceptions. Cuba stands out in the history of the HIV/AIDS epidemic for its non-conformance with the individualistic approach outlined above, opting instead to adopt a fully 'classical' Public Health approach in containing the HIV/AIDS epidemic which included routine testing, contact tracing, partner notification, medical surveillance and partial quarantine of all HIV seropositive individuals to sanatoriums (Bayer & Healton, 1989) – this will be explored in greater detail in chapter three. Despite great success in containing the epidemic and keeping AIDS-related mortality low however, the Cuban AIDS program has been the focus of much criticism by the international community for violating the rights and liberty of HIV positive individuals (Scheper-Hughes, 1994). From the perspective of these critics, even if successful epidemic control may be achieved through coercive measures such as those adopted by Cuba, the huge human rights-related sacrifices required makes the victory but a pyrrhic one.

What the foregoing makes evidently clear is that this 'possessive individualism' occupies a central and almost unassailable position in relation to current thinking about how the HIV/AIDS epidemic is to be tackled. Danziger (2000) makes a similar argument and describes in detail several areas in which the protection of individual rights has been placed on par with (or even above) the imperatives of HIV prevention. Policy responses subsequently reflect this importance given to the individual (as opposed to that of the collective, the society) by emphasising the interests, rights and responsibilities of individuals *qua* individuals. Here, the individual is figured as a 'calculating, rational, self-interested subject' that is paradigmatic not only of contemporary neoliberalism (Smart, 2003, p. 7) but serves also as the basis on which psychological models of behaviour change such as 'health belief models' and 'theories of reasoned action' that dominate much of HIV prevention research, proceed (Adam, 2006). Put plainly, the logic is as follows: if one is seropositive, one will not engage in 'risky' behaviour; and if one is seronegative, one will act in a manner to ensure that this continues. According to these psychological models, in the marketplace of life, one aims to maximise longevity and individuals are thus 'portrayed as free actors who are constrained only by their ignorance about the threat to which they may be exposed or their lack of self-efficacy' (Lupton, 1999, p. 23). Consequently, the focus of the majority of HIV prevention efforts have been on individuals and risk, with the aim being to modify the risk behaviours of individuals through education. Configured as rational, self-efficacious agents, individuals are expected to change their behaviour if they are given the appropriate information about the 'facts' of HIV transmission risk/prevention and are given access to the relevant HIV prevention tools such as condoms and clean needles/syringes (Kippax, 2010). Nevertheless, because HIV transmission still occurs, the binary opposite of the rational individual – the 'HIV prevention failure' – must also exist. From this perspective, these 'HIV prevention failures' engage in risky behaviour because of the manifestation of some form of 'irrationality': deficits in knowledge, inaccurate perceptions of risk, sexual identity problems, sexual impulsivity and exogenous pressure (ibid.).

Approaching HIV prevention from such an individualistic paradigm can be problematic however. As Wolffers argues, behaviour change does not occur simply as the result of having received appropriate information about HIV risk/prevention (2000). Kippax makes a similar point and too argues that information is never taken up passively by those for whom it is aimed at. Instead, HIV risk/prevention knowledge is appropriated and made sense of with reference to one's personal life and prevailing norms about sex and relationships, which in turn are necessarily situated within local socio-economic contexts (Kippax, 2010). Commenting on the Summertown miners in South Africa with whom she did research with, Catherine Campbell notes that (2003, pp. 25–26):

> *… while miners were often in possession of the basic facts about HIV, which they had internalized through health education programmes, these facts were embedded within a range of doubts,*

> *qualifications, contradictions and uncertainties, which served to blunt the factual messages imparted by the programmes. Health education messages are not simply passively accepted by their audiences, but must compete with alternative beliefs, experiences and logics that may be more compelling than the information that the health educator seeks to impart.*

In a similar vein, the development of an effective HIV prevention strategy by gay men in the early stages of the epidemic that focused not on monogamy or abstinence from sex (Kippax & Race, 2003) – which was what public health institutions were leaning towards at that time – but instead on risk-reduction and limiting certain sexual practices which entailed the exchange of bodily fluids, reveals how HIV prevention information and medical knowledge were not received as is, but appropriated and made to fit around gay men's lived experience (Kippax & Kinder, 2002; Rosengarten, Race, & Kippax, 2000; Zablotska et al., 2009). What research from all these scholars make abundantly clear is that the provision of HIV risk/prevention knowledge does not and need not necessarily lead to what is desired as outcomes for HIV prevention-abstinence, the eschewal of unprotected sex and the insistence on the use of a condom for sexual intercourse. There is no direct linear causative relationship between the provision of HIV risk/prevention knowledge and the desired behaviour change. Hence, even though behaviour change is taken as simply the product of adequate information by the individualistic approach to HIV prevention, it cannot be but the case that what is 'described as behaviour is always itself social, imbued with meaning, rich in significance, and the outcome of a variety of forces' (Kippax et al., 2013, p. 1368). From this perspective, behaviour that is deemed as 'irrational and risky' thus becomes an invitation to consider the manifestation of a different sort of rationality, one that might perhaps depart from the logic of health maximisation that dominates individualistic and neoliberal approaches to HIV prevention. Adam (2006) makes a similar point, arguing that because social hierarchies prescribe who is more desirable and valuable in sexual relationships, a myriad of vulnerabilities are created that may then 'pressure' certain individuals to partake in unprotected sex, thereby increasing their vulnerability to HIV infection. For example, research done with older gay men (Murray & Adam, 2001), Asian Americans (Choi et al., 1999), aboriginal men in Australia (Bartos, McLeod, & Nott, 1993) and young gay men who perceive themselves to be less attractive than their partners (Seal et al., 2000) all suggest that it may sometimes be difficult for 'less desirable' individuals to push for safer sex lest the prospective/current partner be offended and lost. In these situations, the actions of these individuals may be said to be 'irrational', but only in the sense that they follow a 'rationality quite apart from health maximization and points to social locations and constructions of the self that 'make sense' in their own way' (Adam, 2006, p. 173).

More generally then, the problem with approaching HIV prevention from an individualistic paradigm can be traced to the fact that priority is given to the individual over the context in which she lives in (Fee & Krieger,

1993). This subsequently leads to a situation where the individual becomes an abstracted concept, free of any socio-cultural 'baggage'. Ailio summarises the problem elegantly (2016, p. 242):

> *… what individual education, empowerment and support presuppose and work for is the individuals' capacity to rise above their social context and take control of their lives. As a result, the people targeted by the global response are abstracted from their local socio-political realities and everything in their lives that stands in the way of this move of abstraction becomes problematic. The aspects of their lives which involve ways, customs or habits that do not go along with these abstractions are ignored or marginalized and the success of the response becomes dependent on overcoming these ways, customs and habits, regardless of their role in people's lives.*

There is a kind of positivism latent in the individualistic approach to HIV prevention, where individual behaviour, actions and attributes are abstracted from context and subsequently fixed into place as variables that are then mathematically manipulated to produce the sort of actuarial, asocial and ahistorical reasoning assumed to be applicable to all involved (Adam, 2011). Increasingly seen as inadequate, the 2000 World AIDS Report marked a turning point in which the individualistic approach to HIV prevention was highlighted as problematic (UNAIDS, 2000b, p. 37):

> *Individuals do not live and make decisions in a vacuum. After years of focusing on personal choices about lifestyles, by the early 1990s AIDS prevention programmes were giving renewed attention to the social and economic context of people's daily lives … Recognition of the factors that fuel the HIV epidemic prompted the development of new programmes for reducing vulnerability - in the civil, political, economic, social and cultural arenas - that would work in synergy with the more traditional prevention approaches aimed at diminishing risk-taking behaviour.*

The traditional focus of HIV prevention efforts (i.e. individual 'risk' behaviours) would now come to be augmented with a new object: vulnerability (Ayres, Paiva, & França, 2011). According to the 2011 UNAIDS Terminology Guidelines, vulnerability refers to the (UNAIDS, 2011, p. 30):

> *… unequal opportunities, social exclusion, unemployment, or precarious employment and other social, cultural, political, and economic factors that make a person more susceptible to HIV infection and to developing AIDS. The factors underlying vulnerability may reduce the ability of individuals and communities to avoid HIV risk and may be outside the control of individuals.*

For example, fear of HIV/AIDS-related stigma and discrimination may discourage individuals both from getting tested for HIV (Kalichman & Simbayi, 2003) and disclosing their serostatus to their sexual partners

(Nachega et al., 2005) – both of which may put others at increased risk of HIV infection. Similarly, women who live in environments where gender-related violence is common may also find negotiating successful condom use with their male partners to be not only difficult, but also dangerous, putting them at higher risk of HIV infection (Dunkle et al., 2006; Jewkes et al., 2006). While the traditional focus on risk behaviours foregrounded individual agency and placed responsibility for HIV (non-)infection on the individual, an attention to vulnerability emphasises a different view, drawing attention instead to the conditions from which such HIV risk may emerge and the need to facilitate changes in broader structural elements if HIV risk is to be addressed adequately (Bertozzi, Laga, Bautista-Arredondo, & Coutinho, 2008; Blanchard & Aral, 2010; Coates, Richter, & Caceres, 2008). By sensitising us to how a range of inequalities (e.g. economic, racial, legal, social, gender) are central not only to the manner in which HIV infection happens, but also to the ways in which individuals may respond, the concept of vulnerability thereby highlights the need for HIV prevention interventions to happen not only on the individual level, but structurally as well (Wolffers, 2000). As Gupta et al. point out, structural approaches may be implemented as single policies/programmes or as community processes, but the common thread running through all of them is that they are committed to catalysing change by transforming the 'social, economic, political, or environmental factors that determine HIV risk and vulnerability in specified contexts' (Gupta, Parkhurst, Ogden, Aggleton, & Mahal, 2008, p. 766). While the implementation of these structural interventions may result in the delivery of activities or services which are targeted at individuals, what ultimately sets them apart from more traditional individual-level behavioural interventions is that they aspire to address the conditions influencing individual behaviour, rather than focus on changing behaviour itself (McLaren, McIntyre, & Kirkpatrick, 2010). Structural approaches to reducing risk and vulnerability in sex workers have included, for example, policy actions that made compulsory the use of condoms in sex work establishments in Thailand (UNAIDS, 2000a) and the Dominican Republic (Kerrigan et al., 2006). By mandating the use of condoms in all brothels, the structural change essentially ensured that sex could not be bought without the use of condoms (previously, there was a commercial disincentive for brothels and sex workers to insist on condom use, since clients could simply seek sex elsewhere), drastically increasing the frequency of condom use and (UNAIDS, 2000a) subsequently reducing the rate of HIV infections (Gupta et al., 2008). Beyond policy change, other structural interventions have taken as their aim the transformation of social norms that facilitate HIV vulnerability – the Intervention with Microfinance for AIDS and Gender Equity (IMAGE) project in South Africa is one such intervention. Designed with the goal of reducing gender-based HIV vulnerabilities (e.g. women's economic dependency on men, sexual violence and the lack of information about HIV infection and risk), the IMAGE project combined a microfinance initiative that targeted the poorest women in communities with a participatory curriculum of gender and HIV education (Pronyk et al., 2006). While the project was not found to directly impact HIV incidence, it successfully reduced levels of intimate-partner violence, improved household wellbeing, social capital and empowerment (ibid.).

1.4 False Dualisms? From vulnerability to resilience

Yet, for all the successes that this 'return to the social' inaugurated by the move towards conceptualising vulnerability in the field of HIV prevention has had in reducing HIV transmission, there is a real risk that the very dualism (i.e. between individuals and the societies they are a part) that the concept of vulnerability was developed to dismantle, ends up being reinforced instead. To get a better understanding of why this is so, it is worth turning an eye towards the special issue devoted to the concept of vulnerability published in the journal *Global Public Health* in 2011. Authored by the Social Drivers Group, a multi-disciplinary working group set up by UNAIDS in 2007 to address the state of HIV prevention, the introductory paper of this special issue defines vulnerability as (Ogden, Gupta, Fishersupc, & Warnersupd, 2011, p. S286):

> *… a sociological concept that refers to the extent to which the risk of transmission is affected by factors in the broader social and/or physical environment, which may be beyond the control of any or all individuals involved. Specifically, the concept has been used to explain why individuals fail to respond with apparent rationality (that is in ways that seem to protect their own best interests) to HIV prevention programming focused on individual risk reduction.*

Two points are noteworthy here. Firstly, as it has been discussed in the preceding section, embracing vulnerability highlights how the broader social, economic and political structures in which individuals are embedded in may affect patterns of HIV transmission and responses to the risk of HIV infection; subsequently, the exclusive focus on individual 'risk' behaviours is thereby expanded to include the social through the consideration of structural factors. As Coates and his colleagues have shown in their review of individual behaviour change interventions, while individual-level interventions have been effective in reducing 'risk' behaviours, their success is significantly improved when efforts are made also to address broader structural factors (Coates et al., 2008; see also Parkhurst, 2014). Secondly, and this is what I wish to focus on here, by locating these structural factors as '*beyond the control of any or all individuals involved'*, what essentially happens is that these individuals who are taken to constitute vulnerable populations are 'positioned as separate from the social, and although their actions and behaviours are acted on and driven by the social, they are unable to act upon it' (Kippax et al., 2013, p. 1369). Returning once again to the UNAIDS definition of vulnerability provided earlier, a similar emphasis on structural factors as being outside the control of individuals is also seen (UNAIDS, 2011, p. 30):

> *Vulnerability refers to unequal opportunities, social exclusion, unemployment, or precarious employment and other social, cultural, political, and economic factors that make a person more susceptible to HIV infection and to developing AIDS. The factors underlying vulnerability may reduce*

the ability of individuals and communities to avoid HIV risk and may be outside the control of individuals.

Hence, even though the concept of vulnerability has been useful for HIV prevention efforts to get a better grasp on the crucial role that social structures play in shaping both HIV transmission patterns and responses to HIV infection, it remains ultimately inadequate because it is unidirectional in its consideration of the relationship between individuals and the societies they inhabit. Examining only the manner in which social structures affect individuals, but not vice versa, the concept of vulnerability includes the social at the cost of neglecting individual agency. If previously the problem with approaching HIV prevention from an individualistic paradigm can be traced to the fact that priority is given to the individual over the context in which she lives in, then the problem here with focusing on vulnerability is that the individual and her ability to affect broader societal change is downplayed. In other words, the individual is immobilised, unable to act until the social is changed. Yet, if 'vulnerable' individuals are not able to change and challenge social norms and structures because these are conceived of as beyond their control, then they are subsequently also positioned to be passive and powerless until they have been 'enabled' by the implementation of vertical, top-down approaches for tackling the social. By expressing the social in the form of problematic social structures, or more specifically, social barriers, the concept of vulnerability thus reinterprets and reproduces the previously discussed criticism of the limits of conceptualising the individual as a rational and self-efficacious agent (Kippax & Stephenson, 2016). Whereas previously it was the lack of information that was to be blamed, now, it is the fact that if only the social structures were 'right', then HIV prevention interventions would be able to target individuals effectively and all involved would also act in a manner to maximise longevity (Auerbach, Parkhurst, & Cáceres, 2011). Hence, even though the concept of vulnerability goes some ways in 'bringing the social back' into the picture, it does not counter ways of conceptualising vulnerability that inadvertently reinstate a false dualism between individuals and the societies that they are a part of.

There is however, another dimension to structural interventions that may help to address the problems with the concept of vulnerability. Reflecting on structural approaches to HIV prevention and how they create conditions in which individuals are enabled to make healthy choices, Ogden et al. make the point that while these structural interventions work to reduce vulnerability on one hand, on the other, they also 'foster resilience at the individual level; at the collective level they support the development of AIDS-competent communities' (2011, p. S287). Here, resilience is defined as being the result of the 'dynamic interplay between individual agency and AIDS-competent communities' (ibid., p.S287) and as 'achieved when individuals possess the ability to resist HIV' (Parkhurst, 2014, p. 3); similarly, Campbell argues that the creation of AIDS-competent communities can be facilitated through 'programmes and processes that serve to buffer or ameliorate the impacts of social inequalities on people's health' (C. Campbell, 2010, p. 21; C.

Campbell, Nair, & Maimane, 2007). In other words, while structural interventions may indeed work to reduce vulnerability (as seen in policy actions that made compulsory the use of condoms in sex work establishments), they may also serve to facilitate the development of resilient individuals and AIDS-competent communities (as seen in the IMAGE project's participatory curriculum of gender and HIV education). Unlike vulnerability which connotes passivity, resilience focuses on how individuals and communities are active in responding to the threat of HIV, creating solutions to everyday problems they might face when trying to prevent HIV infection. In this manner, even though vulnerability is acknowledged in the form of broader structural factors that may predispose one to increased risk of HIV infection, it does not work to incapacitate and render the individual incapable of action, because resilient individuals act to resist HIV in their own way (Kippax et al., 2013). Subsequently, the move towards resilience has much affinity with a strengths-based approach for HIV prevention, as opposed to the deficit-based approach invoked by a focus on vulnerability (Baum, 2008).

Despite the benefits of a strengths-based approach for HIV prevention commissioned by this turn towards resilience, there is a real risk that even as it usefully situates individuals and communities as active when faced with the threat of HIV, the concept of resilience also simultaneously delimits what might count as 'resilience'. The crux of the issue lies in the fact that what is recognised as resilience, or as an appropriate response to the problem of HIV/AIDS is already to some extent pre-defined by Public Health. Kippax and Stephenson make a similar point, pointing out that from this perspective, certain actions such as those taken by HIV-positive trial participants in the 1980s, who undermined the randomised controlled trials of drug efficacy 'by testing the drugs to identify whether they were in the experimental or placebo arms and by sharing drugs within non-trial participants who could not access the drugs any other way' may not be seen as 'resilience' (Kippax & Stephenson, 2016, p. 104). The concept of resilience, while useful, does nothing to 'interrupt hasty interpretations of people's unexpected or undesired actions (from the perspective of HIV-prevention practitioners or researchers)' to be the product of either a lack of agency or knowledge (ibid.). Thus, an action is deemed to be 'resilience' only to the extent to which it stays within the parameters of HIV prevention as it has been conceptualised and practiced to date – it must not question the limits within which HIV prevention operates. Further questions about the utility of this turn to resilience remain: how exactly is it that AIDS-competent communities become competent; how exactly is it that individuals become resilient; and how exactly are AIDS-competent communities produced by or produce resilient individuals? Even though the concept of resilience positions individuals as being active in responding to the threat of HIV, no attention is paid to how individuals actively (re)make social norms, values, networks and other cultural, economic and political institutions simultaneously as they resist HIV in their everyday lives. Unlike the concept of vulnerability, resilience does not downplay the individual's ability to affect broader societal change and in fact, places an emphasis on it. However, even though individual agency is now acknowledged, for so long as the ways in which people's actions also contribute to

shifts and changes in the very structures that impinge on them in the first place is not opened up for interrogation, resilience is similar to vulnerability in that they both do not take us far enough in appreciating how the individual and the social are always constitutively entangled. As Bourgois and Scheper-Hughes remind us, while it is certainly true that 'everyday life is shaped by the historical processes and contemporary politics of global political economy' (2004, p. 318), the manner in which these constraints act on individuals are themselves also shaped 'by local cultures in which people actively participate to make, re-make and re-work social norms and practices' (Kippax & Stephenson, 2016, p. 105). Stated simply, it is not enough to identify vulnerabilities/structural barriers and aim to foster resilience in individuals; these structures themselves are changed when individuals act, and sociological analysis of the processes involved in bringing about such changes is therefore of paramount importance if this false dichotomy between the social and the individual is to be remedied.

As the foregoing makes clear, both the individualistic approach to HIV prevention and a focus on vulnerability/resilience reproduce, albeit in different forms, a dualism between the social and the individual. The challenge thus for all those involved in HIV prevention is, as Kippax and Stephenson opine, to 'find ways to acknowledge, think about and work on social structures, factors or drivers without closing down the possibility of thinking about how groups of people are involved in changing social norms and social practices' (ibid., p.102). Stated otherwise, what these structuralist debates make clear is that an important problem with which the field of HIV prevention is grappling with at present relates to *how it might be possible to resist the bifurcation of HIV prevention into the social on one hand, and the individual on the other*?

Motivated by the insight that although it is unlikely for individuals to effect social change by their lone selves, social transformation can and indeed does happen when individuals come together, it has been argued that the notion of agency needs to be reworked from one that is based on the individual, to one that also includes collective agency – a form of agency that arises out of the social relations between people (ibid.). From this perspective, the social is conceived not as a simple aggregate of individual agency, but instead, arises as the product of the relations *between* individuals (i.e. in social relations). Social norms and cultural expectations exist not as macro-level structures beyond the reach of ordinary people, but operate instead on the meso-level, constantly (re)produced and (re)negotiated by individuals when they interact with one another as members of their respective groups. Working from this middle ground between the two poles of 'social structure' and 'individual', Kippax and Stephenson focus on what they term the 'social practices of communities' (ibid.). As discussed in the previous section, behaviour is always itself social. The term 'social practices' is meant to convey exactly this: individual behaviours are always also socially produced, patterned and organised by culture (Auerbach et al., 2011). One does not simply engage in behaviours such as sexual intercourse (anal and vaginal), oral-anal sex or oral-genital sex; rather,

when two or more individuals come together, they make love, they sell/buy sex, they have a 'one-night stand', they partake in an orgy and the list goes on. Embedded within a specific time, place and socio-cultural context, individuals engaging in a seemingly limited number of sexual behaviours (anal/vaginal sexual intercourse, oral-anal sex and oral-genital sex) thus go on as Kippax and Stephenson (2016) argue, to produce a myriad of different sexual practices. For example, anal intercourse takes on different meanings depending on whether it is practiced between gay, lesbian and heterosexual individuals; sexual practices also differ across locations and is different in Germany as compared to Botswana; and it is different depending on whether it is enacted in the context of mutual consent or forcefully imposed on another individual as is the case with rape. Even though we may speak about these practices in the abstract, these different sexual practices are enabled, shaped and constrained by protocols, expectations and norms unique to the context, space and time in which these sexual encounters arise (Race, 2015). The point here then is this: as social beings, individuals typically act as members of their communities (Harre, 1979) and consequently, the kind of sexual practices that are taken up by individuals are dependent on the milieu in which they inhabit and are oriented 'outwards' in the sense that how one acts also needs to make sense to others in the community and not just themselves – hence, the term 'social practices of communities'. Because social practices are the product of the relations between people, for HIV prevention efforts to effectively encourage safer sex practices, it is vital that such efforts focus on how it is in 'these relations that people's actions acquire meaning and norms are appropriated and sustained' (Kippax & Stephenson, 2016, p. 109). For example, Weeks details how in the 1980s and early 1990s (the early stages of the HIV/AIDS epidemic), casual sexual encounters came to be understood in terms of 'new forms of mutual responsibility and autonomy' and condoms were adopted by gay men as a means of expressing their care for one another and for the broader community (1998, p. 44). In other words, the transformation of sexual and social relations between gay men was also accompanied by shifting expectations with regards to condom use in gay communities (Kippax et al., 2013). With condom use becoming built into the everyday patterning of the lives of gay men and establishing itself as the new social norm of care within gay communities, it subsequently became more difficult for gay men to engage in unprotected sexual intercourse (Kippax & Stephenson, 2016). This integration of safer sex practices into the shifting social relations connecting gay men thus constitute what Low-Beer and Stoneburner call a 'social vaccine' (2004) and illustrate how the production of new social norms around safer sex can come about when individuals come together as a community and act in concert to prevent HIV. Research among injecting drug users, sex workers and Aboriginal Australians in Australia (Aggleton & Kippax, 2014), injecting drug users (Des Jarlais et al., 1995) and gay men (Valdiserri, 2013) in America and young people, workers and women in Brazil (Kippax et al., 2013; Paiva, 2003) and in Switzerland (Dubois-Arber, Jeannin, & Spencer, 1999; Somaini, 2012) all similarly illustrate how safer sex practices may develop when the social practices of a community/relations between individuals in that community, changes. Put simply, while it is certainly the case that individuals can and do act in ways that renegotiate and resist HIV risk, safer sex practices are

better sustained when the social values and norms of the communities and networks within which they are embedded, also changes. There is the need as Bailey argues, for a dialogue between *intra-ventions*, understood as the 'HIV/AIDS prevention activities that are conducted and sustained through practices and processes within at-risk communities themselves' (2009, p. 255) and the vertical, top-down HIV prevention *interventions* that come from the 'outside'.

Working from this meso-level, what is clear is that it is not only simplistic, but also inadequate to conceive of social structures as deterministically constraining individual action; nor is it the case that individuals are (un)able to ignore, negotiate and change social structures on their own. Rather, social structures do impinge on individuals, and individuals act to transform these social structures via their practices. Subsequently, these social structures endure or change to the 'extent that they can respond to and accommodate the demands arising out of the connections between people' (Kippax & Stephenson, 2016, p. 123). Relations between individuals constitute the glue that bonds them together. If HIV infection/transmission is a social affair as it has been argued thus far, then it is this 'connectedness' that is key to understanding not only how HIV risk is produced, but also how effective HIV prevention strategies may be devised. Resilience is achieved when individuals possess the ability to resist HIV; but as the history of the development of the safe sex ethic among gay men reminds us, it should not be forgotten that gay men's capacity to resist HIV lies exactly in this 'connectedness' to other gay men, who act as they did to shape prevailing social norms around safer sex practices (Kippax et al., 2013). As this brief incursion into the history of approaches to HIV prevention should make clear, rather than simply concern itself with fostering resilience at the individual level, effective HIV prevention must instead focus on how people relate to each other, the norms that influence such relations and the social practices that constitute these norms – all of which are produced collectively by communities working together (Williams, 2003).

The relational view espoused in the notion of 'collective agency' detailed above is no doubt useful in highlighting the importance of understanding the social values and norms of the communities and networks within which individuals are embedded in for the purpose of sustaining safer sex practice. Yet, if we consider for a moment that the manner in which individuals relate to one another is fundamentally entangled with the way in which each of them also relate to HIV, then we can begin to see how insofar as this call to take collective agency seriously is focused only on relations between humans, it remains somewhat inadequate. The question of how humans relate to one another can never be considered in silo from the question of how they also relate to microbes. Relatedly, given that estrangement is often the default and primary mode of human relations with microbes, it will be important to investigate in the following chapter some of the norms and associated practices that shape and reify human-microbial relations in this antagonistic register. This will be done by detailing some key concepts related to body, disease and infection that form the foundation of what I take to be an immunological mode of doing HIV

prevention. This brief excursion into the history of immunology will then serve as the backdrop from which I will be able to examine the flourishing of a more ecological, post-Pasteurian way of relating to microbes (chapter 3) and subsequently, the proliferation of more-than-antagonistic relations with HIV (chapters 4 and 5).

2. Theoretical scaffolding

Thus far, I have illustrated how the biomedicalisation of HIV/AIDS is underpinned by an emphasis on the individual as the natural unit of analysis. This 'possessive individualism' that the biomedical paradigm is intimately affiliated with takes as given that individuals are essentially the proprietors of their own persons and capacities (Macpherson, 1962), and as I have illustrated, is to a large extent responsible for the false dichotomy between the biological individual and the social community in approaches to HIV prevention. If in the previous chapter I illustrated how HIV social science research is currently grappling with the important task of resisting the bifurcation of HIV prevention into the social on one hand, and the individual on the other, in this chapter, I want to explore another distinct but related avenue in which HIV social science research might venture into as a means of making some headway into the task of thinking about the problem of HIV from a posthuman perspective: namely, the issue of how the individual comes to be bifurcated into the human on one hand and more-than-human on the other. My starting point will be the previously discussed notion of 'possessive individualism'. By tracing the emergence of the concept of biological immunity through the 19th century, I will provide an account of how it is that the individual comes to be regarded as a property, a thing – or to put it more specifically, as embodied persons in possession of ourselves, this property-in-ourselves. As it will become apparent, the notion of an atomistic body/self that dominates the field of HIV prevention owes much to immunological assumptions about physiology, bodies (human and microbial) and the kind of relations proper to self/non-self.

2.1 Immunity-as-defence, Immunitas and Communitas

Pointing out that the 'equivalence between 'being a person' and 'having a body' has long since passed over into our daily lives', Cohen argues that the notion of 'possessive individualism' only works because of a prior conceptual leap that imagines the body as circumscribed within a well-defined perimeter (2008a, p. 104). He writes (ibid., p. 107):

> *… in order for property to exist at all, it must be defined. The unbounded or the infinite cannot be owned as such. The basic difference between an expanse of the earth's surface and a 'piece of property' inheres in the imaginary (and yet oh so material) work that first delimits the 'piece' as a coherent, separable part and then distinguishes this piece from all others by assigning its immanent potential to an owner. The boundary that defines land as property does not emerge from the land itself. Rather, it enters the world through a human decision (in the etymological sense of a violent cutting or rending) that renders the particularity of this part of the planet 'ownable', or indeed owned, by conceptually dividing it – both spatially and temporally – from the continuous unfoldings and enfoldings of planetary processes.*

Hence, the body must first be marked out and distinguished from what it is not if it is to be possessed at all. Conventionally speaking, the epidermal frontiers of our bodies mark the physical boundaries of what is human and non-human, self and non-self and what is inside from the outside. The human skin, as philosopher Arthur Bentley points out, 'is the one authentic criterion of the universe which philosophers recognise when they appraise knowledge' and its importance is such that 'if philosophers cease thus crudely to employ it, all their issues of epistemology will vanish' (1941, p. 1). There is, of course, as Gayatri Spivak (1989) notes, no possible outline of the body as such – and here, Spivak is alluding to and acknowledging that the body must be understood as both the product of and the producer of complex systematicities. While I will examine this issue of corporeal porosity in chapter 3, it suffices to note for now that our bodies are often conceptualised as a self-enclosed thing, separate and autonomous from the world around us. We thus inhabit our bodies in what Teresa Brennan (2004) has called affective self-containment, with all else beyond taken as foreign. We are owners of our own body, or property-in-ourselves. The epidermal frontiers of our bodies serve to mark out the domain within which we are free to exercise our agency – and the freedom to exercise this agency is crucial here for, without it, what is distinctive about 'owning' a property is subsequently lost. In other words, property ownership 'constitutes a form of dominion and [this] dominion manifests a force or power that resists and repels all opposing forces or powers within its domain' (Cohen, 2008a, p. 107). Hence, if 'possessive individualism' has it that we are embodied persons in possession of ourselves, then relatedly, it must also be the case that any challenges to the 'boundedness' of our bodies be repelled at all costs since the exclusivity of property ownership forecloses the possibility of coexistence with 'others'. Stated more simply, what underpins a working notion of 'possessive individualism' is the assumption that a body can be marked out and that its bodily boundaries are defendable. Perhaps self-evident to the extent that it seems almost tautological to state, defence in the context of the biological body is thought about immunologically; even if one does not have a thorough understanding of immunology, we generally presume and expect our immune system to defend us against a hostile 'outside'. The embodied resistive force described here – one that repels all opposing forces to ensure the maintenance of bodily integrity – manifests in what Cohen terms the 'immunity-as-defence' paradigm (2009). As Blackman summarises, this paradigm 'sees immunity as primarily a defensive process which allows bodies to maintain borders and boundaries between the inside and outside and the self and non-self through waging war on what are typically framed as invaders (whether bacteria, fungi, viruses, etc.)' (2010, p. 2). More generally however, Theresa Morris argues that a paradigm (2013, pp. 22–23):

> *… forms a perimeter for possible experimentation — being a collective of views and beliefs about what might be true. As a model for what is knowable about things, it both permits exploration and delimits it. It is best described as a method for isolating problems for experimentation in the hopes*

> *of gathering data that might create a better explanation for certain phenomena. Its capacity to limit or enlarge our vision about the world should not be overlooked.*

In other words, paradigms are simultaneously enabling and constraining; they facilitate thinking, but 'by that action, [also] necessarily constrain it' (Mylius, 2018, p. 163). As it shall become clear, the rest of the thesis is guided by an interest in exploring and making clear some of the conceptual, ethical and pragmatic ways in which the 'immunity-as-defence' paradigm enables, but also constrains the ways we know, experiment and live with microbial others.

Lest we make the mistake of taking the biological valence of immunity described above as 'self-evident', it is important to note as several thinkers have, that the conception of biological immunity did not in fact exist until the end of the 19th century (Cohen, 2009; Esposito, 2011). Prior to that, immunity's meanings were primarily legal and political (Cohen, 2003, p. 151):

> *For most of the past two millennia—until about a hundred years ago when its biological valence coalesced—immunity referred almost exclusively to privileges and entitlements conferred on individuals or collectivities that exempt them from political obligations and responsibilities. Immunity from prosecution, military service, taxation, legal culpability, or financial indemnity designates a condition in which supposedly "universal" socio-political demands are publicly set aside for particular subjects or groups of subjects.*

This exemption from political obligations that Cohen refers to in his analysis of the term immunity has much resonance with Esposito's more philosophically inflected dissection of the relationship between *immunitas/communitas*. Esposito's starting point is the etymological analysis of *communitas*, through which he comes to focus on the originary Latin term *munus*, which is also shared with *immunitas*. In Esposito's philosophy of *communitas*, it is this *munus* which binds members of a community together. As Lorna Weir puts it, this *munus*, or gift, 'consists of the single obligation to give, a logic of donors without receivers' (2013, p. 155). Subsequently, this unidirectional obligation to give without receiving then establishes a being-in-common, or *communitas*, where the 'subjects of community are united by an 'obligation' in the sense that we say, 'I owe you something,' but not, 'you owe me something'' (Esposito & Campbell, 2010, p. 6). In other words, unlike thinkers who have endorsed a proprietary conception of community which understands 'community in terms of the distinction between that which is held in common and that which is proper to those individuals who comprise the community' (Tierney, 2016, p. 56), for Esposito, what a focus on the *munus*/gift reveals is that to belong to a community is to 'give up one's most precious substance, namely, one's individual identity, in a process of gradual opening from self to the other' (Esposito & Hanafi, 2013, p. 84). Stated differently, it is not the acquisition of some status, property

or thing (land, ethnicity, etcetera) that ties members of a community together, but rather, it is the asymmetrical obligation to give without the expectation of return that generates *communitas* (Campbell, 2006). Based on this reading of *communitas*, Esposito then goes on to state that (2013, p. 84):

> *If communitas is what binds its members in a commitment of giving from one to the other, immunitas, by contrast, is what unburdens from this burden, what exonerates from this responsibility.*

The relation Esposito's philosophy of *communitas* has with subjectivity now becomes clear. If the *munus*/gift binds everyone in a community to give themselves away, then this process of continuous expropriation subsequently means that a subject's identity is always open to revision (Weir, 2013). *Communitas* thus insists on remaining open to that which is outside itself and breaks down the barriers of individual identity, while immunity is 'the way to rebuild them, in defensive and offensive forms, against any external element that threatens it' (Esposito & Hanafi, 2013, p. 85). It is, as Davis et al. beautifully state, 'one's immunity is in ontological relation with one's community and vice versa' (2016, p. 135). Constantly in flux, individual identity achieves some semblance of stability through *immunitas*, through 'which the individual is defended from the "expropriative effects" of community, protecting the one who carries it from the risk of contact with those who do not' (Campbell, 2006, p. 4). From this perspective, not only is immunity coterminous with community, but the former in negating the latter, actually presupposes it. Relatedly, for Esposito then, community is 'the transcendental condition of our existence, given that we have always existed in common' (Esposito & Welch, 2013, p. 14).

I will have more to say about the relevance of Esposito's philosophy of *communitas* later on, but for now, it will be useful to examine how juridico-political immunity – which up until the end of the 19th century was the predominant meaning of the term 'immunity' – found its way for use in a biological context. The founding concepts of immunology are often traced to developments in bacteriology and more specifically, Louis Pasteur's experiments on anthrax, rabies and fermentation which demonstrated not only the existence of micro-organisms, but also that these micro-organisms had a role to play in infectious diseases (Golub & Green, 1991; Silverstein, 1989). His work established a conceptual and ontological distinction between host bodies and microbes and it is this infective relationship between these two discrete entities that undergirds much research in the field of immunology. Pasteur's bacteriological insights were aided by the work of his contemporary, Robert Koch, who developed methods to isolate and grow microbes via cultures in the lab, leading to the creation of the Koch Postulates, four criteria used to determine a causative relationship between a microbe and a disease (Silverstein, 1991). Propelled into both scientific and public awareness via the laboratories of Pasteur and Koch, the germ theory of disease subsequently became widely accepted. This theory advances a vision of the world as teeming with microorganisms that

are directly responsible for disease, and is often taken to be bacteriology's most important contribution to science. It should be noted however, that even though the germ theory of disease is often referred to now in the singular, it may be more appropriate to speak of *germ theories of disease* rather than a single germ theory since Worboys's historical study of the development of disease theories in Britain convincingly illustrates that there 'was never closure on a single bacterial model for germs' (2000, p. 3) in the 19th century (see also Tomes & Warner, 1997). Yet despite differences across each of these germ theories of disease, what they were all united by was a commitment to the 'etiological standpoint', or the 'belief that diseases are best controlled and understood by means of causes' (Carter, 2003, p. 1). As Carter astutely points out, this etiological perspective is a legacy that we have inherited up till today: its durability as a means of understanding diseases can be seen in the almost automatic connection one makes between 'disease' and 'cause' (ibid.). By conceptualising disease in terms of a causal relation between the presence of microbes and the experience of infection, harm or damage by the body, the etiological position presumes the prior existence of two separate bodies (human and non-human) which then enter into an infective relation with each other. Thus, implicit in 'the idea that the origin of many diseases lay in the pathogenic actions of certain micro-organisms when introduced into the body' (Worboys, 2000, p. 3) is also the assumption that relata have priority over relations. Host/microbe, self/non-self and inside/outside were thus taken as materially and ontologically distinct.

Commenting on this perceived need to constantly intervene in human-microbial relations ever since the 'discovery' of the ubiquitous microbe, Latour writes in his brilliant book, *The Pasteurisation of France* (1988, p. 39):

> *After the Pasteurians have invaded surgery, only then will the surgeon be alone with his patient. After we have found a method of pasteurizing beer, then the brewer will be able to have nothing but economic relations with his customers. After we have sterilized milk by spreading throughout all farms methods of pasteurization, then we will be able to feed our infant in a pure loving relationship.*

What the germ theory of disease effectively does then, is to redefine social relations between humans everywhere and at any time as always being mediated – or perhaps more aptly put, 'tainted' – by microbes. Yet, for all the explicative prowess that germ theory wielded over disease aetiologies, further questions remained: *if microbes are able to cause diseases and are omnipresent, why are we not sick all the time? In addition, how is it that only some of us fall ill, while others remain healthy even if we have all been exposed to a pathogen?* Thus, whether explicitly or implicitly, germ theories of disease must also include 'ideas about the interactions between germs and bodies' (Worboys, 2000, p. 281). As some scholars have highlighted (Cohen, 2009; Moulin, 1991), Pasteur's research was driven by his sole and exclusive interest in

the microbe. This 'fetishization' of the microbe as the causal agent of a disease resulted in the bracketing of 'how infected organisms themselves enter into complex ecological interactions with microscopic beings' (Cohen, 2009, p. 254). Because Pasteur's understanding of disease processes was such that only microbes had agency, on his account, the host body served only as the uncontaminated vessel (as opposed to an active participant in the manifestation of disease) through which microbial activity could be studied. From an ecological standpoint, this means that although disease was the result of the interaction of two separate entities (human and non-human), this interaction was unidirectional: it was only the microbe that would act on the host organism, and not the other way around. Bodies are capable of only reacting (instead of responding) to external microbial provocation. As Latour notes (1988, p. 103):

> *The internal machinery of the body was of less interest to [the Pasteurian] than to a physiologist, but he was able to use it to understand the dazzling progress of the microbe in its economy.*

By discounting the vital processes of the infected organism, the host organism thus became conceptualised as a passive, inert space – and it was in this space that the agential microbe would act to cause disease. Two points follow from this perspective: Firstly, prior to an encounter with a pathogenic microbe, the body is naturally free of disease; secondly, because this body is passive and is always under the threat of being acted upon by pathogenic microbes, it is thus also a body that is in need of protection. The picture of pathogenesis that subsequently followed from this understanding of disease processes is therefore one that excludes the possibility of an active immunological response from the host organism. As Cohen rightly points out (1991, p. 198):

> *Even at the time of his greatest triumphs ... there were indications that there might be difficulties with asserting the uncontested validity of Pasteur's analysis: there was neither an account of how infected organisms participate in disease processes, nor an understanding of how afflicted organisms survive an infectious illness, nor a way of explaining the enduring resistance to disease that inoculated, or recuperated, subjects maintained.*

These gaps in knowledge would come to be filled by the work of Russian zoologist Metchnikoff, who argued that the process of infectious disease was an interspecies struggle between 'invading' pathogenic microbes and the infected organisms. While Pasteur focused on the microbe and treated infected organisms as mere mediums for bacterial growth, as a zoologist, Metchnikoff was interested instead in the life processes of organisms infected by pathogens. Based on his experimentation on starfish larvae with rose thorns from his garden, Metchnikoff observed that white blood cells would gather at the site of inflammation where the thorns were implanted. While inflammation was commonly thought of in Metchnikoff's time as injurious (i.e. as a harmful contributor to the disease process), Metchnikoff's phagocytic theory suggested instead

that inflammation is a protective process through which the body was trying to defend itself from bacterial invasion (Silverstein, 1991). He consequently hypothesised that this could be the process through which bacteria were attacked and eliminated by white blood cells – he named this organismic form of self-defence, immunity (Cohen, 2003). If Pasteur had it that pathogenesis is the bacterial invasion of an organism, Metchnikoff's valuable insight here was that such an invasion could not simply be a one-sided struggle – or else we would all just be collateral damage – and the infected organism must be in some way able to *actively* mount its own 'defence' (Cohen, 2017). Metchnikoff's theory thus served as a corrective to Pasteur's understanding of the host body as passive and provided the much-needed answers to contradictions within the germ theory of disease that had hitherto not been addressed adequately. By aligning immunity with the mechanism of self-defence, the biological notion of immunity as 'immunity-as-defence' was thus born. The conceptualisation and management of disease now moved to the *milieu interieur* (C. Bernard, Henderson, & Greene, 2003), where the 'inside' of the human body would serve as *le champs de bataille* (i.e. field of battle) between human and microbes (Metchnikoff, 1887, p. 328). The 'sense in which one's body inside is one's personal possession' (M. Davis et al., 2016, p. 137) would subsequently also be deepened by this incessant human-microbial war that took place within oneself.

In emphasising the active role that white blood cells play in identifying and removing 'foreign' entities in the body, immunity as 'active defence mechanism' becomes figured as the expression of a 'modern' biological self with a recognisable and defendable frontier (Tauber & Chernyak, 1991). The relationship between this 'modern body' and 'immunity-as-defence' was effectively one where each mirrored the other, acting as the *raison d'être* for each other's existence (Cohen, 2009, p. 14):

> *Immunity takes on the responsibility for maintaining the integrity of the body, while the body's putative singularity creates a constitutive vulnerability against which immunity must relentlessly defend it.*

The notion of a defended immunological body thus grounds the idea of a self-defence mechanism proper to that body ('immunity-as-defence') and vice versa.

2.2 Doing human-HIV relations immunologically

In the previous section, I showed how in immunological thought, bodies (human and microbe) are conceptualised as ontologically distinct entities. In figuring disease as the product of a causal interaction between a microbe and a host organism, the biological identities of both the host organism and the micro-organism are given from the outset. In other words, consequence (i.e. disease) is already determined by the identities of all the entities involved: host organisms are disease-free bodies that experience disease

upon encounter with harmful invading micro-organisms. Immunology, as Moulin opines, 'has evolved to provide an encompassing view of the body which subordinates all physiological events to a common purpose: the defense and representation of the self' (2002, p. 385). On this, historian and philosopher of science, Alfred Tauber is in agreement, stating that 'the general view is that immunology, since its very beginnings during the last 25 years of the 19th century … [has been] committed to discerning those mechanisms by which the "self" discriminates host elements from the foreign' (1999, p. 460). Subsequently, in this section, what I am interested in examining is the traffic between immunological science and ethics; or put differently, how an immunological understanding of bodies and human-microbial interactions shapes the manner in which we come to act in this world. What happens when we insist on the human body as a singularity that is both exposed to and opposed to a relentlessly pathogenic 'outside'? As we shall see, in depicting the world as thoroughly inhabited by deadly microbes from which we needed to defend ourselves, the 'immunity-as-defence' paradigm radically reconfigures not only the way in which 'we imagine our bodies as living organisms but also how we imagine what it means to be an organism living among other organisms and what it means to be a human living among other humans' (Cohen, 2009, p. 4).

Because HIV uses the human body as a site for self-multiplication, what HIV does is 'colonise the human body and human subjectivity, making them amalgams of the microbial and the human' (Waldby, 2003, p. 18). As the locus of human-viral hybridity, what the figure of the HIV-positive individual reveals therefore is how the immunological distinction between human and virus on the cellular level migrates to the social level, mapping itself onto the HIV-negative individual and the HIV-positive individual respectively. Immunological distinctions thus become social distinctions and it is in this manner that Public Health, a politically-oriented science that organises defence on the collective level by distributing responsibilities between individuals and groups becomes intimately related to immunology, a biologically-oriented science concerned with the 'ontogeny and phylogeny of bodily defences' (Moulin, 2002, p. 386); such immunological distinctions can also be linked to a variety of other social distinctions, such as the exoticisation of the 'other' in colonial encounters (W. Anderson, 1996) or the gendered ideal of the male body (Martin, 1990). David Napier, in his book, *The Age of Immunology*, makes a similar point, stating that 'immunological ideas now provide the primary conceptual frame-work in which human relations take place in the contemporary world' (2003, p. 3). Haraway too claims that immunological thought draws a map 'to guide recognition and misrecognition of self and other in the dialetics of Western biopolitics' and that the 'immune system is a plan for meaningful action to construct and maintain the boundaries for what may count as self and other in the crucial realms of the normal and the pathological' (1991, p. 204). In her seminal work, *AIDS and the Body Politic,* Catherine Waldby points precisely to how such immunological ideas dominate the field of HIV prevention, noting that the 'normative ideal of health which circulates implicitly in AIDS discourse … can be summarised as a seamless, impermeable, individuated body, a body inimical to infectious processes' (2003, p. 37). Alongside these thinkers then, what might be suggested thus

is that the immunological imperative to police corporeal boundaries is thoroughly entangled with the way we conduct human-HIV relations. As the 'I' in both HIV and AIDS make clear, our entire relationship with the virus since its emergence in 1983 has been one that is defined by immunological ideas through and through. It is no surprise then that if there can be said to be a general problem of HIV – that is, the question of how we should co-exist with HIV – that this problem becomes configured as an immunological problem of keeping organism and micro-organism apart. Enforcing and policing the corporeal boundaries between the human and non-human thus becomes the *raison d'être* of HIV prevention, and of any public health programming with respect to infectious diseases.

What follows from this immunological manner of doing human-HIV relations then is that in addition to their negative immunological evaluation, 'foreign' entities such as HIV will also come to acquire a negative social evaluation. Needless to say, the migration of this negative evaluation of HIV from immunology into our social worlds is not merely a conceptual point – it is also grounded in the suffering, lived experience and actions that accompanies HIV infection. Or to steal a phrase from Rosengarten and Murphy, the 'negativity' of HIV might be said to be 'based on the verity of its consequences when enjoined with the work of ART' (2019, pp. 4–5). My aim here then, is not to contest the 'negativity' of HIV; rather it is to urge caution around thinking with an overly static image of the human and virus. I will have more to say about the inadequacy of this *post facto* axiology (where value comes only after fact) and the bifurcation of nature (Whitehead, 1920) that accompanies it once the relational ontology that this thesis adopts has been laid out at the end of this chapter, but it will be useful first to illustrate in greater detail some of the ways in which the 'negativity' of HIV impinges on the way human-HIV relations are currently done.

A survey of efforts in the HIV field reveals that the negative value of HIV infection is often taken as a given – it is assumed that avoiding HIV infection and the maintenance of boundaries between human and virus is a self-evident goal (Kowalewski, Henson, & Longshore, 1997). We see this for example, in the previously discussed UNAIDS 90-90-90 targets which, as I discussed earlier, act as a central pillar around which the field of HIV prevention has rallied around to mobilise resources in a bid to 'end AIDS'. Right from the outset, it is already possible to note how the phrase 'ending AIDS' already pivots around the reification of HIV-as-enemy, but I want to examine the concepts of 'eradication' and 'elimination', both of which have been used historically to control epidemics and infectious diseases to get a clearer picture of what 'ending AIDS' actually means. The eradication of disease can be understood as the 'worldwide interruption of transmission, whereas elimination means interruption of transmission in a limited geographic area' (Hopkins, 2013, p. 54). In other words, eradication is the permanent reduction to zero of any new cases of a disease globally, while elimination is the reduction to zero of any new cases of a disease within a specific country or region (Dubé et al., 2018). It is important to note however, that the term 'elimination' has also been used by public health officials to promote programmes which aim at the reduction of new cases of a

disease to an 'acceptable' level, but what is 'acceptable' may not necessarily always be zero (M. Miller, Barrett, & Henderson, 2006). Even more confusing is also how similar the meanings of elimination and eradication are when employed in everyday use, so much so that they are often used interchangeably. For example, the 1993 edition of the *New Shorter Oxford English Dictionary* defines eliminate as to 'remove, get rid of, do away with, cause to exist no longer', a definition which is virtually indistinguishable from that of eradicate which is defined as to 'pull up or out by the roots, uproot, remove or destroy completely, extirpate, get rid of'. The term 'eliminate' is thus pregnant with multiple meanings both when used in the everyday and in the context of disease control, which may subsequently lead to ambiguity and easy misunderstanding.

It is perhaps an awareness of the sort of ambiguity I have outlined above that the UNAIDS Science Panel convened a meeting from the 4-6 October 2017 in Switzerland to build consensus around what is meant by 'epidemic control'. It is to the report produced as part of this meeting that I turn to as a next step towards understanding what 'ending AIDS' means. Proceeding in the first instance by defining what is meant by 'eradication', the report's definition is largely congruous with the definition I have provided earlier. Regarding the elimination of HIV however, a distinction was made in the report between 'elimination as a public health problem' and 'elimination of transmission' (UNAIDS, 2017, p. 4). For UNAIDS,

- Elimination as a public health problem is the reduction of incidence and morbidity below a specific globally defined level; while

- Elimination of transmission is the complete cessation of incidence in a geographically defined area.

Comparing 'ending AIDS' to climbing Mount Everest, the report takes both the elimination of HIV as a public health problem and the elimination of HIV transmission to be but 'critical basecamps along the route' to the summit (ibid., p.16). Stating plainly that the 'eradication of HIV remains an ultimate long-term goal' even though the 'achievement of the goal of elimination is more feasible in the near term', one possible reading of what UNAIDS means when the phrase 'ending AIDS' is invoked is the utter and complete extirpation of HIV (ibid., p.4). Regardless of how one may choose to construe what 'ending AIDS' might mean however (i.e. as eradication or elimination), what is noteworthy here is that at their core, both concepts imply a concern with ensuring that the human and microbial 'other' are kept separate. Here, even though the concepts of elimination and eradication are couched in epidemiological language and appear to concern itself with disease incidence for example, it is useful to remember that from the point of view of the paradigm of immunity-as-defence, because infection occurs when the human corporeal boundary is crossed by HIV, a concern with reducing disease incidence is thus also a concern with ensuring human-viral hybridity does not occur. Seen in this way, the difference between viral eradication and elimination is thus

not one of kind, but of degrees – the former, in demanding the permanent reduction to zero of any new cases of a disease globally is far more 'severe' in the extent of its demands, both in terms of location and duration. Regardless of what 'ending AIDS' might mean then, both viral eradication and elimination are committed to HIV's 'negativity'. This commitment to the pathogen's 'negativity' is not unique to HIV however and Lorimer is right when he states that global health programmes are in general 'united by an antimicrobial concern with the control and eradication of infectious diseases' (2017, p. 2).

Consider also the manner in which HIV is referred to in the Durban Declaration (2000):

> *To tackle the disease everyone must first understand that HIV is the enemy.*

While the signers of the Durban Declaration may believe that HIV is indeed the enemy, taking this for a scientific 'fact', this negative evaluation of HIV is in no way a given nor a natural facet of reality. As I have shown previously, the designation of pathogenic microbes as 'bad' owes much to Pasteur's bacteriological research and Metchnikoff's work on immunology – in other words, the ability to appoint a microbe as 'bad' is contingent on certain historical and scientific developments and is thus in no way a given. On this, Cohen is in agreement stating that (2008b, pp. 103–104):

> *… their rhetorical characterization of HIV as 'the enemy' explicitly reveals the politics deeply embedded in their putatively nonpolitical position. The language of friend/enemy in no way derives from the matter of the world; it does not describe the unfolding of natural, biochemical processes according to immutable natural laws; it does not constitute an unmediated representation of an essential physical truth; rather the trope of friend/enemy grounds the development of politics as it has unfolded in Western culture since the time of Aristotle.*

The 'trope of friend/enemy' is thus indication of the microbiopolitics at play in the Durban Declaration that construes 'AIDS in terms of a thoroughly biopolitical investment' in the 'immunity-as-defence' paradigm (ibid.).

2.3 Microbiopolitics and degrees of human-viral separation

One of the 'additional' (or perhaps intended?) effects of doing human-HIV relations in a way that insists on the strict maintenance of corporeal boundaries between human and microbes is that it also places huge restrictions and demands on the ways in which we should live. In *Drugs for Life*, Joseph Dumit (2012) argues that as a risk-reduction notion of health becomes more prominent in our lives, we begin to see our current wellness as a resource to spend to reduce those future risks, and because each risk, however small, is about

one's health or even life, almost any exchange that reduces it can seem worth it. We spend more of our free time, our expendable income, our attention and worries to reduce these risks and essentially start treating our current wellness as surplus health that can be used to increase our future health. While it might be that each case of risk reduction seems worth it, the aggregate of doing so may not, and Dumit cautions that at some point one might have to put up with a life of side effects brought about by excessive medication, for the sake of living longer. The risk-reduction notion of health that Dumit analyses here must be understood as intimately linked to advancements in medical technology. These new technologies vastly improve medical diagnostic capacities and thus facilitate the proliferation of what historian of medicine, Charles Rosenberg, has called 'proto-disease', a state one inhabits 'between risk factor and manifest illness' (2009, p. 803). As he puts it (ibid.):

> *Each diagnosis of hypertension, of elevated cholesterol, of impending glaucoma, of "prediabetes" places an individual on a kind of pathological slippery slope … It is not surprising that men and women should want to step out of that narrative, or at least alter its trajectory by making the propitiatory ritual libations or applications of Lipitor, Zocor, Xalatan, or whatever drug their physician prescribes.*

Rosenberg's term 'proto-disease' thus usefully highlights how in a risk-obsessed society, a statistical designation of increased disease risk, despite not being strictly a disease in itself, can potentially 'develop into a clinically significant health problem' (Gillespie, 2015, p. 983). The accumulative logic of surplus health that Dumit discusses is thus irrevocably entangled with the identification of 'proto-disease' states and relatedly, the pre-emptive therapies and screening we are now subject to as proto-patients.

I want to suggest here that the accumulative logic that Dumit identifies above is also at play in our dealings with HIV. Given that microbes are ubiquitous, there is always more that can be done to better secure the borders between the human body and foreign microbial others (i.e. reduce the risk of HIV infection/transmission) and this exerts a great demand, ever more encompassing in its scope, on how one should conduct him or herself. This much is clear if one considers HIV PrEP – medication used to prevent the spread of HIV in people who have not yet been exposed to the virus – and the current moral outrage surrounding its use (Beattie, 2018; Hildebrandt, 2018; Pawson & Grov, 2018; J. Turner, 2016) because of its supposed effect on decreasing condom use among men who have sex with men (MSM): it is not enough that one is currently on PrEP, one should still use a condom when engaging in anal intercourse; it is also not enough that one uses a condom when engaging in anal intercourse, a condom should also be used when engaging in oral sex as well; and the list goes on. There is much more I have to say about PrEP in what follows, but what I wish to highlight here is how short of simply abstaining from all sexual contact, there is always more that can and should be done to reduce the risk of HIV infection/transmission. If for Deleuze,

the *body-without-organs* (BwO) 'is supposed to designate all of those things that an organic body could do', 'the full set of capacities or potentialities of a body prior' (Smith, 2018, p. 107) to it being given a structure, then following Nick Fox, we might say that immunological thinking helps to territorialise the yet-to-be-determined potential of the BwO to create the *body-with-organs* (2011). In other words, immunological ideas shape the BwO in a way that gives it an identity and thus provides direction as to how our bodies should act to secure our corporeal boundaries. Yet, as Deleuze and Guattari go to lengths to emphasise, the *body-with-organs* is but one instance (among many others) of the territorialisation of the BwO (1988).

What my preliminary analysis of the moral outrage regarding HIV PrEP illustrates is that even if there is agreement that human organism and micro-organism must be kept apart, the question regarding to what extent these entities should be 'separated' is not immediately apparent – responses will differ on whether the goal is viral eradication or elimination, for example. This is a vital point that deserves consideration, since 'measuring one's distance to or from the possibility of infection' is intimately related to how one decides to live (Halberstam & Livingston, 1995, p. 15). *How much then, is enough when it comes to keeping bodies – human and viral – apart?* Questions remain regarding what *degrees of separation* are appropriate. Or as Paxson might say, there are conflicts related to the microbiopolitics of HIV. If for Foucault biopolitics describes the specific set of means through which governmental power is used to organise, regulate and control a population according to certain political and social ideologies (1978), for Paxson, 'microbiopolitics characterizes means of social regulation carried out through control of microbial life' (2012, p. 160). The immunological mode of doing human-HIV relations aspires to be *antiseptic*, but this is first and foremost because it knows that modern life is not and cannot be *aseptic*. Since microbes are ubiquitous (the impossibility of asepsis) and constantly intervene in relations everywhere, they need to be removed (antisepsis) if one is to obtain 'pure' relations solely between humans. This was something the Pasteurians recognised right from the start (Latour, 1988, p. 39):

> *… to obtain economic and social relations in the strict sense, we must first extirpate the microbe … we must divert the microbes so that they will no longer intervene in relations everywhere.*

The insertion of control over microbial life to obtain the 'pure' economic/social relations that Latour describes (i.e. relations that were immune to microbial intervention) into Foucault's biopolitics thus produces 'microbiopolitics' (Paxson, 2008, p. 17):

> *… the creation of categories of microscopic biological agents; the anthropocentric evaluation of such agents; and the elaboration of appropriate human behaviours vis-`a-vis microorganisms engaged in infection, inoculation, and digestion.*

We can discern two different but intertwined aspects of Paxson's notion of microbiopolitics: there is the question regarding the ethics of intraspecies co-existence (human-human) on the one hand, and the question of the ethics of interspecies co-existence (human-microbe) on the other. In other words, the very possibility of social regulation through the control of microbial life hinges on a prior assumption regarding what proper human-microbial relations should be. It is in this manner that microbiopolitics thus comes to name the friction that results from the traffic between intraspecies and interspecies ethics. Thus, Paxson avers that 'dissent over how to live with microorganisms reflects disagreement about how humans ought live with one another' (2008, p. 16). We can certainly see how this is true in the context of PrEP. Consider comments made by Michael Weinstein, the president of the AIDS Healthcare Foundation, about PrEP (Associated Press, 2014):

> *If something comes along that's better than condoms, I'm all for it, but Truvada (PrEP) is not that … Let's be honest: It's a party drug.*

This perceived inferiority of PrEP as a HIV prevention solution by Weinstein is common to most critics of PrEP and can be mainly attributed to the idea of risk compensation, 'or increased HIV risk behaviour because of a perceived decrease in susceptibility to HIV' (Calabrese & Underhill, 2015, p. 1960) which may then offset any potential benefits for the curbing of HIV transmission that PrEP offers in the first place (see also Eaton & Kalichman, 2007; Hogben & Liddon, 2008; Underhill, 2013). Concerns related to other sexually transmitted infections (STI) such as chlamydia and gonorrhoea notwithstanding, the worry here is that even though PrEP offers its users an added level of protection which helps reduce the risk of HIV infection, it may also encourage the very same users to abandon the use of condoms and/or participate in other pleasurable 'risky' sexual practices such as Chemsex, or the sexualised use of drugs specifically for the purpose of gay sex (Stuart, 2019), which may then ironically lead to an increase in HIV infection (Gafos et al., 2019; Laarhoven et al., 2017). For these critics, the use of PrEP to have condomless sex is not seen in itself, as a form of 'safer' sex; the accumulative logic associated with maintaining corporeal boundaries demands that one pursues the 'safest' kind of sex achievable at any moment in time so that the borders between the human body and the 'deadly' outside remain impenetrable.

We are now in a position to conduct further analysis of the controversy surrounding HIV PrEP. An attention to human-microbial relations reveals that there are at least two different kinds of microbiopolitics at play here. The first kind insists on the greatest possible degree of separation between human and virus; the second also holds that human and virus should be kept separate, but does not necessarily insist on the greatest possible degree of separation. Paxson's microbiopolitics sensitises us to the anthropocentric evaluation and categorisation of microbes; the notion of degrees of separation encourages us to become

attentive to the differences that may exist between various microbiopolitics. Depending on which microbiopolitics is being practiced, sexual practices like Chemsex or having unprotected anal intercourse with(out) PrEP then come to take on different ethical meanings. At their core, arguments related to risk compensation, the effect of PrEP on other 'risky' sexual practices and how to use PrEP (i.e. with or without condoms) are actually disagreements over how one should 'live with' HIV. Assumptions over what proper human-microbial relations should be and what degree of human-viral separation is desirable shape the way we act in this world; and the way in which we act in this world then becomes the basis on which we attempt to organise society. We can thus clearly see how dissent over how to live with microorganisms relate to disagreements over how human relations should be organised; questions related to how we want to live as a human among other humans must also always be considered alongside how we want to co-exist with microbes. Recalling my earlier analysis of 'ending AIDS', we can also see how both 'elimination' and 'eradication' while remaining committed to a negative microbiopolitical evaluation of HIV, can also espouse different views on what might be an appropriate degree of separation between human and virus. If viral eradication, in demanding the permanent reduction to zero of any new cases of a disease globally is far more 'severe' than viral elimination in the extent of its demands, then it could be said that compared to the latter, the former demands for a higher degree of separation.

This tension between these two different kinds of microbiopolitics becomes all the more salient when we consider the manner in which PrEP works. Unlike barrier methods such as the condom which stops HIV infection by preventing the virus from crossing our epidermal frontier, PrEP works within the boundaries of our bodies. In other words, HIV may transgress these corporeal boundaries, but it will be unable to establish infection inside the PrEP-body. Hence, the term 'degrees of separation' has a material valency in addition to a conceptual one. Different microbiopolitics approach this question of the degrees of separation differently and this is made all the more complicated given the ability of HIV-related technologies such as PrEP to alter the capacities of human bodies to affect and be affected by microbes. The question regarding human-viral degrees of separation acquires a new importance with the increasing use of PrEP as a tool for HIV prevention since it is now possible for one to be 'close to' HIV while still remaining free of infection. In the era of ART, for the HIV-negative individual, ensuring that HIV remains beyond the epidermal frontiers of his body is thus no longer the only way to 'live with' HIV.

Despite espousing different degrees of human-viral separation however, it can still be agreed that by and large, the different microbiopolitics of HIV can be said to be united in their commitment to the 'negativity' of HIV. Bequeathed to us by 'immunity-as-defence', we inherit a static image of HIV as scourge, crisis, and disaster. My claim here however, is that the 'badness' of HIV is something that is enacted *in practice* – it is an *achievement*. But if HIV can be enacted as 'bad', then might it also be performed as 'good'? The argument that I will pursue in this thesis is that there is a whole range of other normative valuations that

HIV may also come to associated with. In some ways, the argument I am advancing here resonates with feminist social science research which has taught us that all knowledge is socially situated (Collins, 1990; Harding, 1991). Evaluations of HIV as 'bad' or 'good' are thus never universal, but always made from a particular standpoint (see also Haraway, 2004; Hartsock, 2004; Smith, 2004). The question of what HIV is cannot be answered prior to empirical inquiry.

There is, as Cohen rightly points out, an ontological danger associated with taking HIV-as-enemy as both an 'essential physical truth' and a 'matter of the world'. In taking issue with this fixed image of HIV as 'bad', my intention is not to deny that HIV is 'bad' and assert that it is 'good'. Rather my concern is this: *might HIV be more than just 'bad'*? The goal here is not to replace the image of HIV as 'bad' with another 'better' image, but to contest the excessive power given to any fixed image of HIV to represent reality. In choosing to consider, rather than deny the possibility of excess, we need to investigate what HIV is, but also always remain open to the possibility for HIV to be otherwise. As we have seen in my discussion of 'immunity-as-defence', fixity means that object, subject and the manner in which they are related become preestablished: reifying HIV thus predetermines not only the sort of relation we can have with it, but also what we can do with it. Such reification may work for immunological science, but it certainly runs into problems when used as a model to guide human relations. As Campbell wisely points out, it is precisely this inability to engage fully with the changeful nature of phenomena that impedes the success of HIV prevention efforts and there is therefore a need to develop 'new conceptual frameworks for understanding health and sexuality, and for informing intervention and policy' (2003, p. 10). We cannot, as Dewey says, continue to confine ourselves to dealing with only that which is 'fixed, immutable, and therefore out of time' (2004, p. vii). To do so would be to risk doing injustice to the creative potentials that bodies possess. That there are disagreements over what degrees of human-viral separation are appropriate (even if our microbiopolitics remain committed to the 'negativity' of HIV) already suggests in itself a potential avenue for exploration: are there situations where nil degrees of human-viral separation are warranted and/or HIV infection is actively desired?

It will be useful to explore this possibility of HIV being otherwise by returning once again to Paxson's anthropological work with raw cheese makers in the United States because it is exactly this possibility of microbes being more than just 'bad' in the context of cheese-making that she explores. For Paxson, the clash over food safety between artisanal raw-milk cheesemakers and the Food and Drug Administration (FDA) is due to the existence of different cheese microbiopolitics: Pasteurian (which operates on the same principles of excluding self from non-self like the 'immunity-as-defence' paradigm) and post-Pasteurian. Her analysis of how post-pastoral politics operate at a microscopic level, reveals that (2012, p. 161):

> *The revival of artisanal cheesemaking in the United States reveals a clash between a regulatory order bent on taming nature through forceful eradication of microbial contaminants — a Pasteurian microbiopolitics — and a post-Pasteurian, post-pastoral alternative committed to working in selective partnership with microscopic organisms, figured as agents of a nature that is not fully objectified and never fully separate from human enterprise. Whereas a Pasteurian approach treats the natural world as dangerously unruly and in need of human control, a post-Pasteurian view emphasizes the potential for cooperation among agencies of nature and culture, microbes and humans. And while a Pasteurian assessment of cheese quality harnesses technoscience to achieve predictability and standardization, post-Pasteurian investments in quality accept some degree of variability in embracing the potential of a raw-milk cheese to express exceptional, distinctive flavours.*

What Paxson is pointing out here is that the relationship between organism/environment (i.e. microbiopolitics) influences both the way cheese-making is and should be done. The aims and use of technoscience in cheese-making are thus imbricated with differing microbiopolitics (see also Houf, 2017). While Pasteurians view raw-milk cheese as teeming with pathogenic microbes and as something that is risky to consume unless pasteurised (here, one is reminded again of the 'immunity-as-defence' paradigm and the manner in which it posits a hostile relation between the organism and its environment), post-Pasteurians eschew the view that all microbes are elements to be eliminated, choosing instead to embrace microbes as a fact of life, using 'bacterial inoculation, salt, and environmental humidity and temperature to work with — not against — the biochemical nature of milk to facilitate the victory of "good" bugs over "bad"' (Paxson, 2008, p. 39). Both Pasteurians and post-Pasteurians recognise that the world is not aseptic, but where the former is determined to (re)make cheese in an aseptic image via antiseptic measures, the latter demurs and in this hesitation, is able to dwell a little longer on the question that Pasteurians takes as already answered – *how are we to 'live with' the bacteria involved in the cheese-making process?* The point being made by Paxson is not that post-Pasteurians want to give up the real gains to health that modern science has delivered by adopting a laissez-faire attitude towards microbes, instead, what is deserving of attention here is the way in which they employ a revised Pasteurian ethos to better discriminate between 'good' and 'bad' microbes so that food can be made safe via collaborative human and microbial cultural practices. For post-Pasteurian cheese makers, the goal is thus to achieve 'the appropriate level of control to ensure safety and consistently high quality while at the same time giving nature enough free rein to encourage the diversity and uniqueness of character that make artisanal cheeses special' (Kindstedt, 2005, pp. 37–38). It is precisely because post-Pasteurians refuse to give up on the possibility of living with microbes in a way that is not wholly Pasteurian, while still recognising that artisanal cheese-making's dependence on the emergence of novel human-microbial relations might come into conflict with other important issues like food safety, that prompts them to explore new and creative ways of living with our

microbial companions. Paxson's ethnographic work thus illustrates how the microbes in cheese-making can always be otherwise, moving between 'good' and 'bad' depending on the situation in which it is embedded in. One might say, following Mol (2002) then, that the microbe is multiple. Like Paxson, I am interested in telling stories of contrasting human-HIV relations, but to do so, it is important first to make clear the manner in which this thesis understands how things (HIV, bodies, technology, etcetera) come to be. The reader might have noticed my emphasis on the doing of human-HIV relations: the next section will elaborate on the relational ontology that underpins this thesis and this will be developed further in chapter 3 through the use of real-life examples. As we shall see, to enter into non-Pasteurian relations is also to do HIV and body differently.

2.4 Ethico-onto-epistem-ology

According to Barad (2007, p. 140):

> *The world is a dynamic process of intra-activity and materialization in the enactment of determinate causal structures with determinate boundaries, properties, meanings, and patterns of marks on bodies.*

Elaborating her view further, she argues that (ibid., p.150):

> *'Things' don't preexist; they are agentially enacted and become determinately bounded and propertied within phenomena. Outside of particular agential intra-actions, 'words' and 'things' are indeterminate. Matter is therefore not to be understood as a property of things but … must be understood in more dynamic and productive terms-in terms of intra-activity.*

From this perspective, the world is not static and unchanging, rather, it is always in an open process of dynamic becoming. This means that things-in-themselves do not pre-exist our apprehension of them and what we take for 'things' are but phenomena in their ongoing materialisation; stated plainly, reality is brought-into-being through our practices and it is not something we 'discover' (Woolgar & Lezaun, 2013). Bodies, both human and non-human 'come into existence within the confines of phenomena … [and] are defined and 'thingified' in relation to the conditions of the context' (Calvert-Minor, 2014, p. 128). Hence, the 'primary ontological unit is not independent objects with inherent boundaries and properties but rather phenomena' (ibid., p.139). It follows from the relational view espoused here that matter – all matter – cannot be a 'thing': instead, matter must be a doing, a congealing of agency through the ongoing materialisation of phenomena (Butler, 1993). Additionally, because the world is phenomena in their ongoing materialisation, agency cannot only be reserved for the (human) subject – all that matters, has

agency. Agency is the 'ongoing reconfigurings of the world' (Barad, 2003, p. 818) and is 'differentially distributed' among a myriad of entities, whether human, non-human or more-than-human (2010, p. 38). We thus have a posthuman notion of agency that supplements and expands the notion of collective agency (as discussed in chapter 1) such that it is also inclusive of the more-than-human, both organic and inorganic. Barad's approach here resonates with other scholarly work in areas such as posthumanism (Wolfe, 2009), actor-network theory (Latour, 2005; Mol, 2002), vital-materialism (Bennett, 2010), object-oriented ontology (Harman, 2018) and cosmopolitics (Stengers, 2010, 2011), since they reject the anthropocentrisms of humanism and emphasise the capacity of the more-than-human to affect and be affected. Matter is agentive and thus always able to intervene in the reality that they are always already a part of, or as Barad elegantly states, matter 'is produced and productive, generated and generative' (2007, p. 137). This shift from an anthropocentric notion of agency to posthuman agency thus also enlarges the space of ontological possibilities far beyond what is generally considered – it allows us to take seriously the idea that HIV might be changeful and thus more than just 'negative'.

Key to Barad's agential realism is the notion of intra-action. Matter acquires form and becomes meaningful only through the actualisation of different agential intra-actions. For Barad, nature has an entangled nature and there is thus ontological indeterminacy instead of ontological fixity. This indeterminacy is subsequently 'resolved' via intra-activity, which she explains as:

> *Intra-actions include the larger material arrangement (i.e., set of material practices) that effects an agential cut between "subject" and "object" (in contrast to the more familiar Cartesian cut which takes this distinction for granted). That is, the agential cut enacts a resolution within the phenomenon of the inherent ontological (and semantic) indeterminacy.*

Thus, unlike the more common notion of inter-activity which assumes that relata pre-exist relations, Barad's intra-activity highlights how subject and object do not exist as such apart from their intra-action. Intra-action enacts agential separability (i.e. the agentially enacted material condition of exteriority-within-phenomena) to produce relata-within-phenomena; and once an agential cut is made, the identification that subsequently results is also 'not arbitrary but in fact materially specified and determinate for a given practice' (ibid., p. 155). In other words, even if phenomena are the 'ontologically inseparability of agentially intra-acting components' (ibid., p. 148), effects of boundary and fixity which we associate with an object-in-phenomena can still be brought-into-being as the result of the iteration of intra-active processes over time (i.e. the repetition of agential cuts enacted through intra-action). It is in this way that intra-action is both able to account for the changeful nature of the world and also explain how phenomena come to be 'objective' in the Baradian sense of being reproducible and communicable. Stated plainly, the point here is that an entity is never a fixed object, a thing-in-itself; it becomes a 'thing' only because of the relations it

enters into with other 'things'. Reality is 'not a static relationality but a doing – the enactment of boundaries – that always entails constitutive exclusions' (ibid., p. 135). Relations have priority over relata.

Because the agential cuts every intra-action enacts open up some possibilities while simultaneously excluding others, in Barad's agential realism, ethics is always inextricably entangled with ontology. What emerges from this subsequently, are questions of accountability. There is nothing inherently 'natural' about our current microbiopolitics of HIV or what we might take to be an appropriate degree of human-viral separation. Distinctions between subject and object, or HIV and human are enacted in practice and this makes it possible for us to both consider and be accountable for the 'effects of [our] particular engagements with the world' (Hollin, Forsyth, Giraud, & Potts, 2017, p. 930). We are actively intervening in the world no matter what we do and it is thus of the utmost importance to contemplate 'at every moment which knowledges get produced, which thinking populates the world and which cuts are made – because cuts necessarily will (need to) be made in' the dis/continuous becoming of reality (Thiele, 2014, p. 205).

It must be emphasised that even though it is the case that reality could always be otherwise, it does not follow from this that any kind of reality is possible. Intra-actions do not happen willy-nilly: they emerge from a field of possibilities. The thought of Deleuze is useful here. For Deleuze, problems are akin to what he calls the virtual, or a field of potentialities, which are actualised as singularities, or in other words, solutions (1994). Or as Reynolds puts it, 'the virtual refers to that which is creative, productive, and transformative … whereas the actual refers to that which is created, produced, and of the realm of identities, sameness, and all that currently is' (2012, p. 110). Each actualisation of virtual potential (i.e. solution) changes the virtual field by producing new potentials (and closing off others), which in turn are taken up as new opportunities for more actualisations. An example will serve to clarify this further – consider the development of ARVs. While the advent of ARVs created the problem of medication adherence, which then led to the practice of pill counts as a way to ensure that medication is being taken regularly, the development of ARVs cannot be seen solely as a *response* to the problem of HIV. Rather, given that inherent in ARVs-as-solution is the insistence that attention also be paid to other issues related to ARV production, transportation, storage, access and adherence – issues that are 'inherited' by the problem of HIV so to say – ARVs-as-solution can also be said to have 'grown' the problem. In other words, the problem of HIV has been irrevocably changed by the development of ARVs: the field of potentialities has forever been changed, opening up new possibilities for intra-action, while closing off others. To put it in Baradian terms, solutions enact agential cuts, 'cutting' up the problem such that it comes to matter in some ways and not in others. The problem of HIV insists on and persists in the solutions that are actualised as a response to it and it is also constantly in a process of being renewed as the solutions give way to other potentials and possible futures; stated otherwise, problems are never actually 'solved', instead, they are open-ended, growing together with and as solutions are actualised. Possibilities evolve alongside the

world's dynamic becoming. It is indeed as Mariam Fraser argues, that the 'best that a solution can do therefore is to develop a problem' (2009, p. 76). The relationship between the virtual and the actual, or problems and solutions is therefore one of cyclical reciprocity, each 'constraining' and shaping the other.

Additionally, what is also noteworthy is that in any problem-solution complex, since the 'virtual possesses the reality of a task to be performed or a problem to be solved', 'it is the problem which orientates, conditions and engenders solutions' (Deleuze, 1994, p. 212). Problems always serve as the laboratory for its own solutions. Stated otherwise, a 'problem always has the solution it deserves, in terms of the way in which it is stated (i.e., the conditions under which it is determined as a problem), and of the means and terms at our disposal for stating it' (Deleuze, 1990, p. 16). What this quote by Deleuze suggests is that while it is important to consider the generative relationship between problems and solutions, attention must also be paid to the conditions which make it possible for a problem to be posited in the first place. It is instructive here I find, to turn to the later work of Foucault, in which he engaged in the critique of what he called 'problematisations'. For Foucault, problematisation is related to the development (Foucault, interviewed by Rabinow, 1984, p. 389):

> *… of the conditions in which possible responses can be given; it defines the elements that will constitute what the different solutions attempt to respond to. This development of a given into a question, this transformation of a group of obstacles and difficulties into problems to which the diverse solutions will attempt to produce a response, this is what constitutes the point of problematisation and the specific work of thought.*

Problematisation is thus 'about the active performance of ideas and attitudes that establish what might otherwise be alterior, or extraordinary, to be, instead, normal and therefore within the realm of successful problem formation and solution' (McCormack, 2009, p. 24). So, for example, if one considers the suggestion that one possible way to 'live with' HIV is to actively seek infection instead of avoiding it to be ridiculous, this is because of the particular way in which the problem of HIV has been problematised – as 'immunity-as-defence'. Possibilities for intra-action are thus closely related to the manner in which a problem has been problematised; this also means that for us to intra-act with HIV differently, the problem of HIV must also be problematised differently and in a way that is not strictly immunological. If discourse 'is that which constrains and enables what can be said' and discursive practices 'define what counts as meaningful' (Barad, 2007, p. 146) then it might be said that opening up different possibilities for intra-action (and having them be meaningful) depends on there being an alternative to the immunological discourse that dominates HIV prevention. It should be noted however, that the relationship between discourse and materiality is not unidirectional. Much like the cyclical reciprocity that obtains between Deleuze's virtual and actual, conceptual-discursive norms 'are not something imposed upon phenomena

"by" us … we ourselves only become agents/knowers as material components of the larger patterns of natural phenomena' (Rouse, 2004, p. 146). Or as Barad states (2003, p. 822):

> *The relationship between the material and the discursive is one of mutual entailment. Neither is articulated/articulable in the absence of the other; matter and meaning are mutually articulated. Neither discursive practices nor material phenomena are ontologically or epistemologically prior. Neither can be explained in terms of the other. Neither has privileged status in determining the other.*

In other words, 'the natural world only acquires definite boundaries, and concepts only acquire definite content, together' (ibid.). Meaning becomes possible through our material practices. Material practices and discursive practices must thus be approached in a unitary manner; all practices are material-discursive. Make no mistake then: ontology is not only about doing, it is also about thinking. We think-do reality. While seemingly obvious, this is a point worth belabouring because as Timothy Morton has rightly pointed out in an interview, intellectuals can often become self-destructive when they practice anti-intellectualism by 'beating up on thought' (Cisneros, 2016). Our epistemologies are not merely the frameworks through which we apprehend a pre-existing reality, and because the ways we know actively bring-into-being realities, thinking is never *just* thinking. If previously we were in the business of 'epistemologising ontology', what we are now concerned with instead is 'ontologising epistemology'. Ontology, ethics and epistemology are inseparable, and we thus enter into the realm of *ethico-onto-epistem-ology* where an appreciation of (Barad, 2007, p. 185):

> *… the intertwining of ethics, knowing, and being-since each intra-action matters, since the possibilities for what the world may become call out in the pause that precedes each breath before a moment comes into being and the world is remade again, because the becoming of the world is a deeply ethical matter.*

2.5 HIV multiple?

As we have seen thus far, the emphasis of Barad's agential realism 'is not on the possibility of multiple ontologies, but on the relative stability afforded to matter after it has intra-actively emerged' (Hollin et al., 2017, p. 933). Thus, in this section, I want to turn my attention away from Barad to engage more explicitly with the possibility of multiple ontologies that scholars working in the area of feminist Science and Technology Studies (STS) have long been interested in.

For these STS scholars, the relations we enter into are also world-making: reality is 'an effect of the relations that are assembling and doing them' (Law, 2009, p. 2). Different practices enact different realities. Here, STS scholars join Barad in refusing the 'representationalist fixation on words and things and the problematic of the nature of their relationship, advocating instead a relationality between specific material (re)configurings of the world through which boundaries, properties, and meanings are differentially enacted' (Barad, 2007, p. 139). Rather than assuming a singular reality which we understand differently via a myriad of epistemologies (i.e. representationalism), STS scholars assert that different objects are actualised by different practices – and that these objects are all *real*. If for representationalism the pressing question to be dealt with relates to the question of discerning which epistemologies, or representations of reality are most accurate, this need to determine which epistemology has the best 'hold' over reality is actually obviated in the multiple-world ontology advanced by STS scholars. Or as John Law states (2015, p. 127):

> *Is it simply that people believe different things about reality? Or is it that there are different realities being done in different practices? If the first of these positions is right, then we are in the business of beliefs, perspectives, and epistemologies … If, on the other hand, the second position is right, then we are being backed into issues of ontology. This alternative position is analytically radical because it treats reals as effects of contingent and heterogeneous enactments, performances or sets of relations.*

In her book, *The Body Multiple*, Annemarie Mol conducts an ethnographic study of a disease (lower limb atherosclerosis) in the Netherlands and demonstrates how the disease is done differently depending on the practices involved (2002):

- In the clinic, atherosclerosis took the form of patients complaining of pain in their legs when they walked;

- In the radiology department, atherosclerosis was enacted via the practice of taking radiographs and was presented as a black-and-white picture;

- In the laboratory, atherosclerosis was enacted when technicians spread gel on the skin of patients so as to be able to take an ultrasound scan of blood moving through the blood vessels; and

- In the operating theatre, atherosclerosis took the form of a plaque that blocked blood vessels which could be seen when the limb was cut open.

Note how a variety of different entities are implicated in doing atherosclerosis: laboratory technicians, nurses, scalpel, syringe, lights, cleaners, calcium, etcetera. Hence, the assemblage of relations that make up the practices that enact atherosclerosis are not simply those between humans, but also those that involve the more-than-human. Here, there is a clear relation to my previous discussion of posthuman agency and in STS parlance, it might be said that there is a 'general symmetry' that obliges us to account for the agency of the more-than-human (Latour & Porter, 1993). As Latour and Woolgar (1986) show in their now classic STS study of laboratory life, the more-than-human play a constitutive and agentic role in the production of scientific knowledge. So, just as we do atherosclerosis, atherosclerosis also does us since the way we act also changes in relation to the disease. World-making requires collaboration between humans and the more-than-human (Jensen, 2017). Secondly, with four different atherosclerosis, there thus exists a practical '*problem of difference'*. In other words, all of these different realities need to be coordinated (or not) in some way or another. So, for example, different atherosclerosis may be said to cohere in the following way: the pain experienced when walking is due to a reduction in the flow of blood to the lower limbs, which in turn is due to the build-up of atherosclerotic plaques. But just as these different atherosclerosis may 'hang together', they can also stand in mutual exclusion from each other in certain situations. Atherosclerosis does not exist as both lower limb pain and a blocked artery in the same site: it is pain during diagnosis in the clinic, and a blocked artery in the operating theatre. Thus, 'the possible tensions between variants of a disease disappear into the background when distributed over different sites' (Goodwin & Mort, 2010, p. 62). Mol summarises (2002, p. 5):

> *… objects come into being—and disappear—with the practices in which they are manipulated. And since the object of manipulation tends to differ from one practice to another, reality multiplies. The body, the patient, the disease, the doctor, the technician, the technology: all of these are more than one. More than singular. This begs the question of how they are related. For even if objects differ from one practice to another, there are relations between these practices. Thus, far from necessarily falling into fragments, multiple objects tend to hang together somehow. Attending to the multiplicity of reality opens up the possibility of studying this remarkable achievement.*

I want to apply the insights from Mol I have discussed here in the context of HIV. Without embarking on a multi-sited ethnographic study of HIV so as to provide an illustration of the manner in which HIV is enacted across different locations – in the clinic, hospital or laboratory, for example – it will be difficult to provide the sort of technical detail that Mol provides in her ethnography of atherosclerosis. Yet, despite this, it seems entirely reasonable to suggest that just as there exists multiple atherosclerosis, there also exists a multiplicity of HIVs. For example, the HIV enacted when a condom is used during anal intercourse is different from the HIV enacted in the laboratory processing a HIV antibody test. The HIV enacted in a viral load test is also different from the HIV enacted in a sex education class given to students in a primary

school. The HIV enacted by bugchasers (men who deliberately forgo condoms when having sex with other men in favour of exposure to HIV) is also different from the HIV enacted by young girls who live in poverty in sub-Saharan Africa. The HIV enacted by individuals in different 'risk' categories (HIV-positive, HIV-negative, HIV-positive with undetectable viral load, HIV-positive with drug resistant virus, etcetera) are all also different. And the list goes on. In fact, because HIV is such an omnipresent aspect of modern life, one might even go as far to say that there are a mind-boggling number of ways in which HIV can be and is brought-into-being.

Some important points follow. Firstly, given that there exists a multiplicity of HIV, it is necessary not only to investigate how it is that these HIVs come-into-being but also how they cohere (or not) – this will be done in the next chapter. Secondly, just as we enact HIV, HIV also enacts us. Different HIVs enact our bodies differently and attention must thus also be paid to the manner in which bodies (human and non-human) are mutually constitutive – this will also be examined in the next chapter. Thirdly, in this pluriverse of multiply enacted realities (Blaser, 2013; Savransky, 2019), it must be noted that disagreements over what HIV is cannot be merely attributed to differing epistemologies or beliefs. That is to say, there is no 'objective' reality on which the supposedly 'accurate' representation of HIV-as-enemy can be based on, since 'what is at issue and at stake is a matter of the nature of reality, [and] not merely a matter of human experience or human understandings of the world' (Barad, 2007, p. 160). From this perspective, the issue of whether one party has a more accurate understanding of what HIV is than another, is irrelevant. Not opting for a one-world metaphysics subsequently has far-reaching impact for how we approach the question of HIV. For one, it now becomes difficult to argue that those who disagree with HIV-as-enemy only do so because they have a mistaken belief in what HIV is – and that this needs to and can be 'rectified' with 'education'. There is no singular, 'objective' reality with which we must all come to terms with; HIV-as-enemy is but just one instantiation of HIV among many others. This should not however, be taken to mean that the dissemination and provision of information regarding HIV risks or transmission is mistaken or unnecessary – HIV-as-enemy is as real as all other materialisations of HIV – but simply that such measures cannot be based in or used as a means to justify the imposition of HIV-as-enemy on everyone involved in such a way that fosters neglect of all else that HIV is and might be. Additionally, if as discussed in chapter 1, the provision of HIV-related information does not necessarily lead to increased condom use and may instead result in the emergence of a range of other 'safer' sex practices, then it also follows from this that the provision of HIV-related information may also bring-into-being a multiplicity of HIVs. Simply put, if there is no direct linear causative relationship between the provision of HIV-related information and the production of a certain (desired or not) practice as previously argued, then there can also be no ontological guarantee that HIV-as-enemy will persist (or desist). HIV-as-enemy cannot be a universalising discourse 'in the sense that it has the effect of enacting universal knowledge' (Lien & Law, 2011, p. 68) that this is all there is to what HIV is. We are thus embroiled in 'ontological politics' (Mol, 1999) where 'the dynamic

relations between people and materialities create emergent worlds, giving rise to new forms of politics, technology, and cosmology in continuously unfolding processes' (Gad et al., 2015, p. 76). The ethical import of what has been suggested here can subsequently be summarised in three parts, all of which have guided the formulation and execution of my thesis: it is vital to examine the practices that enact a one-world reality; it is also crucial to investigate other practices that enact multiple ontologies; and it is all the more important to examine tensions between the former and the latter – that is to say, how might fractiversal realities be freed up (Law, 2015)?

2.6 Microbiopolitics, value creation and axiology

Having laid out the relational ontology that underpins this thesis, I want to return to the notion of microbiopolitics. Thus far, the thesis has spoken about the evaluation of HIV in somewhat 'general' terms (i.e. 'bad' or 'good') and it will be useful to examine how this axiology interfaces with *ethico-onto-epistem-ology*.

Right from the outset, it is important to distinguish, as Himes and Muraca do, between the process of valuation and the content of valuation (2018, p. 2):

> *The process of valuation refers to how it occurs that something we encounter becomes important, significant, or worth our attention. The content of valuation … refers to what is valued and how the value is attributed and articulated.*

With that in mind, broadly speaking, philosophers have approached axiology, or the study of value, in one of two ways. The first, *axiological objectivism*, holds that 'values are independent of agents and external factors' (Skowronski, 2009, p. 101). Taken as a property intrinsic to the object in question, value has 'an objective basis independent of thought, emotion, and experience, with the consequence that value experiences are either appropriate (correct) or inappropriate (incorrect)' (Rescher, 1969, p. 52). This consequence of there being a 'right' value to be discovered or acknowledged by subjects shares a close affinity with the one-world metaphysics previously discussed and the business of 'epistemologising ontology'. Much like how the 'objective' reality on which the supposedly 'accurate' representation of HIV-as-enemy may be used as means to debate the issue of whether one party has a more accurate understanding of what HIV is than another, axiological objectivism thus also presents its adherents with the means to establish a certain value experience as 'correct' over all others. This is a point also noted by Mariam Fraser and she highlights how the 'relations between facts and values and the related, although not identical, relations between objects and subjects not only guard the frontiers of science but also often run like a fissure through ethics' (2006, p. 53). The second, *axiological subjectivism*, argues that value is in

the eye of the beholder; in other words, evaluation 'is relative in nature and represents a projection of worth or significance onto an entity or event' (Marcum, 2008, p. 191). Value thus 'comes to be understood as a secondary quality, and subjective value, often, as a personal quality' (Fraser, 2006, p. 51). It is interesting to note, as Proctor has, that for the ancients, value existed in the world itself in the form of a 'hierarchy of perfection [that] rose from the fires of hell to the spheres of heaven … the natural order was an ethical order – there was telos in all *physis* – the order of nature was not separate from the order of the good' (1991, p. 39). Owing to the advent of modern science however, this natural-moral order would subsequently come to be replaced with 'a 'geometrised, Euclidean conception of the universe as infinite in extent and everywhere the same' (ibid., p. 40) to the effect that value now came to be 'confined to human creations, to their arts and to their labours' (Fraser, 2008, p. 49). The emergence of modern science is therefore intimately related to the distinction between 'qualities absolute and fixed … and qualities subjective and in flux' (Proctor, 1991, p. 54) as seen in axiological subjectivism.

Returning once again to the distinction between the process of valuation and the content of valuation, two points subsequently follow. Firstly, regardless of what axiological position one takes, processes of valuation are always relational (Maier & Feest, 2016), since 'all values emerge, on some level, from relating one thing to another' (Saxena, Chatti, Overstreet, & Dove, 2018, p. 55). Secondly, while I cannot possibly hope to rehearse the merits and flaws of axiological objectivism and subjectivism, or outline their many other theoretical variants given the limited scope of this thesis (however, see Rønnow-Rasmussen, 2003; Skowronski, 2009), what needs to be emphasised here is how for both axiological objectivism and subjectivism, the content of valuation is the thing-in-itself. Thus, even though the process of valuation is relational, because relata and not relations, constitute the primary ontological unit, the content of valuation remains confined within the subject/object dichotomy. In other words, the dispute between axiological objectivism and subjectivism over the location of value happens *after* the ontological separation of subject/object. The situation I have described here is an example of what Whitehead (1920) calls the 'bifurcation of nature' where 'subjects and objects and, relatedly, primary and secondary qualities' (Fraser, 2008, p. 59) are made distinct from each other.

Given that I have argued that subject and object do not exist as such apart from their intra-action, it should be immediately clear how an axiology based on the thing-in-itself is problematic. What is needed then, is a thoroughly relational account of not only the process of valuation, but also of the content of valuation in the form of a *value relationalism*. Rehabilitating thing-in-itself axiology through the lens of a relational ontology as discussed in the previous section, value relationalism thus allows us to see value in a different light (Himes & Muraca, 2018, p. 2):

> *Valuations are neither entirely produced by the observer nor inherent to the thing but arise in the space of encounter where the subject and objects originate. Thus, the genesis of valuations is not merely subjective nor only objective but rather constitutive of both.*

Value emerges alongside the coming-into-being of relata, or perhaps more specifically, value, subject and object are entangled in a process of mutual co-constitution. Following Whitehead, we might say then that within this 'value-relational world all "things" are … defined not simply in terms of their relations, but in terms of relational responses to values felt, that is, as positive or negative reactions or responses to some given state of affairs' (P. Rose, 2002, p. 2). All relations are thus value relations; realisation 'is in itself the attainment of value' (Whitehead, 1985, p. 116). The implications, as Rose puts it, is thus (2002, p. 2):

> *The novel 'world view' that results dissolves the hard and fast distinction between facts and values in favour of a world of embedded values. For within this world, values are not distinct from facts, but are part of the very 'matter' of fact – part of the very fabric of 'things' in and of themselves.*

Latour makes a similar point in his insightful book, *The Politics of Nature*. In it, he examines and collapses the fact-value distinction, showing how this distinction has been responsible historically for the separation of the moral question of the common good from 'the physical and epistemological question of the common world' (2004, p. 93). Commenting on how this separation is deleterious, he notes (ibid., p. 97):

> *The notion of 'value' … has the pronounced weakness, first of all, of depending entirely on the prior definition of 'facts' to mark its territory. Values always come too late … If, in order to bring about what ought to be, values require rejecting what is, the retort will be that the stubbornness of the established matters of fact no longer allows anything to be modified … [Only] [o]nce the cloning of sheep and mice has become a fact of nature, one can, for example, raise the "grave ethical question" whether or not mammals, including humans, should be cloned.*

His argument and treatment of the concept of nature is detailed and lengthy, but like Whitehead, Latour ultimately shows how axiological questions cannot be raised *post facto* (i.e. *after* the facts have been established)*;* questions pertaining to the common world must be brought alongside those of the common good such that the important question of the '*good common world*' is posed (ibid., p. 93).

What then, might the implications of value relationalism as detailed above, be for how we understand the notion of microbiopolitics? As we can recall, Paxson defines microbiopolitics as (2008, p. 17):

> *… the creation of categories of microscopic biological agents; the anthropocentric evaluation of such agents; and the elaboration of appropriate human behaviours vis-`a-vis microorganisms engaged in infection, inoculation, and digestion.*

Having previously discussed the friction that results from the traffic between intraspecies and interspecies ethics in the notion of microbiopolitics, my focus here will be on examining the evaluative component of Paxson's definition through the lens of value relationalism. If value and facts are co-extensive, coming-into-being together, then any microbiopolitical evaluation of HIV must not be understood as a quality one 'discovers' in the virus; and neither can it be taken as simply something that a subject 'adds' to HIV-in-itself. Rather, any and all microbiopolitical evaluations of HIV are co-created with, and also mutually constitutive of the many heterogenous elements of the assemblage that brings HIV-into-being; there are no axiologically indifferent activities. Relationality and values are 'are part of the fundamental mode of becoming' (Sehgal, 2018, p. 10) and as one thinker notes, this way of 'conceiving of value allies axiology to the invention of the *new*' (Massumi, 2017, p. 355). Microbiopolitics thus becomes more than just a notion to describe the anthropocentric evaluation of microbes and the latter is now embroiled precisely in Barad's ethico-onto-epistem-ology in that it refers to a process through which we actively engage in world-making. Brian Massumi suggests a similar point when he asserts that value does not 'inhabit some pure moral domain' and is instead 'active in the world, alive with appetition and self-transformation' (ibid., p. 356). It becomes clear then that the task of investigating how it is that a multiplicity of HIVs come-into-being is also an undertaking to appreciate how the myriad values involved in enacting reality are constantly shifting and mutating. While useful in communicating the significance of a particular doing of reality (i.e. how we are affected by a specific state of affairs), microbiopolitical evaluations of HIV as 'positive' or 'negative' should never be understood as having any sort of finality to them and should instead act as lures that prompt us to embark on a journey of continuous value exploration – a journey that may help us become more sensitive to the manifold ways in which value is always transforming.

2.7 'Damage-centred' research

In her open letter, Eve Tuck writes about the need for a moratorium on *'damage-centred' research*, understood broadly as research that thinks its research subjects as *damaged*. She explains that (2009, p. 409):

> *This kind of research operates with a flawed theory of change: it is often used to leverage reparations or resources for marginalized communities yet simultaneously reinforces and reinscribes a one-dimensional notion of these people as depleted, ruined, and hopeless.*

It is not hard to see how such 'damage-centred' research plays out in HIV prevention research. For example, it is not uncommon for research to highlight the plight of MSM and/or BAME (Black, Asian and minority ethnic) communities and how they experience disproportionate rates of HIV infection or AIDS-related deaths. Portrayed as 'damaged', this then serves as the driving force behind the channelling of increased resources towards these communities to help them. As Tuck states, this is a mode of research 'that establishes harm or injury in order to achieve reparation' and is one that has become so 'popular in social science research … that folks might think that it is entirely what social science is about' (ibid. p. 413-414). While she acknowledges that her ability to even mount this critique is the result of precisely decades of 'damage-centred' research done by scholars before her, she maintains that such research is no longer sufficient and that there is a need for a shift towards what she calls *'desire-centred' research* which accounts not only 'for the loss and despair, but also the hope, the visions, the wisdom of lived lives and communities' (ibid., p. 417).

I wholeheartedly support Tuck's call for a shift towards research that refuses to fetishize damage and acknowledges its subjects as *not only* 'broken'. As it shall become apparent in the rest of the thesis, what my analysis of the *Los Frikis* and bugchasers does is to complicate the aforementioned widespread bringing-into-being of HIV-as-enemy so that HIV-infection becomes *more than* just 'damage', and the HIV-infected, more than just 'broken'. At present however, what I wish to highlight is another way in which we might understand how HIV prevention research might be said to be 'damage-centred' so as to better elucidate why immunological ideas have such enduring purchase in the way we do human-HIV relations: it is research that is centred around *preventing* damage. This prevention of damage that I am referring to here is best understood in terms of what Edelman (2004) calls 'reproductive futurism', a rhetoric of futurity associated with the valorisation of a heteronormative political discourse and social order motivated by a moral commitment to 'protect' our future, or not-yet-brought-into-being children. Central to reproductive futurism is thus the image of the Child, which 'remains the perpetual horizon of every acknowledged politics, the fantasmatic beneficiary of *every* political intervention', so much so that even 'proponents of abortion rights, while promoting the freedom of women to control their own bodies through reproductive choice, recurrently frame their political struggle, mirroring their anti-abortion foes, as a "fight for our children – for our daughters and our sons," and thus as a fight for the future' (ibid., p. 3). White's explanation of what is at stake in reproductive futurism, is useful here (2012, p. 3):

> *Social order organised by reproductive futurism is propelled ever-forward towards a glorious future through a continuous disavowal of the death drive, the supposed instinct towards extinction and nothingness.*

In this way, HIV prevention research is 'damage-centred' not only because it pathologizes individuals/communities to achieve reparation, but also because it is driven by an impetus to prevent any damage to the Child. If MSM and BAME individuals are 'damaged' in the sense that Tuck speaks about, then what the image of the Child also makes clear is that this 'damage' (i.e. disproportionate rates of HIV infection and AIDS-related deaths) also makes them *more damaging to the Child* in terms of the higher 'risk' they pose for HIV transmission. HIV-prevention-research-as-damage-centred-research is thus both about the *'damaged'* and the *'damaging'*.

Perhaps nowhere is this idea of reproductive futurism embodied more clearly than in PEPFAR's aim to achieve an 'AIDS-free generation' (2014). According to a strategy document released by PEPFAR, an AIDS-free generation is (2012, p. 4):

> *… one where 'virtually no children are born with the virus. As these children become teenagers and adults, they are at far lower risk of becoming infected than they would be today thanks to a wide range of prevention tools, and if they do acquire HIV, they have access to treatment that helps prevent them from developing AIDS and passing the virus on to others.'*

Edelman's Child rears its head again and as the 'emblem of futurity's unquestioned value' (Edelman, 2004, p. 4), it demands that allegiance is pledged to this given social ordering where HIV is represented *only* as enemy. As Race astutely points out, the persuasive force of reproductive futurism in the field of HIV research is so immense that it renders even the expression of doubt or caution about the feasibility of 'ending AIDS' unthinkable – it is as he states that in the HIV sector, 'allegiance to this statement of strategic optimism is practically compulsory' (2017, p. 97). As the image of the future, the Child thus serves as 'a kind of disciplinary fetish object, the site of projected anxieties that form the pretext for the repression of alternative political structures, which might jeopardise the Child's supposed welfare' (Walters, 2018, p. 66). From this perspective, to choose the Child (i.e. to maximise his welfare) is also to insist and agree on the greatest degree of human-viral separation possible. Engaging in any kind of practice that exposes the Child to HIV is to condemn the Child and since humanity's future is also jeopardised in the process, it is not surprising that these practices then become 'normatively framed as abject and immoral' (ibid., p. 67). What Edelman's Child helps us to see then, is how and why the immunological problematisation of the problem of HIV remains so resilient and difficult to think otherwise. It is precisely because practices that enact and maintain the corporeal boundaries between human and virus are effective (to a large extent) in protecting the Child (i.e. ensuring the proliferation of society as we know it) that subsequently makes the use of immunological ideas as a guide for organising human relations so enduring and compelling. If immunological ideas provide the main conceptual framework in which human relations are organised in the contemporary world, then reproductive futurism explains how these ideas (i.e. HIV-as-enemy, body-with-

organs, etcetera) have such staying power. Because our societies and its institutions are structured on the basis of protecting the Child, to adopt practices that choose the not-Child is also to question the most basic principles of our social life. This is a *collateral reality* (Law, 2009) that gets incidentally done by the politics of the Child. Additionally, insofar as the quest for self-preservation and individual longevity is also a vital contributor and key part of ensuring humanity's future, there exists too, a clear affinity between the 'imperative of health' that Foucault speaks about, in which the active pursuit of health becomes 'the duty of each and the objective of all' (2000, p. 94), and the politics of the Child I am describing here. As Foucault illustrates, one does not simply possess health as though it is an object to be had; as an imperative, we are instead always *in the process* of attaining health. As 'an imperative, for the self and for others, to maximize the vital forces and potentialities of the living body', Nikolas Rose thus argues that health is now 'a key element in contemporary ethical regimes' (2007, p. 23). It is precisely because this striving for health is also simultaneously embedded within humanity's reaching towards a better future, that attention must be paid to the manner in which the former is construed as a moral duty and subsequently, recruited as a means of disciplining and motivating our obeisance to the Child. Speaking about the role of medicine in this pursuit of health, Foucault notes that medicine is 'no longer simply an important technique in the lives and deaths of individuals' and has become instead, 'in the framework of group decisions, an essential element for the maintenance and development of the collectivity' (Foucault, 2014) – of securing the future of the Child, in other words. The relation between health and futurity I am emphasising here can also be discerned from my earlier discussion of Dumit's work on surplus health, where I highlighted how, owing to a risk-oriented notion of health, current wellness is often taken as a resource to be spent on achieving health *in the future* by addressing proto-diseases. What our attention and effort spent on tackling these proto-diseases bring to the fore then, is how disease might be conceived more broadly as 'a future that must be forestalled at all costs via scrupulous risk management'(Dean, 2009, p. 68). The imperative of health, reproductive futurity and 'immunity-as-defence' thus work hand-in-hand, all committed to the protection of human life, albeit in different ways.

We might therefore think of HIV prevention as the immune system of the Child, always acting to protect the social body and the body politic from the harms that HIV-infection entails. As alluded to above, this protective effect is achieved only via the imposition of 'an ideological limit on political discourse' where the Child 'invariably shapes the logic within which the political itself must be thought' (Edelman, 2004, p. 2); limits are set on what we can or cannot do and where such limits are breached for example, much like the way white blood cells dispose of antigens, HIV prevention takes it upon itself to understand why such a breach has happened and subsequently, how it may be 'removed' or 'rectified' (i.e. brought in line with the politics of the Child). Much like how immunity is conceived to work in the biological body, self is also separated from non-self in the social body: the former includes those human-viral-technological assemblages that are valorised and cherished because they prioritise the welfare of the Child, while the

latter includes all those other configurations of human-virus-technology that are excluded and vilified because they pose a threat to the Child. In this manner, even as HIV prevention immunises the Child against HIV infection by encouraging us to have 'safer' sex for example, reproductive futurism also immunises HIV prevention and more generally, our ethics, from taking novel configurations of human-microbe-technology that materialise through practices that are 'socially decadent, indulgent and self-destructive' and are not aligned with 'immunity-as-defence' (as explored in the next two chapters) as fodder for serious ethical thought – rather, they are simply presumed to be 'wrong' and in need of 'rectification'. What the politics of the Child does is to deny all HIV-related practices which do not aim directly at the absence of disease or even the avoidance of death as having any *positive* value; restricting the range of acceptable reactions or responses to our current state of affairs, the politics of the Child thus hinders us from embarking on a journey of value exploration with regards to HIV. It seems as though that the question of what we should with HIV has been settled once and for all and my intuition is that this preoccupation with the Child and HIV-as-enemy is perhaps why research on the 'positive' or productive nature of HIV has been scarce, even as research outlining the pain and suffering that HIV infection brings continues to steadily increase.

Immunity is 'necessary to the preservation of individual and collective life – none of us would stay alive without the immune system in our bodies' but 'if assumed in a form that is exclusive and exclusionary toward all other human and environmental alterities' (Esposito & Hanafi, 2013, p. 86), it can end up counteracting life's own development. I will have much more to say in the next chapter about symbiosis and the importance of being open to the 'other' in biological development, but here what I wish to highlight is that in requiring the constant 'deferral of personal access to jouissance' so that the 'long-term interests of the Child' (Walters, 2018, p. 67) be respected, HIV-prevention-as-immune-system *when taken past a certain threshold* thus 'forces life into a sort of cage where not only our freedom gets lost but also the very meaning of our existence' (Esposito & Hanafi, 2013, p. 85). As Cohen reminds us, if 'as organisms we are constrained to live together, and insofar as we must modulate our openness both to other humans and to the other others with whom we coexist, we can never not also remain open to them without killing ourselves' (2008b, p. 109). Or, as Haraway so elegantly states: 'Life is a window of vulnerability. It seems a mistake to close it' (1991, p. 224). The point being made here by these thinkers is that while *immunitas* is very much vital to the protection of life, too much of it – much like everything else in life – can also kill or at the very least, harm that which it sets out to protect. We should aspire to protect the Child, but this protection must also be done in a way that does not suffocate it. Thus, practices that choose the not-Child by exposing the Child to alterity, no matter how socially decadent, indulgent and self-destructive, are still necessary for a meaningful and varied life. In so far as we are able to say that there is a (contingently enacted) coherent 'self' that needs to be protected, the survival and development of this 'self' is also dependent on it being open to 'non-self'. Self is always in ontological relation with non-self, and it is their

relationality (and not self-containment) that allows for a fuller and richer lived experience. This peculiar tension between self and non-self is also noted by Francisco Varela, the polymath thinker that introduced the concept of autopoiesis (1991, p. 85):

> *… the intriguing paradoxicality proper to an autonomous identity: the living system must distinguish itself from its environment, while at the same time maintaining its coupling; this linkage cannot be detached since it is against this very environment from which the organism arises [that it] comes forth.*

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As such, if there is a risk of HIV-prevention-as-immune-system becoming over-zealous and shutting down difference and novel experiences in our world, then what is needed is *communitas* (Esposito & Hanafi, 2013, p. 85):

> *If immunity tends to shut our existence up into non-communicating circles or enclosures, community is not so much a larger circle that contains them as it is a passage that cuts through their boundary lines and mixes up the human experience, freeing it from its obsession with security.*

As I have argued in this chapter, one such 'boundary line' is the presumed finality of the 'negativity' of HIV and it is thus in the spirit of *communitas*, of being open to alterity, that this thesis insists on questioning this all-encompassing representation of HIV-as-enemy. This will be done in the following chapter by being attentive to the different ways in which human and HIV relate to each other and consequently, how bodies (human and non-human) are differentially done. HIV prevention efforts, in so far as it has only tended to attend to human relations (while failing to recognise the existence of a diversity of human-microbial relations), will continue to remain partial in its ability to fully grapple with the HIV/AIDS epidemic since it ends up neglecting all the other ways in which humans might 'live with' HIV. Hence, as useful as Kippax and Stephenson's notion of collective agency is in helping us understand how HIV prevention efforts may be sustained, if attention is not also paid to the relationship between intraspecies and interspecies ethics then there is always the risk of oppressing and delegitimising different ways of co-existing with HIV that do not adhere to existing normative expectations around human-microbial relationality. This purposeful neglect and suppression of non-normative ways of 'living with' HIV may indeed be the point of HIV prevention (i.e. ending AIDS), but so long as research in the field of HIV prevention takes human-microbial relations as a given rather than as something to be explored, it will also remain forever handmaiden to the project of viral eradication/elimination. HIV prevention research has no doubt been prolific in highlighting how HIV prevention is always situationally enacted (as I have shown in Chapter 1), but in so far as it remains tethered to the 'negativity' of HIV, such research will always ultimately return to the issue of how best to

reduce HIV transmission/infection. It is in this manner that HIV-prevention-research-as-damage-centred-research may fail to consider all the other ways in which HIV might matter (both discursively and materially) outside of a damage-centred framework. Relatedly, Rosengarten and Murphy also make a similar point in their article on social science research on PrEP, stating that 'as a consequence of considerable gain against HIV with the advance of medical treatment, social research has been reduced to a subsidiary contributor to an increasingly medicalized field' (2019, p. 2). HIV-prevention-research-as-damage-centred-research is in itself no bad thing (and indeed very much necessary to alleviate human suffering), but if the aim is for social science research to make a difference to the way in which we think about the problem of HIV (as opposed to simply supporting the immunological project of keeping human and virus apart), then it subsequently also becomes necessary to revise our ideas around human-microbial relationality. Subsequently, *how then might renouncing our faith and attachment to the 'negativity' of HIV transform the way we do human-HIV relations?*

In order to revise our ideas around human-microbial relationality, the next chapter will draw on recent work in posthumanist theory and multispecies ethnography to explore the multiplicity of ways in which organism(s) and environment can and might relate to each other. Despite the widespread and ready acceptance of the 'immunity-as-defence' paradigm which coaxes us into adopting the self/not-self distinction as a means of organising the way in which we live as organisms among other organisms (of whatever species, scale and size), I will argue in the next chapter that this is neither a 'natural' nor 'self-evident' way of existence. As recent developments in the field of biology indicate, to be human is always already to be with our more-than-human companions. Other ways of co-existence are possible and the 'immunity-as-defence' paradigm with its narrow conception of interspecies relations as aggression/response 'cannot and does not account for the necessary intimacy that all life maintains with the world from which it arises, of which it consists, with which it coexists, and to which it inevitably returns' (Cohen, 2017, p. 38). In doing so, the next chapter will also complement this chapter's theoretical content by making clear what might be gained by taking this proposition of 'variable ontologies' (Latour & Porter, 1993) seriously.

3. Assembling the problem

In the previous chapter, I demonstrated how immunology, in figuring disease as the product of a causal interaction between a microbe and a host organism, takes the identities of both the host organism and the micro-organism as given from the outset. Because these immunological ideas also serve as the primary conceptual framework through which human relations are organised at present, this also means that the sort of relations we can have with HIV and what we can do with the virus also subsequently becomes delimited. Thus, if in the previous chapter my focus was on illustrating how an immunological understanding of bodies and human-microbial interactions informs inter/intra-species ethics, in this chapter I will draw on recent developments in microbiology and immunology to interrogate the generally accepted idea that the immune system functions solely to discriminate self from non-self. By examining the phenomenon of autoimmunity and research on the holobiont (which will be elaborated in detail below), I will demonstrate how in spite of the allure of the self/non-self-dichotomy, self cannot be understood as ontologically distinct from non-self – this will also serve to put some empirical 'meat' on the theoretical 'skeleton' I constructed using agential realism and science and technology studies in the previous chapter. If 19th century scientific research advanced a vision of the human body as a singularity that is both exposed to and opposed to a relentlessly pathogenic 'outside', new research actually challenges us to revise our ideas around human-microbial relationality beyond the narrow terms of aggression/defence. There is an ecological 'turn' happening in immunology and this 'ecological immunology' beckons for us to 'push immunology towards a larger ecological conceptualisation for understanding immune regulation … where [the] defence of singular selves is replaced with models describing the interactions of individuals in a community of others' (Tauber, 2008, p. 271).

3.1 Autoimmunity and the Holobiont

A good starting point for the investigation at present would be the immunological self-non-self (SNS) theory first proposed by Australian immunologist and virologist, Frank Macfarlane Burnet (1959, 1962) which as Pradeu and Carosella rightly point out, is 'almost universally accepted nowadays among immunologists' (2006, p. 235). Proposed as a criterion of immunogenicity (i.e. the question of when an immune reaction occurs in a given organism), the SNS theory asserts that 'an immune response is triggered against all foreign ("non-self") entities, whereas no immune response is triggered against the organism's own constituents ("self")' (Pradeu & Cooper, 2012, p. 1). Through the toleration of the endogenous and the expulsion of the exogenous, the integrity of the organism is thus maintained – Burnet's SNS theory is thus also a theory about the immunological self (Tauber, 1994). The Burnetian self described here thus resonates with an argument I made in the previous chapter: that the notion of a defended immune self grounds the idea of 'immunity-as-defence' and vice versa. As I illustrated, it is precisely because immunology has been guided

by this defensive framework that it has come to be known as the science of SNS discrimination (Tauber, 2008a). Evidence cited in support of the SNS theory often include studies showing that an organism accepts a graft of its own tissues (autograft) while rejecting grafts from foreign organisms (allograft) (Billingham, Brent, & Medawar, 1953; Murphy, 1913). In other words, graft rejection, as Leo Loeb (1937) wrote in an important summary paper, is the expression of the 'individuality differential', or the 'common denominator that distinguished one individual from another' (Tauber, 1994, p. 100). Beyond graft rejection/acceptance, SNS theory is also supported empirically by other studies dealing with pathogens (Burnet & Fenner, 1949), Major Histocompatibility Complex presentation (Zinkernagel et al., 1978) and thymectomy (i.e. an operation to remove the thymus) (Miller, 1961). Renowned immunologist, Polly Matzinger (2002) has highlighted how the SNS model has been modified over the years to accommodate new scientific findings and immunological data, but despite these modifications, the core of the SNS model (i.e. the immune self) remains largely unchanged. In other words, contemporary immunological accounts continue to take 'as its shibboleth the precept that the immune system serves to discriminate "self" from "not-self"' (Cohen, 2017, p. 29). Relatedly, we can discern two main principles that the SNS model leans on (Pradeu & Cooper, 2012, pp. 238–239):

1. No entity originating from the organism will trigger an immune reaction; and

2. Every foreign entity will trigger an immune reaction.

The idea that the immune system functions by discriminating self from non-self is an elegant and compelling one, but as many scientists and philosophers of science have pointed out, the SNS model is simply unable to account adequately for all that the immune system does. 'Self' components do and can trigger an immune reaction, while many 'non-self' components remain well tolerated. Hence, despite a common predilection for thinking of the immune self as a closed fortress (Wilson, 1972), it is as Tauber puts it that the evidence simply shows 'that "the immune self" cannot be defined as an entity' (2000, p. 242). As we shall see below, the 'neat boundaries of "self" and "other" continue to be broken and replaced by a spectrum of functions based on a gradation of immune responses that do not neatly fit the self/non-self division'(Tauber, 2015, p. 53).

Consider the phenomenon of autoimmunity for example, which may be understood as (John Hopkins University, n.d.):

> *… the presence of antibodies (which are made by B lymphocytes) and T lymphocytes directed against normal components of a person (autoantigens). These components are called autoantigens or self-antigens and typically consist of proteins (or proteins complexed to nucleic acids). The*

> *antibodies and T lymphocytes that recognise autoantigens are called "autoantibodies" and "autoreactive T cells".*

Or to put it in less technical terms (Cohen, 2004, p. 9):

> *Autoimmunity is a result of a hypersensitive immune system that causes one's own immune system to attack the self. Autoimmunity involves a reaction of the individual's immune system against the organs and tissues of his or her own body. One of the functions of the immune system is to protect the body by responding to invading micro-organisms, such as bacteria and viruses. It does this by producing antibodies or sensitised lymphocytes (a type of white blood cell) that will recognise and destroy the invaders. Autoimmune diseases occur when these reactions unexplainably take place against the body's own cells and tissue by producing self-reactive antibodies.*

Stated plainly then, autoimmunity occurs when the immune system reacts against itself (i.e. produces autoantibodies directed against autoantigens). As I will elaborate below, these autoantibodies do circulate in 'healthy' animals and humans (Dighiero et al., 1985, 1983; Guilbert, Dighiero, & Avrameas, 1982; Ishigatsubo, Steinberg, & Klinman, 1988; Portnoi, Freitas, Holmberg, Bandeira, & Coutinho, 1986), so it is important to note that autoimmune reactions only become pathological (i.e. autoimmune disease) when these autoreactive B lymphocytes and T lymphocytes cause damage to the organs/tissues which contain the target autoantigen. As a rubric used to comprehend more than 80 different symptomologies that affect a myriad of tissues and organs belonging to the human body, autoimmune diseases include Addison's disease, Grave's disease, Crohn's disease, type 1 diabetes, rheumatoid arthritis, multiple sclerosis, lupus and scleroderma (British Society for Immunology, 2016).

The phenomenon of autoimmunity poses a great problem for the SNS model because it goes against one of its principles that no entity originating from the organism should trigger an immune reaction. It entails a crisis of individuality since the organism compromises its 'own integrity by misrecognising parts of itself as other than itself and then seeks to eliminate these unrecognised and hence antagonistic aspects of itself' (Cohen, 2004, p. 8). From the perspective of the SNS model, what autoimmunity essentially presents us with therefore, is a situation in which the bifurcation between self and non-self (something which is at the heart of SNS theory) collapses. Both contradictory and paradoxical, autoimmunity hints not only at a biological impropriety, but also a logical one, which one thinker summarises so eruditely as follows (Cohen, 2017, p. 29):

> *In autoimmunity, the self and its negative other somehow disregard their putative mutual exclusion, such that self instead appears to itself as both self and not-self. Autoimmune conditions thus violate*

> *the law of non-contradiction, the 'law' that since Aristotle has governed the 'rationality' of Western reason, including all its scientific manifestations. Or to put it more affirmatively, if autoimmunity constitutes an immune reaction to tissues of 'the self' itself, then it constitutes a real – and hence a vital – contradiction. In theory autoimmunity should not exist since self should not 'discriminate' from (or against) itself as non-self while remaining itself – let alone its 'self'.*

Insofar as the discussion thus far on autoimmunity serves to reveal the inadequacy of the SNS model, it is important also to tread carefully. The problem here is that because the shortcomings of the SNS model has been illustrated via autoimmune diseases, there is a real danger of neglecting the non-pathological dimension of autoimmunity. Or to put it differently, autoimmunity is not synonymous with autoimmune disease and need not be associated exclusively with pathology. As Huetz et al. rightly point out, the existence of this problem is further compounded by the way in which immunity has been traditionally conceived (i.e. in terms of aggression/defence) such that immune activities are always taken as 'destructive for the 'target' organism' which essentially bans 'immune autoreactivity from normality' (1989, p. 508). One thinker makes a similar point, stating that because 'ideal' immunity was the agent of the self, the basic structure of immunology demands an 'articulation of a model of identification and the protection of organismal identity' (Tauber, 2008b, p. 227). Therefore, lest it be mistaken that the immune autoreactivity only occurs in exceptional circumstances (i.e. autoimmune diseases), there is plenty of evidence which show that autoimmunity is actually a normal process that should be understood as integrated within a more complex physiology (Schwartz & Cohen, 2000; Tauber, 2015). These studies challenge the idea that autoimmunity should only be conceived in terms of disease, by showing that 'autoimmune T cells can help heal damaged tissues' (Schwartz & Cohen, 2000, p. 265) for example. As it turns out, autoimmunity serves a 'key role in normal immunological physiology, [since] autoimmune-sensing mediates the body's normal processing of senile cells' (Tauber, 2015, p. 53) and destruction of malignancies (see also Huetz et al., 1989; Poletaev & Osipenko, 2003; Tauber, 2008b). The 'phagocytosis (internalization and destruction) of cells of the organism which undergo changes in their patterns, particularly dead cells (by apoptosis, that is, programmed cell death)' as Pradeu and Cooper explain, is an entirely normal occurrence and one that proceeds on the basis of 'self' cells being 'recognised by immune cells as entities to be destroyed' (2006, p. 238). In order to differentiate between these two different understandings of autoimmunity, Tauber proposes thus that (2015, p. 54):

> *… the noun concinnity, and the adjective, concinnous be employed to designate the unremarkable physiology of the immune system doing its maintenance functions (formerly referred to as physiological 'autoimmunity'); and autoimmunity should then be limited to indicate and describe autoimmune diseases.*

As he explains, *concinnity* derives from the Latin verb *concinno*, which means 'to join fitly together, to order, arrange appropriately, to set right' (ibid.) – an apt term to describe the other face of autoimmunity indeed! From what has been discussed thus far then, we can conclude that the first principle of the SNS theory fails to stand up to scrutiny: not only is it possible for an autoimmune reaction to be triggered by the organism's own constituents, autoimmunity, or *concinnity*, is itself a normal process that is very much crucial to the survival and functioning of an organism.

The second principle of the SNS theory, which holds that all 'foreign' entities trigger immune reactions does not fare much better. Simply put, not all that is 'foreign' triggers an immune reaction. Take bacteria for example: many bacteria co-exist with their hosts and the human gut is thought to be inhabited by 10^{14} commensal microorganisms, which help not only with the defence of the host, but also with its digestive capacity (Berg, 1996). In a great majority of pregnancies, the foetus is not rejected by the mother and an immune response is not triggered in the maternal immune system (Aluvihare, Kallikourdis, & Betz, 2004). Chimerism, also understood as 'the process by which cells are exchanged between two organisms and maintained in at least one of them, in spite of their 'foreign' character' (Pradeu & Carosella, 2006, p. 240) can also be seen in mothers, where foetal progenitor cells have been found in the mother's body up to 27 years after childbirth (Bianchi, Zickwolf, Weil, Sylvester, & Demaria, 1996). What the aforementioned make evidently clear therefore is that when 'the self is definable only in terms of immune reactivity (that which evokes no immune response is 'self'), that scaffolding wobbles under the weight of accounting for autoimmunity and different kinds of immune tolerance' (Tauber, 2008a, p. 280).

In light of the problems that both autoimmunity and the immune 'tolerance' of 'foreign' entities introduces into the SNS model, it has become increasingly urgent and necessary to change the way we conceive of the immune system (see Matzinger, 1994; Pradeu & Carosella, 2006; Tauber, 1998, 2008b; Ulvestad, 2007). In other words, while immunological models are adept at accounting for the defensive role of immunity, they must also 'be balanced with how the internal milieu of the individual organism integrates "foreign" elements' (Tauber, 2015, p. 55). Matzinger's Danger model (1994) which famously suggested that rather than engaging in SNS distinctions, the immune system is instead 'activated by danger/alarm signals from injured cells' (2002, p. 302) is one such attempt at doing so. By shifting the focus of the immune system away from SNS discrimination, the Danger model holds that 'self constituents can trigger an immune response, if they are dangerous (e.g. cellular stress, some autografts, etc.); and non-self constituents can be tolerated, if they are not dangerous (e.g. the foetus or commensal bacteria)' (Pradeu & Cooper, 2012). Dispensing 'with the need to conceive the organism as distinct from not only its environment, but also the many benign and perhaps necessary "others" that coexist with and in, if not "as," us' (Cohen, 2004, p. 9), Matzinger's model therefore revises predominant immunological ideas around human-microbial relationality beyond the narrow terms of aggression/defence. 'Immunity-as-defence' is thus joined by

'immunity-as-tolerance' and together they shift immunology's primary concerns of 'defending the insularity of the organism to placing the organism in its environment, where useful exchange of nutrients and exposure to myriad substances must not only be tolerated, but encouraged' (Gilbert & Tauber, 2016, p. 845). Choosing to put aside the SNS dichotomy as well, Tauber argues that immunology has for far too long been taken as 'the science of individuality at the expense of community' (2008b, p. 229) and pushes therefore for a shift towards an ecological perspective that understands the immune system as regulated by larger contexts (2008a). To this end, immunity should be thought of as a cognitive system that perceives its environment and enacts 'appropriate responses to that environment' (ibid., p. 232). Immune reactivity is thus not simply a matter of identifying and expelling the 'other', but involves 'multiple stages of sensing, adjusting, and configuring immune reactions — positive and negative — in settings that vary in time and space' (ibid., p. 233). Consequently, from this ecological perspective, there is no circumscribed and self-contained entity that is the immune self, rather (ibid., p. 234):

> *… the organism adjusts its own identity as it responds along a continuum of behaviors to adapt to the challenges it faces, and, indeed, 'identity' is determined by particular context. Responses are consequently based not on intrinsic foreignness, but rather on how the immune system sees an 'alien' or 'domestic' antigen in the larger context of the body's economy.*

Like Matzinger's Danger model, in Tauber's account, immunity thus 'expands from its [previously] exclusive defensive function to assume the broadened role of distinguishing benign from deleterious microbes and then allowing beneficial intercourse with the organism's environment' (Gilbert & Tauber, 2016, p. 840). It is worth pointing out here that while the focus on the contextual is something that is common to both Matzinger and Tauber, the latter might be said to go beyond the former in that the idea that the host organism has pre-defined and set boundaries is completely eschewed. In this way, Tauber's 'ecological immunology' compels us not only to revise our immunological ideas around human-microbial relationality beyond the narrow terms of aggression/defence, but also to rethink the atomistic conception of immune selfhood that has remained entrenched in immunology ever since Burnet (Tauber, 2008a). Rather than the science of SNS discrimination, immunology may then be perhaps regarded more appropriately as a science of self-organisation. Recalling my discussion of Barad in the previous chapter, where I argued that matter acquires form and becomes meaningful only through the actualisation of different agential intra-actions, it is clear then that there is much resonance between agential realism and Tauber's ecological immunology, which conceives of the immune system in terms of an ongoing active process that establishes the very identity of the organism in question by defining that which must be identified (Gilbert & Tauber, 2016). For Barad, there is ontological indeterminacy; for Tauber, there is subject-object fuzziness (2000). For both, no microbe is inherently pathogenic and distinctions between self/non-self do not exist as such apart from

their intra-action. We can see thus that there are compelling reasons, both theoretical and scientific for taking the question of organismic identity as something that is enacted and not given.

The tolerance of 'foreign' entities is however, not only a normal part of an organism's 'housekeeping', it is also vitally crucial to its evolution and development. Development is a multispecies affair, a matter of interspecies communication (Gilbert, Sapp, & Tauber, 2012). For example, microbes play a crucial part in the co-development of the immune system and other tissues (Rhee, Sethupathi, Driks, Lanning, & Knight, 2004), such as T-cells (Duan, Chung, Troy, & Kasper, 2010) and B-cells (Lanning, Rhee, & Knight, 2005; Wesemann, 2015). If the immune system has been traditionally thought of as a defensive system that protects self from non-self, then what new research makes apparent is that in an ironic inversion of events, an individual's immune system is actually co-created with resident microbial 'others'. In other words, 'self' and 'non-self' intra-act to produce immune systems; rather than strict divisions as per the SNS model, what is perhaps more appropriate is 'immuno-cosmopolitanism', where immunity is understood as not only 'reliant on productive relations and amicable coexistence with the other' (M. Davis et al., 2016, p. 135) but also framed as a 'science and politics of creative, productive relations of self and other' (ibid., p. 48). Human and microbes are irrevocably entangled and have co-evolved to live in symbiosis as one thinker so succinctly summarises (Lingis, 2000, p. 27):

> *Human animals live in symbiosis with thousands of species of anaerobic bacteria, six hundred species in our mouths that neutralize the toxins all plants produce to ward off their enemies, four hundred species in our intestines, without which we could not digest and absorb the food we ingest. Some synthesize vitamins, others produce polysaccharides or sugars our bodies need. The number of microbes that colonize our bodies exceeds the number of cells in our bodies by up to a hundredfold. They replicate with their own DNA and RNA and not ours. Macrophages in our bloodstream hunt and devour trillions of bacteria and viruses entering our porous bodies continually: they are the agents that maintain our borders.*

Many insects have also evolved in a way that they have 'lost' the ability to synthesis certain amino acids, outsourcing and relying on their bacterial symbionts for the production of these amino acids instead (McCutcheon & Von Dohlen, 2011). The development of the light organ in the squid *Euprymna scolopes* is also dependent on the absorption of the luminescent bacteria, *Vibrio fisheri*, by its ventral epithelium; in the absence of the bacteria, the light organ in the squid does not develop (McFall-Ngai, Heath-Heckman, Gillette, Peyer, & Harvie, 2012). Similarly, the entity we refer to as a cow is unable to digest grass and hay on its own – they rely on a diverse community of cellulose-digesting bacteria, anaerobic fungi and ciliated protists for their digestion ability (Kamra, 2005; Matthews et al., 2019). This complex ecosystem of gut

symbionts in the cow defines not only its plant-digesting physiology, but also 'regulates its behaviours, and ultimately determines its evolution' (Gilbert et al., 2012, p. 327).

Symbiosis is now 'a core principle of contemporary biology, and it is replacing an essentialist conception of 'individuality' … lead[ing] us into directions that transcend the self/non-self, subject/object dichotomies that have characterised Western thought' (Gilbert et al., 2012, p. 326). Prevailing ideas around the autonomous self are thus being revised not only in immunology, but in the whole field of biology as well. No longer framed as the 'study of particulate, interacting, living entities'(ibid.), biology increasingly appreciates 'individual' animals as (Gilbert & Tauber, 2016, p. 841):

> *… organised consortia of hundreds of species living in a symbiotic commune. What had been previously described as ''individual organisms'' are, in fact, multispecies/ multi-lineage 'holobionts,' composite organisms, whose physiology is a co-metabolism between the host and its microbiome, whose development is predicated upon signals derived from these commensal microorganisms, whose phenotype is predicated on microbial as well as host genes, and whose immune system recognizes these particular microbes as part of its 'self'.*

The term holobiont, first introduced by Lynn Margulis (1991), an evolutionary theorist and biologist, initially referred to 'a simple biological entity involving a host and a single inherited symbiont' (Simon, Marchesi, Mougel, & Selosse, 2019, p. 1). However, amidst the proliferation of studies on the microbiome, the term 'holobiont is now generally used to mean every macrobe and its numerous microbial associates' (Bordenstein & Theis, 2015, p. 1). Simply put then, no organism is an autonomous entity; they are all holobionts, comprised of host elements and their populations of symbionts (see Douglas, 2015; Jeffrey, Knowlton, Relman, Rohwer, & Youle, 2013; Margulis, 1993; Rohwer, Seguritan, Azam, & Knowlton, 2002). Strictly speaking, the concept of the holobiont is not new: for example, the lichen, a composite organism formed by algae and fungi was reported as early as in the 1800s (Egerton, 2015). As one paper explains (Gilbert et al., 2012, p. 326):

> *This reorientation is not new for the microbial or botanical sciences. In the world of protists, hereditary symbiosis, the inheritance of acquired symbionts is legion. In the microbial world, 'you are what you eat' can be taken literally. In botanical science, the concept of the autonomous individual has also been challenged by discoveries concerning rhizobia, mycorrhizae, and endocytic fungae. Nonetheless, zoologists long subscribed to a more individualist conception of the organism … [but the] discovery of symbiosis throughout the animal kingdom is fundamentally transforming the classical conception of an insular individuality into one in which interactive relationships among species blurs the boundaries of the organism and obscures the notion of essential identity.*

What might be said to be 'new' about the holobiont concept however, is the realisation of the extent of the 'ubiquitous nature of host-associated microbes and their central role in host biology, ecology, and evolution' (Simon et al., 2019, p. 2). By shifting biological notions of agency 'from independent entities to complex cooperative collectives' (Gilbert & Tauber, 2016, p. 845), agency from the perspective of the holobiont is non-anthropocentric and thus markedly similar to the posthuman notion of agency discussed via Barad in the previous chapter.

3.2 Health, anthropocentrism and *Homo microbis*

This ecological shift in the biological sciences is also paralleled by a similar turn to the 'non-human' in the social sciences and humanities, and can be seen more specifically in the work of scholars affiliated with philosophical Posthumanism and other related and cognate fields such as human-animal studies, political ecology, new materialisms and multispecies ethnography. Focusing on human entanglements and dependencies with insects (Beisel et al., 2013; Raffles, 2010), dogs (Haraway, 2008; Kohn, 2007), meerkats (Candea, 2010), forests (Kohn, 2013), plants (Hustak & Myers, 2012), H5N1 (Lowe, 2010), highly pathogenic avian influenza (Porter, 2012) and matsutake mushrooms (Tsing, 2015), these scholars have interrogated anthropocentrism by illustrating the myriad of ways in which the world we inhabit and what we are, only comes-into-being through multispecies engagements. Anthropologist and multispecies scholar, Stefan Helmreich (2014), proposes thus that the human, *Homo sapien,* be reconceptualised as *Homo microbis*, a fleshy assemblage co-produced with and through messy entanglements with our more-than-human microbial companions whom we share the world with. Like the holobiont, *Homo microbis* serves to remind us that the human is always already entangled with our more-than-human companions. Not only are microbes central to the maintenance of the human body (Turney, 2015), they are also responsible for the continued functioning of our endocrine, metabolic and immune system (Gill et al., 2006; Relman, 2015) and may also have a hand in shaping our mood and mental health (Smith, 2015). Changes in the composition of gut microbiota have also been found to influence normal physiology and be implicated in obesity, autism and multiple sclerosis (Cryan & Dinan, 2012) as well as the development of a pre-disease state, in which one becomes more susceptible to chronic diseases (van de Guchte, Blottière, & Doré, 2018). Social behaviour in mammals may have also potentially co-evolved with their microbiomes (Stilling, Bordenstein, Dinan, & Cryan, 2014). Thus, in addition to playing a vital role in the co-creation of the immune system and other tissues in the human body as discussed earlier, microbes also actively participate in the construction of our lived experience – and ultimately, human life, as we know it. The very processes that define what it means to be human are thus also processes dependent on the 'corporeal generosity' (Diprose, 2002) of our microbial partners. Nothing stands alone (Molotch, 2003) and it is as Anna Tsing (2012) opines, that human nature cannot be but an interspecies relationship (see also Haraway, 2008). As a corporeality that only

comes into being relative to other multispecies assemblages, humans only 'become who we are in the company of other beings; we are not alone' (D. B. Rose, 2011, p. 11). There is so much more to learn about ourselves once we start to make the effort to 'fully appreciate and extensively explore our multiple and complex interrelationships with other organisms through time and space' (Singer, 2014, p. 1283).

This shift in the biological sciences, social sciences and humanities towards an ecological format that endorses inclusion, tolerance and cooperative relations instead of strict separations between objects and subjects, has had a profound impact on the way biomedicine understands health and relatedly, how we practice human-microbial relationality. This should hardly be surprising: the practice of 'traditional Chinese medicine, Ayurvedic medicine' and even humoral medicine illustrate how, historically, different 'ways of imagining humanness [have] lead to other models of care and treatment' (E. Cohen, 2008b, p. 98). There is a general 'microbiomania' (Helmreich, 2015) that has gripped popular science and a wave of 'new' microbiopolitical practices such as helminth (i.e. hookworms) therapy (Lorimer, 2016, 2017, 2019), birth canal bacterial colonisation for babies born by caesarean section (Houf, 2017; Molloy, 2015) and faecal matter transplants (Beck, 2019; McLeod et al., 2019; Wolf-Meyer, 2017) are now proliferating. These nascent practices 'involve careful processes of "controlled decontrolling"' where micro-organisms are used 'to reorganise ecologies to secure desired systemic properties' (Lorimer, 2016, p. 58). Deliberately aimed at entangling human and micro-organisms to reengineer internal ecologies for therapeutic ends, these practices are underpinned by the aforementioned recognition that 'biological organisms maintain themselves not through a radical closure to everything that is not-self but through constant dynamic exchanges of – and negotiations with – foreign substances and bodies that cross into it from the outside' (Florencio, 2019, p. 44). Relatedly, these practices are 'driving a fundamental reappraisal of the prevalent negative associations of microbes' (Lorimer, 2019, p. 61). Our corporeal boundaries are indeed demarcated and guarded, but they must also always remain open to renegotiation if we are to survive and flourish in this world. If biomedicine previously understood health as *immunitas* – as a Pasteurian project of ensuring microbial absence and the enclosure of the organism – then what this corporeal porosity compels us to recognise is that health is not simply *immunitas.* But neither is it solely *communitas*. Rather, health inheres in the constant oscillation between both *immunitas* and *communitas*. From this perspective, no microbe is 'intrinsically healthy or unhealthy; instead, they are contributors to the becoming or retraction of health' (Andrews, 2018, p. 5). In this way, biomedicine now increasingly conceives of health as a post-Pasteurian achievement dependent on the careful curation of our encounters with microbes. As multispecies scholar, Jamie Lorimer notes (2019, p. 62):

> *In some parts of the world, the focus of health care is beginning to shift from wholesale microbial eradication toward differentiating microbial agencies and curating encounters with beneficial microbes. There is a probiotic turn underway here, which encompasses a growing*

> *interest in finding ways of managing human microbial composition and colonization by modulating life course infection pathways and intensities.*

Lorimer argues that this biomedical shift towards a post-Pasteurian notion of health is what drives microbioplitcal practices such as the helminth therapy he studies: the use of hookworms for therapeutic purposes illustrates precisely both the 'communal and immunitarian characteristics of contemporary biomedicine' (2016, p. 59). Post-Pasteurianism, as Paxson reminds us, 'takes after Pasteurianism in taking hygiene seriously. It differs in being more discriminating' (2014, p. 118). Biomedical health, in its post-Pasteurian form can be linked to the popular 'biome depletion' hypothesis (Rook, 2009) on health, which Lorimer explains as such (2019, p. 66):

> *While agreeing that the developing human body can be threatened by microbial infection, it argues that the vast majority of the human microbiome is benign or beneficial. Graham Rook and others suggest that from birth the body and the immune system are also enabled and calibrated by encounters with microbes. In particular, they argue for the salutatory role played by a small number of microbial "old friends." These are microbes with which humans originally co-evolved that can be differentiated from undesirable "crowd infections" (like typhoid or cholera) that emerged after the agricultural revolution and subsequent urbanization.*

What the 'biome depletion' hypothesis makes clear is that even if these new practices of human-microbial relationality might be said to be inspired by the increasing recognition that bodily boundaries are porous, more specifically speaking, they are actually driven by a revised notion of biomedical health which acknowledges that microbial presence can be beneficial (i.e. bad health is linked to microbial dysbiosis which may arise in situations of abundance and/or absence). We thus curate our encounters with microbes based on the health-value they provide. It is precisely because these 'missing microbes' (Blaser, 2014) are now understood to be related to 'epidemics of absence' (Velasquez-Manoff, 2012) that the microbe, which was once feared as universally pathogenic, is now ascribed a central role 'in the performance and maintenance of a healthy body' (Lorimer, 2016, p. 58). With the recognition that no microbe is inherently pathogenic, we are increasingly renouncing our faith and attachment to the microbiopolitical evaluation of microbes as universally 'negative' to consider how the microbe may indeed be multiple. In other words, it is precisely this shift away from an essentialist view of microbes that facilitates the post-Pasteurian probing of the contexts and relations within and with which a microbe might perform a specific (un)desirable function; this in turn feeds the 'microbiomania' around understanding how certain microbial actions might be encouraged or discouraged. Not simply 'bad' nor merely 'good', here we see how the microbe's organismic identity is the outcome of a process of intra-action between different bodies (microbial and human), post-

Pasteurian notions of health, biomedical scientific research and the lived experience of the human-microbial assemblage.

Tending to the different kinds of human-microbial relationalities that are emerging as a result of a renewed biomedical understanding that some microbial life have the potential in the right circumstances to enhance health is important, for it illustrates once again 'the irreducible link between the production of knowledge and the production of existence' (Stengers, 2000, p. 148). If in the previous chapter I highlighted how ideas in classical SNS immunological theory enacts microbes as 'bad' and pathogenic, both immunologically and socially, here we see how owing to this ecological shift in the biomedical sciences, some microbes are now brought-into-being as more-than-pathogenic because scientific research has found them to be central to the performance and maintenance of a healthy body. Notions of health, biomedical knowledge, practices of human-microbial relationality and the organismic identities of microbe and human are thus entangled in a process of mutual co-constitution. However, even if biomedicine is now willing to rethink its Pasteurian microbiopolitics, as I argued in the previous chapter, it remains crucial that social science research continues to refuse to give the final say on which microbes are 'good' or 'bad' to biomedicine if it is to prevent itself from playing the role of handmaiden once again. The microbe is indeed multiple, and this possibility of excess persists, even if the biological sciences in its new ecological format do not recognise the microbe in question as having a certain organismic identity. Indeed, it is the insistence on this possibility of excess that empowers the social scientist to always make a difference to the way in which we think about HIV.

While the ecological 'turn' in the biological sciences is useful in helping us contend with the ontological excess I discussed in the previous chapter (i.e. whether microbes can be more than just 'bad'), it also raises questions regarding the fate of those microbes (e.g. HIV) that do not necessarily become 'good' in this post-Pasteurian framework. Here, the crux of the issue relates to the manner in which the revision of our Manichaean view of microbes (i.e. we good, they evil) conducted thus far remains tethered (and thus limited) to how biomedicine understands microbes as being beneficial (or detrimental) to human health. Hence, even as these new practices of human-microbial relationality enact microbes as desirable, they continue to do so along biological axes and remain resolutely anthropocentric in that they are 'firmly targeted at securing the human — with varying normative connotations — in the face of the vulnerabilities of microbial presence and absence' (Lorimer, 2016, pp. 71–72). In this way, for all their differences, the immunological (see chapter two) and ecological doing of human-microbial relations might be said to be similar insofar as they are both committed to the health (albeit differently understood) of the human subject. Health, now conceived by biomedicine in a post-Pasteurian manner, thus becomes the ultimate arbiter of whether a microbe may be microbiopolitically (re)enacted as more than just 'bad'. In other words, the revision of human-microbial relationality I have laid out thus far must be viewed in relation not

only with the proliferation of new microbiopolitical practices such as helminth therapy, but also with the microbe in question having some sort of biological benefit for the human. Alice Beck makes a similar point, noting that even as the use of probiotics help to challenge a binary understanding of 'microbial life as either an "old friend" or an enemy' (2019, p. 4) by developing this dichotomy such that some microbes are seen as 'good', this is still done within an immunity discourse and is dependent on probiotics 'acting as an alternative form of "increasing" the body's protection' (ibid., p. 10). The microbe may indeed be enacted as more-than-bad by our health-seeking post-Pasteurian practices, but it hinges on the microbe being able to offer some modicum of health to *anthropos* in the first place.

In other words, even though Pasteurianism and post-Pasteurianism differ in their understanding of what it means for a human to be healthy (i.e. in their idealised conception of the body, how it should function and its relation to its 'outside'), because they both share a commitment to human health, it can also be discerned that what fundamentally striates them is a kind of paradigmatic anthropocentrism. Before I can specify what this paradigmatic anthropocentrism is however, because anthropocentrism is such 'a vague and perhaps in some ways misused term, meaning literally just human-centeredness … [and] things can be human-centered in all sorts of ways' (Kopnina, Washington, Taylor, & Piccolo, 2018, p. 113), it will be useful to clarify precisely what I mean by anthropocentrism. To do so, I draw on the work of scholars (Callicott, 2013; Hayward, 1997; Keller, 2010; Kopnina et al., 2018; Minteer, 2009) who have developed careful distinctions between different types of anthropocentrism and in particular, Ben Mylius's paper which argues for three different kinds of anthropocentrism (2018, p. 159):

1. *Perceptual anthropocentrism (which characterizes paradigms informed by sense-data from human sensory organs);*

2. *Descriptive anthropocentrism (which characterizes paradigms that begin from, centre upon, or are ordered around Homo sapiens / 'the human')*

3. *Normative anthropocentrism (which characterizes paradigms that constrain inquiry in a way that somehow privileges Homo sapiens / 'the human' [passive normative anthropocentrism]; and which characterizes paradigms that make assumptions or assertions about the superiority of Homo sapiens, its capacities, the primacy of its values, its position in the universe, and/or make prescriptions based on these assertions and assumptions [active normative anthropocentrism]).*

Based on the definitions above, it should be fairly clear that both Pasteurianism and post-Pasteurianism, and this thesis, operate from a descriptively anthropocentric standpoint. They are all also perceptually anthropocentric, since 'no paradigm can be based upon anything other than sense-data that a human being

has received through their sensory organs, whether directly or indirectly' (ibid., p. 167). The usefulness of Mylius's definitions lie, however, not merely in their ability to help us name the different kinds of anthropocentrism at play, but also in the fact that by dint of the act of naming, attention can also be called to how different types of anthropocentrism relate to each other. More specifically, it reminds us that descriptive and normative anthropocentrisms are analytically separable: one can adopt a human-centred paradigm without necessarily asserting the primacy of the human. As Mylius explains (ibid., p. 169):

> *… descriptive anthropocentrism involves some form of 'centeredness-upon-humans' that is not a moral centeredness, but is rather a 'centeredness' of starting-point, or frame-of-reference, or choice of scope conditions. This descriptive centeredness coexists with, but is distinct from, both passively and actively normative centeredness.*

In addition to being descriptively anthropocentric then, I want to suggest that what also enjoins both Pasteurianism and post-Pasteurianism is a normative anthropocentrism that insists on the privileging the self-maintenance and/or preservation of the human organism. It is this commitment to the preservation of the human organism that constitutes the paradigmatic (normative) anthropocentrism striating both Pasteurianism and post-Pasteurianism that I referred to above. Claire Colebrook neatly summarises the gist of what I am suggesting here by asking in her brilliant book, *Death of the PostHuman*, the following (2014, pp. 203–204):

> *How is it that humanity defines itself as that being that inevitably chooses life, and yet has done so by saving only its own life?*

Similarly, philosopher Val Plumwood also opines: exceptionalised 'as both species and individuals, we humans cannot be positioned in the food chain in the same way as other animals … Human Exceptionalism positions us as the eaters of others who are never themselves eaten' (2008, p. 324). The issue here, as I see it, is that for so long as our epistemic frameworks remain committed to the preservation of the human organism, what also emerges is a kind of conservatism that obscures and obstructs the bringing-into-being of other ways of living that may not necessarily share the same kind of commitment to the perdurance of the human. In other words, this normative anthropocentrism both facilitates and constrains the way we think, use and act with our bodies. Or as Colebrook poignantly states, so 'long as we calculate the future as one of sustaining, maintaining, adapting and rendering ourselves viable, the future will differ only in degree' (2014, p. 58). Certainly, this conservatism may not hinder humans from forming new relationalities with microbes that offer some sort of biological benefit to them, but the issue becomes particularly pronounced in the context of pathogenic microbes like HIV, since practices that aim deliberately at the entanglement of human and HIV *for therapeutic ends* (i.e. the securing of the human subject) do not exist.

For those microbes which remain solely pathogenic within this post-Pasteurian framework, taking seriously the idea that the microbe is indeed multiple (Mol, 2002) will require a different response of us as multispecies scholars: it requires that we focus not exclusively on health-seeking practices and also those which do not aim directly at the absence of disease or even the avoidance of death. There is an opportunity here, if we are willing to extend our concerns of how to live with HIV in ways that eschew the self-preservation of the human organism to explore other forms of human-HIV relationalities. Through the use of empirical examples in chapters 4 and 5, I will illustrate how de-privileging the self-preservation of the human organism need not be equated with being suicidal and in this way, also make an initial foray into how human foodiness might relate to finitude, birth, death and life.

In questioning the commitment to the preservation of the human organism, my aim, as I have stated in the introduction of this thesis, is not to advocate for the death of the human. Rather, the goal here is twofold: firstly, to hold open the space between descriptive and normative anthropocentrism to facilitate the development of a sensitivity that will attune us to the novel lifeforms, relationalities and modes of life that emerge when the perdurance of the human organism is not taken for granted; and secondly, to let our encounters with these unfamiliar experiences make a difference to the way we think futurity, birth, death and life. While my non-commitment to the primacy and preservation of the human organism may certainly be taken to be (normatively) non-anthropocentric, this is ultimately a strategic move that is at once also (descriptively) anthropocentric, since my analysis remains centred around the human – now tempered, of course, by an interest in expanding the possibilities of what it means to be 'human'. Relatedly, the fracturing of the oft-assumed continuity between descriptive anthropocentrism and normative anthropocentrism effected by my questioning of the primacy of the preservation of the human organism also allows me to present the relationship between the life of *anthropos* and the life of its microbial milieu as a question for investigation. *While our microbial milieu is certainly that which nourishes us, what new modes of thinking and being might emerge when we start to think of and use our material bodies as the gestational milieu from which other more-than-human lives and modes of life may develop? What might it mean to ask the difficult question of what is the value of human life not only for humans, but also for life?* This question becomes all the more pertinent when we recall the relational ontology I sketched out in chapter two: if relations precede relata, then might it not also be necessary to 'redefine life beyond its bounded forms, and beyond organic notions of self-maintenance' (Colebrook, 2014, p. 217)? How then, might a 'more fluid and embodied concept of self and its boundaries' be employed in the service of a 'complex narrative of continuities, in which the story goes on, although no longer mainly a story about human subjects' (Plumwood, 2008, p. 328)?

Hence, while I take guidance from broader multispecies literature on how health and disease are 'multispecies conditions configured by specific socio-ecological 'situations'' (Lorimer, 2017, p. 2) and

relatedly, the importance of tending to the different kinds of human-microbial relationalities that are emerging as a result of a renewed biomedical understanding that some microbial life have the potential in the right circumstances to enhance health, I also depart radically from such research in that the remainder of the thesis will be concerned with practices that do not directly aspire towards the self-preservation of the human. This is not necessarily the main focus of the multispecies research I discussed earlier, since they tend to be more interested in exploring how we are rearranging our microbiopolitical practices given that we now recognise microbes as essential for good health. To this end, in the next two chapters I will tell multispecies stories regarding what might be taken as 'atypical' ways of 'living with' HIV. The aim here is to show empirically how a multiplicity of bodies (HIV and human) are brought-into-being so as to respond to the question of human/non-human organismic identity not as a given, but as something to be explored. By analysing these novel human-technological-microbial entanglements, I will illustrate how bodies are differentially produced. As it shall become clear in the next chapter, because how HIV is enacted depends on a range of other factors that individuals negotiate constantly in their lives, the bringing-into-being of HIV-as-enemy can and does sit alongside other more 'positive' enactments of HIV. Following Mol's lead, I will thus also attempt to demonstrate how, despite there being tensions between these differently enacted HIVs, these various versions of HIV do depend and lean on one another for their existence (2002). Make no mistake, these are not comfortable, easy, feel-good stories; they are stories of fragility and precarity, conveying not only pain and loss, but also much suffering and death. These stories are indeed difficult to stomach, yet, the hope here is that by telling these multispecies stories in a way that 'are just big enough to gather up the complexities and keep the edges open and greedy for surprising new and old connections' (Haraway, 2015, p. 160), it will be possible to let the (painful) lived experiences of the Los Frikis and the bugchasers make a difference to how I think-do human-microbial relations. I choose thus, to do research not as a matter of determining how best to achieve a certain outcome (e.g. reduce HIV transmission) but to approach 'current thinking and sexual practice in order to decipher possibilities for where and how change' might be needed (Rosengarten & Murphy, 2019, p. 4). By speculatively experimenting 'with problems not in order to find their "true" solution, but to enable them to enable us to impregnate the world with new differences' (Savransky, 2019, p. 16), *how else might we then pose the problem of HIV, if not immunologically?*

4. *Los Frikis*

In the previous section, I showed how owing to a shift in the biological sciences towards an ecological format, some microbes are now increasingly sought after – subsequently, these new practices of human-microbial relationality then enact these specific microbes as more-then-pathogenic. However, in so far as the revision of our Manichaean view of microbes remains coupled to a post-Pasteurian notion of health, microbes such as HIV which do not contribute in any way to the self-maintenance of the human subject will necessarily remain excluded and continue to be seen only as enemy. In this chapter therefore, I want to turn my attention away from post-Pasteurian health-seeking practices towards other practices of human-microbial relationality that do not aim directly at the absence of disease, so as to examine the ways in which HIV is brought-into-being as desirable outside a post-Pasteurian framework. To this end, this section will be focused on examining HIV autoinfection, as practiced by the Los Frikis. Inspired by Tuck's call for more 'desire-centred' research, these sections will examine the loss, despair, hopes and wisdoms of these individuals and their collectives as a means of understanding how HIV is enacted multiply.

4.1 *Cuba's approach to the HIV/AIDS epidemic*

In chapter 1, I mentioned how in the history of the HIV/AIDS epidemic, Cuba stands out for its adoption of a fully 'classical' Public Health approach which included routine testing, contact tracing, partner notification, medical surveillance and most controversially, a policy of forcible quarantine of all HIV seropositive individuals to sanatoriums (Bayer & Healton, 1989). Building upon that brief discussion, I want now to examine the historical, social and economic forces that shaped Cuba's HIV/AIDS containment effort. This will be important for understanding not only the evolution of the HIV/AIDS epidemic in Cuba, but also the context in which the Los Frikis practiced HIV autoinfection. In her book on Cuban health politics, *Healing the Masses*, Julie Feinsilver argues that Fidel Castro placed a large importance on developing Cuba's healthcare system because he took it to be a key field of political struggle. Measuring Cuba's 'success in terms of how the United States perceived it' (Smallman, 2007, p. 37), Castro thus saw his country's becoming of a 'world medical power' as a means of obtaining the symbolic upper hand over the United States. As Feinsilver writes (1993, p. 22):

> *The central metaphor of Cuba's anti-imperialist struggle … is that of health. The health of the individual is a metaphor for and symbol for the health of the "body politic," and in which the achievement of the status of "world medical power" is synonymous with victory over the imperialists. Medical doctors are the protagonists in this war both at home and abroad. They are warriors in the battle against disease, which is largely considered a legacy of imperialism and*

underdevelopment. Cuba, a David fighting Goliath (the United States), seeks to slay the giant in the battle for international prestige in health care.

With this symbolic politics in mind, it is not hard then, as Smallman argues, 'to understand the capital and energy that Cuba has poured into health care' (2007, p. 38). Summarising the remarkable achievements Cuba made in the realm of healthcare, he remarks (ibid.):

Despite immense challenges, including the early flight of nearly half of Cuba's doctors after the revolution, Cuba has managed to create an integrated national health plan that provides a high level of service for free to all Cubans. No rural area in Cuba is too remote for patients to receive care. Cuba eliminated many infectious diseases, such as polio, and its immunisation rates were good even for the First World. Cuba's life expectancy and infant mortality rates also compared favourably with those of many developed countries. … Cuba also created an impressive research establishment, and it counted on biomedical exports to create much needed hard currency.

Cuba's desire to use healthcare as a means of competing politically with the United States meant that the emergence of the HIV/AIDS epidemic also simultaneously created a new battlefront on which the former would use to prove its superiority over the latter. This is a point echoed by Bayer and Healton, stating in their paper that Cuba's HIV/AIDS control programme was indeed viewed by Cuban health officials 'as an extension of the postrevolutionary health care system' (1989, p. 1022), which as established above, was a visible source of pride and accomplishment for the Cuban socialist regime. In the early stages of the epidemic in Cuba, AIDS was predominantly seen as 'a U.S. and gay disease' (ibid.):

It [AIDS] served as a symbol for weaknesses of U.S. society and was seen to represent the social breakdown, lack of family unity, frequent drug use, and poor moral values of the American people. Accordingly, AIDS became a powerful symbol to counter the political power of the United States and to warn against the cultural dangers posed by American beliefs.

As history reminds us, blaming the 'Other' for disease and epidemics is hardly new. What is noteworthy however, is Castro's utilisation of this 'othering' of AIDS to denounce imperialist America. AIDS thus becomes thoroughly entangled with the Cuban-American political struggle, with Castro adopting 'an offensive posture pointing to the United States as the main propagator of the virus' (Perez, 2016, p. 38), polemically asking in a September 1988 speech (Leiner, 1994, p. 131):

Who brought AIDS to Latin America? Who was the great AIDS vector in the Third World? Why are there countries like the Dominican Republic, with 40,000 carriers of the virus, and Haiti, and other

> *countries of South and Central America—high rates in Mexico and Brazil and other countries? Who brought it? The United States, that's a fact.*

As a test through which Cuba could 'demonstrate its superiority over wealthier governments', Cuba's response to contain the HIV/AIDS epidemic was nothing short of zealous (Smallman, 2007, p. 39). There was a strict ban on the import of blood products for example, and all existing imported blood in the country – 22,000 containers – were destroyed, even though this came at great monetary cost to Cuba (ibid.). Laboratories were also constructed for diagnosis and tests were developed to identify the virus (Perez, 2016). Mandatory HIV testing was introduced in 1986 (Prout, 1999) and by 1991, almost the entire population of Cuba had been tested for HIV (Leiner, 1994). Those who tested positive were sent to *sidatorios*, or sanatoriums – this was, as mentioned previously, one of the most controversial aspects of Cuba's approach to HIV/AIDS containment – where they were subsequently also asked to identify the names of those whom they had sexual contact with for further contract tracing and testing. *Los Cocos* in Santiago de las Vega was the first sanatorium to be constructed in 1986 and while it was 'the largest and most important sanatorium in Cuba' (Smallman, 2007, p. 40), to accommodate all of Cuba's *siderosos* – the term used to refer to both HIV-positive individuals and persons living with AIDS – a total of 12 sanatoriums were built by 1994 (Prout, 1999). It is important to note here that in referring to both individuals infected with HIV and persons suffering from AIDS, what the term *siderosos* does is to effectively erase any distinction between the two, a point Marvin Leiner also highlights in his important book on Cuban sexual politics (1994, p. 132):

> *There is general ignorance about the difference between someone with AIDS and someone who has tested HIV-positive but is nevertheless a healthy person, who may never become ill with an AIDS-related disease. The quarantine does nothing to diminish this ignorance; in fact, the [Cuban] press often refers to sanatorium residents as 'AIDS Patients'.*

In other words, because all HIV-positive individuals must be quarantined regardless of their state of health (i.e. even if they do not have AIDS), HIV-positive individuals who are otherwise healthy are effectively condemned to lead 'isolated non-productive lives until they contract AIDS' (ibid., p. 118). These individuals essentially live in a state of limbo with no clear date of release (except perhaps upon death), and as Prout argues, it is entirely probable 'that there are currently in Cuba those who have spent a number of years of good health within the confines of a *sidatorio*' (1999, p. 425). While Cuba's policy of forcibly quarantining otherwise healthy HIV-positive individuals understandably drew much international criticism owing to human rights concerns, some scholars have complicated any straightforward understanding of these sanatoriums by pointing out that those residing in these sanatoriums not only 'received free medical care, access to medications, additional food rations' and education (Smallman, 2007, p. 40), but that their living

conditions were also better than those available to Cubans living outside (Scheper-Hughes, 2020). The salaries of these *siderosos* were also 'maintained by the government to protect their economic security and that of their families' (Bayer & Healton, 1989, p. 1023). It is hardly surprising then, that renowned anthropologist Nancy Scheper-Hughes has referred to these sanatoriums as 'the best of Cuban social and socialist medicine' (2020, p. 23). Writing about her multiple visits to these sanatoriums in 1990, 1991, 1994 and 2000, she notes how (ibid.):

> *Los Cocos was neither a hospital nor a prison. Nor was it anything like we might call a sanatorium – a closed and isolated place where sick people suffering from tuberculosis or other respiratory and highly contagious diseases are kept in medical quarantine. The sanatorium at Los Cocos was a blend of scientific data gathering of epidemiological statistics, AIDS research and intensive medical and psychological care and treatment for all the patients.*

Scheper-Hughes also speaks kindly of her encounters with the medical director of *Los Cocos*, Jorge Perez, highlighting how he 'wanted to know all the patients as individuals, and [that] he spent most of his days walking and talking with the clients and asking them what changes were needed to enrich their lives' (ibid.). It was this trust that was established between doctor and patient that subsequently helped with the collaborative making of changes to life in the sanatoriums 'to fit people's basic needs: more freedom, paid work, music, sports and the right to safe sex' (ibid.). In a perverse twist of events, the quarantine of HIV-positive Cubans also afforded them protection against HIV/AIDS-related stigma – achieved precisely because of their removal from society. HIV-positive individuals had the choice of deciding whether or not to disclose their serostatus to those around them upon admission to the sanatoriums (Smallman, 2007). As one paper explains (Santana, Faas, & Wald, 1994, p. 185):

> *For persons who do not want to inform others, health officials provide elaborate and apparently effective alibis so that the persons' absence from their jobs and neighbourhoods is not attributed to their HIV status.*

However, the shielding of HIV-positive Cubans from HIV/AIDS-related discrimination could also be argued to be a Pyrrhic victory, not only because it was achieved on the basis of social exclusion, but also because the rendering of these HIV-positive Cubans as socially invisible also prevented their participation in broader discussions involving Cuban HIV/AIDS policy. This meant that ultimately, it was Castro's government that had the sole privilege of defining Cuba's response to the epidemic. As Smallman (2007) notes, this lack of a national discussion around HIV/AIDS in Cuba might have hindered the fostering of greater public awareness of HIV in the country, which ironically, is a different (and now commonly practiced) and more inclusive means of addressing HIV/AIDS-related stigma.

Even as we acknowledge the traditional portrayal of Cuba's sanatoriums as authoritarian institutions complicit in the infringement of the WHO's resolution against HIV-related discrimination, as the foregoing discussion makes clear, these *sidatorios* also serve as places of care for the HIV-positive individual, be it through the provision of better living standards or HIV/AIDS-related stigma shielding. Yet, the introduction of quarantine by the state, and compliance with it by the people, must both be understood as inseparable from the politics of maintaining and nurturing a socialist Cuban society. In his book, *Cuba: From Conquistador to Castro*, Geoffrey Simons opines a similar view, writing that when it came to HIV/AIDS, ''the Cuban approach has been typically thorough and multi-faceted, marrying the need for individual health care with the necessity to protect the community' (Simons, 1996, p. 31). Recalling my earlier discussion of how the HIV/AIDS epidemic presented itself as an opportunity through which Cuba could demonstrate its superiority, the use of quarantine and its subsequent effectiveness at containing HIV/AIDS was in other words, also a means for Cuba to symbolically 'prove' the viability of the socialist ideology in a political arena that was hostile to it (ibid.). The health of the individual thus becomes tethered to the defence of the Cuban nation-state, and quarantine serves as an act of care aimed at the continuation of socialist Cuba even as/because it targeted HIV-positive Cubans. Simultaneously both a care of and for the HIV-positive individual, but also of and for Cuba's socialist Child, the multiple tensions associated with forcible quarantine illustrated above will thus serve as the backdrop for my discussion of the Los Frikis's practice of HIV autoinfection.

4.2 *HIV autoinfection*

Despite the ethical ambivalence associated with Cuba's unique sanatorium approach to HIV/AIDS containment, many scholars (Bayer & Healton, 1989; Leiner, 1994; Lumsden, 1996; McNeil Jr, 2012a; Smallman, 2007) have been 'forced' to concede the efficacy of Cuba's quarantine approach to HIV/AIDS when faced with 'figures pointing to the extremely low rate of HIV infection in Cuba' (Prout, 1999, p. 427). As one scholar points out, the 'numbers of cases and of deaths in the sanatorium were far fewer per capita than AIDS deaths in New York City and San Francisco' and that in 1993, 'New York, which had roughly the same population as Cuba, had 43,000 cases of AIDS, while Cuba had only 900 validated by the WHO' (Scheper-Hughes, 2020, p. 24). Cuba's success at stemming the spread of HIV in the early days of the epidemic also stands in stark contrast to the struggles and difficulties neighbouring Caribbean countries such as Haiti and Puerto Rico faced in controlling the spread of the virus (Farmer, 1999; Smallman, 2007). Quite understandably then, contemporary discussions pertaining to Cuba in the context of the HIV/AIDS epidemic tends to be focused on examining how the quarantine approach, while problematic in terms of human rights, may still have something to teach us about different approaches to epidemic control; indeed, this is exactly what Scheper-Hughes (2020) explores in her recent paper on Cuba, HIV/AIDS and COVID-19.

Yet, in celebrating the success of quarantine measures in reducing the incidence of HIV infection in Cuba, it is crucial also not to overlook or gloss over the role that these sanatoriums have historically played in *increasing* the number of HIV-positive Cubans due to HIV autoinfection. In one of the few academic papers written specifically on the Los Frikis and HIV autoinfection, Prout argues precisely this, astutely highlighting how:

> *… [what] previously mentioned observers seem to have overlooked in their acknowledgement of the apparent success of the quarantine measures is the possibility that the sidatorios themselves may have been instrumental not in containing HIV infection but in increasing the number of those affected … if Cuba was unique in choosing to approach HIV and AIDS by means of quarantine, it was also unique by virtue of the phenomenon of the self-injectors, those Cubans who knowingly made themselves HIV-positive and who chose to introduce themselves into the confinement of quarantine.*

Prout's 'self-injectors' were members of the Cuban punk rock community: they were known as the *Los Frikis*, a term derived from the Hispanicisation of the word 'freaky' (Astley, 2014, p. 96). Part political protest and part response to a helpless situation, the reasons implicated in the Los Frikis's practice of HIV autoinfection are often varied and numerous, as my discussion below will make clear. Despite this however, two important factors are often emphasised in the literature available on these Cuban punks and their practice of HIV autoinfection. The first relates to the economic situation in Cuba in the 1990s. Following the collapse of the Soviet Union in 1991, Cuba lost both its primary trading partner and major source of aid, ushering in what 'Castro termed "the Special Period in Times of Peace"' (Smallman, 2007, p. 48). The economic decline experienced by Cuba during this time was drastic: between '1990 and 1993 the gross domestic product (GDP) fell by roughly 35 percent, exports by 80 percent, and imports by roughly 75 percent' (Enriquez, 2003, p. 203). The unemployment rate also rose from 7.9% in 1989 to 34% in 1993 (ibid., p. 204). The felt realities of this economic hardship were harsh and one scholar describes it as follows (Smallman, 2007, p. 47):

> *Water was rationed in Havana, and the city began to have rolling blackouts. Oil became difficult to obtain, and food rations were cut so sharply that perhaps 50,000 people suffered in an outbreak of blindness likely caused by a vitamin deficiency. Large numbers of people began to move from the cities to the countryside to become farmers because they lacked jobs and the government ration did not provide enough food … People in the countryside stopped using tractors, for which there was no fuel, and returned to using oxen, while city residents turned from cars to bicycles.*

The economic hardship in Cuba would only become exacerbated with the passing of the Cuban Democracy Act of October 1992, 'which tightened restrictions on U.S. trade to Cuba and prohibited foreign ships from

first calling on Cuba and then the United States'; and later on, also with 'the passage of the Helms-Burton Act in 1996, which enabled foreign companies to be brought to court in the United States if they did business with Cuban entities created from properties that the government expropriated from U.S. owners' (ibid., p. 48). As a result, foreign companies became reluctant to enter into trade with Cuba, further worsening the already dire Cuban economic situation. Given that 'quarantine measures were set in motion when Cuba was still in receipt of plentiful Soviet supplies and there was little or no hint of the forthcoming dissolution of the communist trading bloc' (Prout, 1999, p. 425), it only stands to reason that this new shift in Cuban economic conditions would also precipitate changes in the Cuban approach to HIV/AIDS quarantine. Because it became difficult to maintain the high per capita cost for the sanatoriums ($24,000 a year) in the now impoverished economic climate (Hansen & Groce, 2001, p. 271), in 1992, the restrictions previously associated with the policy of quarantine began to be relaxed and *siderosos* who had been approved after careful vetting by sanatorium staff were now allowed to leave without chaperones (Smallman, 2007). Besides being economically beneficial for the Cuban state, the softening of sanatorium restrictions also helped to assuage the increasing international human rights-based criticisms of the quarantine policy – this too, was important for the Cuban regime to protect and project a progressive image abroad (ibid.).

In light of the poor living conditions and economic hardship experienced by Cubans in the Special Period described above, HIV autoinfection, as a means for the Los Frikis to secure a better life, while shocking, also becomes fathomable. In a now widely circulated interview with the last two surviving members of the Los Frikis in Cuba – Yohandra Cardoso Casas and her partner, Gerson Govea – produced by *Radio Ambulante*, a narrative Spanish language radio show, Gerson says (Radio Ambulante, 2017a):

> *People preferred being sick and coming here [the sanatoriums] over living in the streets. To have it all for free, which was a big influence: that it was free, a gift … There was nothing, there was no food, there was no soap, there was nothing: no cooking oil, no cigars, nothing, absolutely.*

Gerson's point was also echoed in another interview with Vladimir Ceballos, a Friki filmmaker who lived in exile from Cuba after making a documentary on HIV autoinfection. Produced by *Radiolab* (in collaboration with the aforementioned Radio Ambulante), a popular public New York radio program, the interview with Vladimir describes the situation as such (Radiolab, 2015):

> *If you were in the sanatorium, you were fine … just being able to get milk and an egg and beans, that was a big motivation for a lot of kids [to autoinfect].*

Yet, economic lack was not the only factor egging the Los Frikis on to autoinfect. As Megan Bridges (2015) explains in an article on the Cuban punk rock scene published in the Penn Political Review, the term Los Frikis initially 'began as a pejorative term, but it was quickly embraced by punk rockers' as it took on the unspoken meaning of being 'an individual in a collectivist society'. Expressing their individuality in various 'punkish' ways such as growing out their hair, sporting mohawks, wearing outlandish clothes and listening to American rock, punk, or metal music, the Los Frikis were dangerously embroiled in an alternative subculture that went against the conformist norms of Cuban society in the early 1980s and late 1990s (Smallman, 2007). Socialism seeks to breed homogeneity: a popular slogan at the time was 'No puedo ser diferente', or 'I cannot be different' (Prout, 1999, p. 428). Right from the start then, the Los Frikis's conspicuous appearances and tastes have always made them subject to discrimination. However, the persecution of these Cuban punks would intensify following the fall of the Berlin wall in 1989. The fall of the wall and the threat that this posed to Castro's socialist regime meant that the Cuban state subsequently deemed it necessary to clamp down on freedoms of expression and the consumption of American media in order to ensure and promote a more stringent socialist society – as one commentator puts it, suddenly 'music you listened to became very ideological and if you listened to rock, you were listening to the enemy of the Cuban state' (Radiolab, 2015). Yet, despite the state crackdown on the consumption of American music, the Los Frikis found ways to nurture their nascent music scene. As Juan Carlos Torrente, a Los Friki, recounts in an interview (Radio Ambulante, 2017b):

> *If someone came from the United States, they would bring me four cassettes of Testament, Slayer… and then I would be the only one to have them. But without really noticing it, we all understood we had to distribute the music among us.*

The informal exchange of these music cassettes thus brought the Los Frikis together. We might say then, that right from the start, it was this entanglement between the inorganic and the organic that was responsible for the flourishing of Los Friki sociality in a political environment that was hostile to its survival. As one Friki poignantly states, together '[w]e created our own world in there' (Saeed, 2017).

The cracking down on dissident behaviour by leaders of faltering states is a well-trodden path and should hardly be surprising. Indeed, in 1991, at the 4th Congress of the Cuban Communist Party, Castro reaffirmed his 'Socialism or Death' slogan, thus demonstrating not only his resolve to keep Cuba running as a socialist state in the Special Period, but also 'implicitly calling upon his compatriots to be ready to sacrifice themselves for his government's ideal' (Prout, 1999, p. 426). It is possible therefore, to discern from Castro's now famous slogan, that the prescription for any ideological waywardness is death itself. One of the very few films dedicated to the documentation and exploration of the phenomenon of HIV autoinfection in Cuba is (conveniently also called) *Socialism or Death*, a film that Swedish filmmaker Bengt

Norborg and his cameraman, Bo Sands, made covertly in 1995. In it, Vladimir (the very same one from the previously mentioned Radiolab interview) comments on the peculiar relationship between life and death in Castro's Cuba, pointing out (Norborg & Sand, 1995):

> *The problem resides in the fact that for many people in Cuba, life has no value. From childhood onwards, we were taught that death is the same as life.*

It will be useful first to provide some detail regarding Vladimir's background. A year before in 1994, Vladimir too made a documentary on the Los Frikis. Entitled *Maldita Sea Tu Nombre, Libertad* (Cursed Be Your Name, Liberty), the film revolves around Vladimir's interviews with his Friki friends and documents thus, their process of HIV autoinfection and their subsequent thoughts on it. Noting how the film engages with 'descriptions of police brutality and reflections on death', Smallman remarks that the 'film is painful to watch … [and] is especially convincing because the sanatorium patients give their names and describe their life histories in detail' (2007, p. 51). Vladimir was never allowed to show the film in Cuba and after seeking political asylum, moved to the United States. While acknowledging that Vladimir's diagnosis of the relationship between life and death may not necessarily be true for the Cubans he speaks of (even if he has extensive emic knowledge and familiarity with the Los Frikis), his comments are interesting insofar as they act as a lure for speculative thought. By enjoining Vladimir's comments with my earlier discussion of Edelman's reproductive futurism as a springboard for thought, some points subsequently follow. Previously, in chapter two, I highlighted how because our societies and its institutions are structured around reproductive futurism, the image of the Child serves as a kind of disciplinary fetish object, 'an ideological limit on political discourse' which 'invariably shapes the logic within which the political itself must be thought' (Edelman, 2004, p. 2). This rhetoric of the Child, together with what Foucault has called the 'imperative of health' which calls on each and every one of us to do our best in securing our longevity, are all intimately related to propping up the dominant social order – albeit on various levels and in differing ways. Hence, even though prima facie the nonchalant ideological disregard for life that Vladimir speaks about may seem to be at odds with the practice of detaining those whose lives are really at risk (i.e. *siderosos*), this tension may be reconciled if we approach the introduction of quarantine by the state and (to the extent that there is) compliance with it by the people, as inseparable from a broader politics associated with the proliferation of a socialist Cuban society. This unique/inverse reality presented to us by Vladimir, in which life and death are equivalent, also raises additional questions related to the extent to which Cubans might choose to take on the pro-social politics of maintaining and nurturing life in socialist Cuba. It is doubtful that Castro, when reaffirming his 'Socialism or Death' slogan ever intended for death to be a conceivable option for the Cuban people; after all, Castro needed, at least on the population level, for life to be preserved and protected if a socialist Cuban state is to even exist. In this manner, the slogan, while presented in the form of a question, is in fact, more akin to a statement which makes known to the

person who hears it that life under socialism is the only available option. To preserve life is also to prevent death and therein lies the crux of Castro's slogan: death is presumed to be the ultimate limit that one does/may not cross. Stated differently, Socialism or Death, as an 'equation between the condition of life and an absolute quality of life' (Prout, 1999, p. 426) functions as a rhetorical question that rallies support for socialism only if the individual that the slogan is addressed to, agrees that life is more valuable than death – or more specifically, that life under socialism is preferable to death. Because 'death is the same as life' for Vladimir's Cubans however, what was previously a one-sided equation now opens up into one that allows for practices that dabble in the interplay between life/death, thus fomenting the possibility of queer resistance to socialist life by way of acceding to death itself – via HIV autoinfection, for example. By prescribing death as the only site of possible resistance against its socialist dictates, what is ironically contained within Castro's slogan-ultimatum are the very instructions for (im)possible political resistance against a totalitarian regime. In Castro's Cuba, autoinfecting Cubans have effectively become Edelman's queers (2004) because they do not fight for Child. If life and death are indeed equivalent for Vladimir's Cubans, then these Cubans-as-queers become threatening to the substrate of politics (of the Child) itself (Schotten, 2015) because they now come to embody the social order's death drive. It is important to note however, that in acceding to death, one need not necessarily be suicidal. Rather, my focus here is on how the Los Frikis flit between life and death, that is, how they *live by embracing death*. As we shall see shortly, it is in this context that HIV autoinfection, as a practice that simultaneously embraces/negates life/death, allows for the bringing-into-being of other values and enact HIV as otherwise – as more-than-enemy.

A deeper understanding of this possible equivalence between death and life that Vladimir points to may be acquired through further examination of the manner in which the Los Frikis were persecuted for leading the lifestyles they did. Emerging out of and often embraced during times of great crisis (the economic recession in both the UK and the US in the 1970s, for example) punk music, as Torre Pérez reminds us, has always been politically involved given that it is by 'nature a rebellious and anti-establishment statement' (García, 2020). In other words, the crux of punk mentality pertains to its 'oppositional social and ideological stance that constantly criticised mainstream society and practices' (Chronopoulos, 1997, p. 5). It is hardly surprising then that the Los Frikis's embrace of American punk music at the time of a flailing socialism, only served to amplify the anti-authoritarian political danger already associated with their lifestyle, attracting the ire of the Cuban socialist state. Thus, the Los Frikis were subject not only to marginalisation by their closest family and society at large, but also to acts of police brutality. The dire situation that the Los Frikis faced was described as such in the Radiolab interview (Radiolab, 2015):

> *The Government created a police presence in every neighbourhood, every five blocks … if the police found you and you had long hair, they'd beat us, kick us … Send you away to work, putting sugarcane in the cane fields … In school, they'd often cut your hair against your will … it was abuse.*

Describing a similar experience of police abuse in the Radio Ambulante interview, Yohandra shares her experience of how the police would harass her rocker friends and her 'for just hanging out in the street listening to music' and threaten to charge them with 'public endangerment'; for being a 'danger' to society, they could then subsequently face up to four years of jail time (Radio Ambulante, 2017a). With the government, their families and all of society turned against them, the Los Frikis, as Gerson puts it succinctly, would be out 'in the streets starving, with no clothes, no attention, [no] nothing' (ibid.). There was, as Carlos Manuel de Cespedes, a Catholic priest, puts it in *Socialism or Death*, 'simply no space for anyone not incorporating himself within the system' (Norborg & Sand, 1995). Owing to the 'limited identities available to young people in Cuba' at that time, Cespedes notes how despite his best efforts to dissuade these disenchanted youths from HIV autoinfection, his words would often fall on deaf ears 'because they felt that they had nothing to lose by becoming HIV-positive' (Prout, 1999, p. 429). It was in this oppressive climate that the sanatoriums, while acting as prisons, would ironically also come to obtain an allure of their own by offering their inhabitants not only respite from discrimination but also a modicum of treasured freedom. Because the early cases of HIV in Cuba were among returning soldiers, HIV/AIDS was initially treated by the Cuban state as a military matter; relatedly, sanatoriums were administered by the Ministry of Defence up to 1989 (Lumsden, 1996, p. 163). While the sanatoriums were ran like 'gulags' under the military, life in these sanatoriums improved immensely when the Ministry of Health and Medicine took over the task of managing them in the early 1990s. Progressive doctors ran the sanatoriums and they had no problems with the Los Frikis pursuing and immersing themselves in their music as long as it did not interfere with their wellbeing (Radiolab, 2015). Using speakers made from cardboard, drum sets made from x-ray machine materials and electric guitars with telephone wires as strings, the Los Frikis subsequently formed their own punk bands (Bridges, 2015). *Eskoria* (which translates to scum), a band that is widely attributed to be one of the founders of the Cuban punk scene, was in fact, formed in one of these sanatoriums (Radiolab, 2015). In this manner, the sanatoriums became little havens of freedom for the Los Frikis, not only from persecution but also for the expression of individuality. These freedoms were enjoyed not only by the Los Frikis, but also by the queer community. As one commentator notes, even as 'the gay community outside the sanatoriums struggled against violence and discrimination', many also found refuge within its walls (Sananes, 2016). Thus, these sanatoriums became hubs of creativity, with gay men living side by side with the Los Frikis rocking out to their music. The sanatoriums were, as Elena Schwolsky, a nurse working in Los Cocos in the 1990s, says, a place where individuals 'lived openly and without stigma. It was a place where people could really be themselves' (Highleyman, 2020). It will suffice to mention two further examples of the manner in which these sanatoriums served as oases of alternative culture in a socialist society where conforming to norms were paramount. The first relates to the experience of Cuban fashion designer Eduardo Martinez. Sent to the sanatoriums at the height of his career due to his HIV seropositivity, Martinez performed in drag as 'Samantha' during his time in Los Cocos and was even

provided with ‘a budget and facilities from the sanatorium in order to put on his shows’ to entertain other *siderosos* (ibid.). The second relates to the formation of *La Montaña Mágica*, a workshop comprised of patients at Los Cocos that were a ‘“ragtag” group of “intellectuals, lawyers, rockers, gays, ex-convicts, housewives” interested in expressing themselves creatively’ (Perez, 2016). The workshop would come to gain international notoriety in 1997 with the publication of a book of short stories, *Toda esa gente solitaria: 18 cuentos cubanos sobre el SIDA* (All the Lonely People: 18 Cuban Stories about AIDS). The freedom of expression allowed within the sanatoriums, coupled with the previously mentioned relaxation of quarantine rules where *siderosos* were allowed regular trips out of the sanatoriums, thus worked together to provide its inhabitants with a glimmer of possible happiness in otherwise difficult times – at least until illness caught up with them. Contrasting the plenitude found in the sanatoriums, where *siderosos* could be assured of being well-fed, with not only the profound scarcity and persecution associated with life outside these sanatoriums but also the freedoms enjoyed by *siderosos*, the aforementioned discussion thus goes some ways in helping us understand the myriad elements implicated with the Los Frikis’s practice of HIV autoinfection and how the existence of the sanatoriums and what they offered, is indeed entangled with autoinfection itself.

Papo la Bala, or Papo the Bullet, was one of the first few Los Frikis to autoinfect. Dubbed the ‘Kurt Cobain of the Frikis’ by his peers, Papo’s cockiness, charisma and leadership helped him become a prominent member of the Los Frikis (Radiolab, 2015). Notorious for donning the American-flag-as-bandana as a flagrant show of defiance against the Cuban government, Papo was no stranger to acts of dissidence and in the early 1990s, looked to HIV autoinfection as a way to escape the oppressive Castro regime (Lindwasser, 2017). In the Radiolab (2015) interview, Vladimir shares the following story about Papo’s decision to autoinfect:

> *Papo said, I want to live free. Look, they're kicking me out. They're beating me out. They don't want me to live like a Roca [Friki] here. They are doing a lot of things to me. I'm going to do a lot of thing to them. And he told me, look, I went to this rock concert … I met up with these other rockers, they were HIV positive and I went and took a syringe, drew some blood from their arm and I put the needle in my own arm … and I jam myself with HIV.*

Describing his autoinfection as an act of political resistance against the Cuban regime so that he could lead life on his own terms, Niurka Fuentes, Papo’s wife, states that (Saeed, 2017):

> *He knew that by infecting himself he would be sent to the sanatorium. He knew that he would meet other people like him in there, the police would leave him alone, and he would be able to live his life in peace.*

Lest it be thought otherwise, it must also be emphasised that Papo was fully aware that his decision to autoinfect himself with HIV, was in essence, also a death sentence. Vladimir, when confronting Papo regarding his decision to autoinfect, obtained the following response (2015):

> *… I look at him, I said, man, do you know what you did? Do you know what are you doing? You're going to die, man.*
>
> *And he said to me, I don't care.*

Papo's laconic response matters immensely, because it contains all of the nonchalance towards death pointed out in my earlier discussion of Castro's slogan-ultimatum. When juxtaposed against Vladimir's outrage and shock over his decision to choose death, Papo's three words make infinitely clear the manner in which death is indeed treated as an implicit threshold one does not act to cross. Papo took to heart the instructions contained within Castro's slogan and It is hardly surprising then, that he chose death as political resistance against the Cuban regime. As he so poignantly puts it, when 'you don't have any more doors to open, death is a door' (Bridges, 2015; Radiolab, 2015). Papo's autoinfection, as a form of self-destruction, thus brings to mind the self-immolation employed by Thich Quang Duc to protest the Vietnam war, by Jan Palach to object to the invasion of Czechoslovakia and more recently, by Mohamed Bouazizi, whose fiery death served as the catalyst for the Arab Spring. What sets Papo, or any other HIV autoinfectors apart from the self-immolators however, as Smallman rightly points out, is that for the former, 'their protest was not public but, rather, took place in the quiet rooms of the sanatoriums and on urban rooftops' (2007, p. 56). The minimal optics and publicization associated with a 'private' form of protest like HIV autoinfection may then be why the Los Frikis could be perceived by some as lacking 'political motivation' for their actions – I examine the implications of this lack in further detail below. It may also be why there is no widespread awareness of the Los Frikis's practice of HIV autoinfection (even as Cuba is infamous for its quarantine focused approach to HIV).

As word spread about Papo's decision to autoinfect, many other Los Frikis, lured in for reasons discussed thus far, followed suit; it is estimated that 'as many as 200 Cubans may have injected themselves with HIV-positive blood' (Prout, 1999, p. 427). In fact, HIV autoinfection became so popular that according to Yohandra, many Los Frikis 'started to think that in order to be a Friki, you had to have AIDS' (Radiolab, 2015). Here, one is reminded of Rabinow's important and pioneering work on biosociality, a term he used to describe the 'formation of new group and individual identities and practices arising out of' the use of new biomedical technologies, exemplified for example, by 'neurofibromatosis groups who meet to share their experiences, lobby for their disease, educate their children, redo their home environment, and so on'

(Rabinow, 2005, p. 188). Similarly, Sahra Gibbon and Carlos Novas have also employed the term, biosociality, 'to name the kinds of socialities and identities that are forming around new sites of knowledge (genetics, molecular biology, genomics) and power (industrial, academic, medical)' (2008, p. 3). Keeping in mind that the distinction between HIV and AIDS was effectively effaced in Cuba, Yohandra's comment on AIDS, when read alongside Rabinow's work on biosociality, can thus be seen as pointing to the role that the virus, HIV, and related viral testing technologies, play in (trans)forming what it means to be a Friki. In other words, if for Papo HIV was *a means* through which he could pursue a punk lifestyle, then these second wave Friki autoinfectors were different in that the acquisition of the virus was *in itself* what it meant to be a Friki – thus, sociality becomes biosociality. This difference notwithstanding, it is interesting to note that much like how the informal exchange of music cassettes previously brought the Los Frikis together, we see here once again how the non-living, this time in the form of a virus, is entangled with the living in the (re)negotiation of Los Friki sociality; in turn, this (re)negotiation of Los Friki sociality also helped shaped the differential identities of HIV –researchers believe that the 11 unique recombinant HIV strains in Cuba emerged from intra-sanatorium sex (McNeil Jr, 2012b). The organic and the inorganic, the human and the more-than-human are thus always entwined.

Useful as Rabinow's concept of biosociality is in helping us make sense of how identities and practices may be (re)formed with medical diagnoses, it is – as already discernible from the prefix *bio* – important to refrain from unduly privileging the biological. In her research on HIV in Tanzania, Marsland shows how biological status alone is insufficient for the development of alternative subjectivities, arguing that biosociality must be understood as being 'laid down along already existing networks of family and neighbours, [and] reinforced by shared practices' (2012, p. 473). Hence, important as HIV was for the biosocialities of these second wave Friki autoinfectors, it is important to remember that this biosociality around HIV comes-into-being only because of the first wave Friki autoinfectors like Papo, who deemed it necessary to acquire HIV to keep Los Frikis-related practices alive and thriving. It was precisely the networks in which individuals like Papo were part of that facilitated the sharing of blood and for the practice of HIV autoinfection to flourish; without these networks and individuals, it would not have been possible for infected blood to be shared, much less for HIV-positivity to become associated with being a Friki. Thought in this manner, the concept of biosociality thus reminds us that it is important not only to 'look inward to the body, but [also] outward to human relationships' (ibid, p. 474) and to not privilege the biological at the expense of the social. If Rabinow's concept of biosociality illustrates how (new) identities and practices may coalesce around local biologies, then it is important also to remember that these local biologies are themselves always already socially implicated – the biological and the social and thus always in a process of mutual co-constitution. In this manner, instead of biosocialities, it might be more useful thus, to use Mills's term, *diffracted biosocialities*, which 'describes a dynamic connection across these

facets (biological and social) and it denotes the complex ways in which the social is not only forged through biology, but where biology, itself, is social and forged through sociality' (2017, p. 10).

Papo's relationship to death in the context of HIV autoinfection, may have also differed from that of the other autoinfectors. Even though Papo was fully aware of the deadly consequences of autoinfecting himself with HIV, many of the Los Frikis who followed suit may not have been and/or may have done so with the optimistic belief 'that scientists in Europe or North America would soon find a cure for AIDS' (ibid., p. 429). As discussed previously, given that the Cuban government elected for a more quarantine-focused approach to HIV/AIDS containment and 'did not place its emphasis on education in the struggle against HIV/AIDS' (Smallman, 2007, p. 46) until much later on in the epidemic, this may then have played a role in the Los Frikis's lack of awareness around the mortal consequences of HIV infection (Leiner, 1994). For these individuals then, the practice of HIV autoinfection may have been less an act of political rebellion where death served as a means of resistance (as it arguably was for Papo), but more of a practical decision driven partially by ignorance of the consequences of HIV infection, partially by HIV treatment/cure optimism and partially by a desire to live a more comfortable life. That the Los Frikis lacked 'political motivation' for their actions was precisely the opinion of Hector Terry, the founder of Los Cocos – comparing them to the hippies, he remarked (Smallman, 2007, p. 54):

> *At least in the Sixties the hippies had an ideology, a philosophy. The problem with the Frikas is that they didn't have any.*

Rolando Piloto, the head of the sanatorium in Pinar del Rio, expresses a similar opinion. Emphasising that the Los Frikis's practice of autoinfection was in no way politically motivated, but instead a 'social escape' from their unpleasant realities (Smallman, 2007, p. 429), he explains in Norborg's (1995) documentary:

> *Most of our patients have an unfavorable family situation. These young people lead rather unsettled lives. They have no parental control; most have no schooling. This is a social refuge for them, not a protest against the state.*

The accuracy of Piloto's explanation not withstanding (in the same documentary, Maria Gattorno, a youth expert, contradicts Piloto by pointing out that the autoinfecting Los Frikis came not only from 'unfavourable' backgrounds), what is noteworthy here is how Piloto's comment presents to us a particular manner in which Castro's Child and its politics, interfaces with the family unit and the child. By attributing HIV autoinfection to a malaise within the family (i.e. bad parenting), Piloto not only refuses to recognise these Frikis as enacting a queer politics – thus diffusing any potential anti-establishment political charge associated with HIV autoinfection – but also subverts a practice that might have been threatening to the

politics of the Child, to *work for* the Child instead. Presented to us as devoid of political intention and instead, as a desperate cry for help by the child, HIV autoinfection as a protest against an unpleasant familial situation thus becomes a reason for the existence of sanatoriums-as-social-refuge (which as highlighted earlier, not only provide medical care, but also food, education and employment). Acts of political resistance are thus disarmed through attribution to the (failed) family, after which the state can then intervene in the name of caring for the child – this of course, leaves unscathed existing politics of the Child and ultimately works for the proliferation of Castro's Child. Comments made by Jorge Perez, the previously mentioned medical director of Los Cocos, illustrate yet another way in which acts of political resistance can also be made ineffective – simply by acknowledging them. Attributing HIV autoinfection not to the family, but to suicidal tendencies that exist in all societies, he says (ibid.):

> *During times of crisis the number of suicides increases. It increased in the United States during the Vietnam War when there were people who set themselves alight like Buddha. There isn't any society which is perfect and in our society there are normal people as well as people who are not normal, and patriotic reactions as well as negative reactions, and this is inevitably so because it is a society.*

Here, HIV autoinfection as an act of political resistance is disarmed by recognising and affirming it as a normal phenomenon, even if it is normatively seen as 'not normal'. In other words, the potential for political protest that HIV autoinfection might have had, is lost, because it is simply accepted as a typical, albeit unwanted, response to how things are. The normalisation of an exceptional practice like HIV autoinfection thus renders it 'uninteresting' and robs it of its capacity to provoke thought and incite political change.

The lack of HIV/AIDS education in Cuba becomes important when we consider also, as Bridges (2015) has, that a large majority of the individuals who autoinfected themselves, were men. In other words, because these men did not have a good understanding of HIV and its modes of transmission, they unwittingly infected others by having condomless sexual intercourse, thus subjecting any girlfriends they had to HIV infection as well (Radio Ambulante, 2017a). This was exactly what happened to Yohandra (Gerson's current partner), who acquired HIV via sexual intercourse with an autoinfector ex-boyfriend. As Luis Trelles, the producer of the Radio Ambulante interview recounts (Radio Ambulante, 2017a):

> *But there was so much they didn't know about the virus. The epidemic still wasn't publicly discussed, much less how it was contracted. The frikis that injected themselves were mostly men and they didn't know they could infect other people through sexual contact. And the frikis' girlfriends were the first to suffer the consequences. Women like Yohandra who, one day, received a*

visit from the Director of Hygiene and Health of the province. Until that moment, Yohandra was a normal girl from the province. She lived at her parents' house while she studied to be a rural teacher. Her ex-boyfriend, an autoinfected friki, had submitted a list of the people he had slept with. And Yohandra's name was on it.

As Yohandra tells us in the interview, the visit from the Director of Hygiene and Health would go on to spark a chain of tragic events that would change her life forever (ibid.):

I was pregnant. I didn't tell the Director of Hygiene at the moment but he visited my doctor's office and the doctor told him I was pregnant and they made me get rid of the baby. After I aborted that belly, I gave up on having kids. I didn't want to be pregnant ever again.

Following the forced abortion, because the laws in Cuba at the time were such that HIV-serodisconcordant couples could not be together, for exposing her healthy husband to the risk of HIV infection, the very 'same Director of Hygiene that had ordered her abortion [also] accused her of "propagation of the epidemic"' and Yohandra was thus sentenced to jail for three years (ibid.). Ironically, Yohandra's (now ex-) husband never ended up being infected with HIV. After serving her jail sentence, Yohandra was subsequently sent to Los Cocos and it was there that she met Gerson. While we may regard the above as tragic, the gendered impact of the practice of HIV autoinfection, where unwitting boyfriends end up impacting unknowing girlfriends, continues to happen today, albeit in a different form: there is plenty of evidence (Gangakhedkar et al., 1997; Newmann et al., 2000; O'Leary, 2000) which 'shows that sexual intercourse within marriage or with a permanent partner puts many women at risk for HIV infection, most commonly from their husbands' or partners' extramarital liaisons' (Parikh, 2007, p. 1198). Yet, even as Yohandra's story makes clear the unequal manner in which HIV infection is desired and impacts on individuals in a relationship, for other couples, the virus can be precisely that which brings them together. Juan Carlos Quintana, for example, after falling in love with a HIV-positive girl, tells Newsweek that he decided to autoinfect himself with HIV so that he could be sent to the sanatorium to be with her – and it was in there that they then got married ('Choosing To Die', 1994). Reflecting on perhaps what might be an unintended consequence of separating HIV-serodisconcordant couples through the policy of forcible quarantine, Smallman also documents a similar incident in his book, writing about how Raysa Valdes autoinfected herself with HIV so that she could join her lover, Orlirio, in the sanatorium (2007). Thus, even as HIV might be said to be responsible for separating couples in the first place, for lovers like Juan and Raysa, the virus was paradoxically also that which allowed them to be in their lovers' embrace once again.

As the Los Frikis gathered in the sanatoriums, a sense of fraternity was subsequently nurtured and the support structure that this in turn provided for HIV-negative Los Frikis on the *outside*, should not be

understated. Punk bands were formed and if comprised of Los Frikis located both inside and outside the sanatoriums, they were made possible because visits out of and into these prisons were allowed. In other words, even as the Cuban's regime policy of forcible quarantine served to cleave the Los Frikis into those living in and those living outside of the sanatoriums, this segregation was, to some extent mitigated by the human-viral traffic that flowed in and out of these sanatoriums – which of course, not only facilitated the formation of new punk bands but also the sharing of bodily fluids (thus creating more autoinfecting Los Frikis). This was the case with Gerson's band and as the Radio Ambulante (2017a) interview tells us:

> *… Gerson had a lot of friends inside [the sanatoriums]. He was one of the healthy ones and would go visit them often … It seemed like everything was possible at the sanatorium. Everything. Even putting together a punk band. Gerson got together with a couple of the autoinfected patients and they started playing. He'd go every week to rehearse.*

Of course, the Los Frikis who entered the sanatoriums would never get better. The camaraderie that the Los Frikis nurtured, much like the freedoms that the *siderosos* enjoyed, was thus always done so on borrowed time. The death of a fellow Los Friki was a bittersweet moment – for those mourning a death, it brought together not only precious memories, experiences and freedoms enjoyed with and without the deceased, but served also as a stark reminder it was all made possible because of a virus, and ultimately of the ephemerality of any felt fraternity. As Gerson recalls (ibid.):

> *We'd play music and start drinking. The music the person who died liked. And then we'd get sad and wait until we took him to the cemetery … a lot of the people when they were conscious of that, that they were sick and that there was no turning back and they were going to die, they would regret it. What stayed was the sickness … that's why the loss hurts so much. I missed them more because it was the support of everybody. Everyone sought out support inside their fraternity, their group. When it's empty you feel much more.*

For HIV-negative men who lived outside the sanatoriums like Gerson, they may thus experience a form of hurt or loneliness that ebbs and surges not only with the flow of *siderosos* into the sanatoriums, but also with the temporality of HIV/AIDS (ibid.):

> *With every funeral, Gerson was more alone. First the street had emptied when his friends all went in together to the sanatorium. And now his people were completely disappearing, and he was turning into one of the last frikis of his generation who hadn't entered the sanatorium.*

In his solitude, Gerson's drug use worsened, and he was eventually caught by the police with amphetamines and sentenced to four years in prison. Not wanting to go to jail however, Gerson turned once again like many before him, to HIV autoinfection as a means of escape (ibid.):

> *I started looking for a friend who could give me some blood. I finally found one after two months of looking and asking for some … I had the syringe and with my shoelaces I found the vein there and I extracted his and I put it in the arm.*

Recalling how he 'shed some tears' as he put 'that sick blood inside' (ibid.) him, Gerson's bodily reaction makes crystal clear the emotional struggle that HIV autoinfectors may have felt. It is immediately possible to appreciate this emotional struggle as related to the deadly consequences of HIV autoinfection and the unique circumstances in Castro's Cuba that paradoxically allowed such a fatal practice to revitalise its practitioners. Yet, painful as the decision that the Los Frikis took of trading their lives for a living might have been, the fact that HIV autoinfection did indeed serve as a practice aimed at the pursuit of a better life does compel us to take seriously the provocation that one need not be suicidal even if one accedes to death. Expectedly, a certain level of discomfort is experienced in choosing to understand HIV autoinfection in this way, but I want to suggest that this is precisely because of the anthropocentrism discussed in the previous chapter; the privileging of the self-preservation of the human organism cannot but also shape the way we think about what constitutes the 'good' life. In this manner, Gerson's tears, besides serving as a material reminder of the fraught emotions experienced by the practitioners of HIV autoinfection, serve also to cleave apart questions related to longevity and finitude, from questions of how one wants to live a life – questions that may have hitherto be conflated as one and the same owing to anthropocentrism. Taking Gerson's tears as an exhortation to seriously consider the tensions that may exist between the (de)privileging of the self-preservation of the human, what one thinks is a normatively good life and the gestation of new lifeforms and modes of life, I will explore these issues in conjunction with human-microbial relations in the last chapter of the thesis.

4.3 Ontological choreography

The multispecies stories I have told above, about the Los Frikis and their experimentation with alternative ways of living with HIV, shows how even though HIV is indeed detrimental for human health (here understood in strictly biological terms), this does not preclude HIV from taking on a range of other more positive values. Drawing on the material detailed above, there are several entry points into how we might better delineate the process of intra-action and the myriad of actants and actors involved in the bringing-into-being of the human and more-than-human bodies in question. Firstly, we might understand Cuba's energetic HIV/AIDS containment efforts – the destruction of blood reserves, mass testing, the construction

of sanatoriums, etcetera – as related to the immunitarian logic discussed in chapter two, where both the body politic and the individual are enacted as entities in need of defending from a virus, or HIV-as-enemy.

Secondly, this HIV-as-enemy becomes entangled not only with the socio-material conditions of scarcity and oppression in socialist Cuba, but also with the plenitude and freedoms in the sanatoriums, to give rise to the practice of HIV autoinfection. Subsequently, depending on how and what was implicated with and in the practice of HIV autoinfection, a dazzling array of different human and viral identities materialised: Papo as political dissident and father of the HIV autoinfection movement; HIV as a tool for political protest against an oppressive regime; Yohandra as unwitting victim, divorcee and childless mother; HIV as death sentence; HIV as gateway to pursue punk music; Juan and Reysa as reunited lovers; HIV as freedom; HIV as food security; Gerson as jail-pardoned; and HIV as Los Friki biosociality. The unique and heady mix of societal oppression and economic lack in socialist Cuba, when combined with the provision of sanatoriums as a 'line of flight', thus come together with the practice of HIV autoinfection to simultaneously enact HIV-as-enemy *and* otherwise. To be clear, the word 'and' is crucial here: it insists that we remain attentive to how the immunitarian logic and the practices that enact HIV-as-enemy, by attempting to keep it at bay, can take on a life of their own by intra-acting with other elements to bring-into-being other 'monstrous' HIVs. Here, my reading of 'monstrous' follows that of Vietnamese-American writer Ocean Vuong, who in his beautifully written novel remarks that to be a monster is to 'be a hybrid signal, a light house: both shelter and warning at once' (2019, p. 13) – paradoxically fatal, yet also simultaneously nourishing, these HIVs were monsters indeed for the Los Frikis. If the aim, as I argued in chapter two, does not pertain to ascertaining which of these various HIVs are 'truer' than the others, then an attention to the multiplicity of HIVs can, as the stories of the Los Frikis make clear, tell us something about how we exist in this world.

Thirdly, the existence of these multiple HIVs hangs together by dint of the way in which humans and virus relate to each other. In her work on atherosclerosis, Mol (2002) illustrates how tensions between different atherosclerosis are resolved when distributed across different sites; careful attention to the Los Frikis's ontological choreography (Thompson, 2005) of HIV seems to suggest however, that what might be more important here are the ethics of intraspecies and interspecies co-existence instead. This much becomes clear when we consider Yohandra's story. Arguably, Yohandra's ex-boyfriend's interspecies ethics was one that advocated for his own material entanglement with the virus – this is plainly evident from his decision to HIV autoinfect. Yet, his decision to autoinfect, or to live with HIV in a certain way, also impinges on the lives of human others; the way in which those in his social networks are differentially impacted by his interspecies practices, in turn depends on the kind of relationships he has both established and wants to cultivate going forward. Viewed in this light, the interspecies practice of HIV autoinfection may have certainly brought-into-being a multitude of HIVs for the boyfriend, yet, if we consider how his HIV autoinfection is directly related to Yohandra's own unwitting infection, then what becomes clear is how

one man's interspecies ethics and practices can actually enact and foist on to another what may be for them an unwanted (way of living with a) virus. The point I am making here becomes clearer if we entertain the fictive scenario that Yohandra was in fact hoping to practice autoinfection: if this was the case, the intra- and interspecies ethics involved would have been different and consequently, what is brought-into-being might have also differed. In other words, it is this constant and incessant comingling of various intra- and interspecies ethics across different bodies, that facilitates the co-construction of a multiplicity of human and more-than-human identities. As Stengers (2010) might say, all practices impinge upon and relate to other practices that simultaneously exist; HIV autoinfection, when viewed as part of an ecology of practices thus makes clear the way in which all differently enacted HIVs do depend and lean on one another for their existence. Juan's and Reysa's stories may also be read along similar lines: their desire to be with their respective partners through HIV autoinfection, despite the latter's HIV status and confinement to the sanatoriums, is intimately related to the way in which they have chosen to live with both human and more-than-human others. One can only speculate whether Yohandra and her boyfriend would have continued to have condomless sexual intercourse, and whether Juan and Reysa would have autoinfected, had they all been educated about the manner in which HIV is transmitted and the deadly consequences of infection, but regardless, the point here is simply that questions of how we want to co-exist with microbes, must also always be considered alongside questions of how we want to live as a human among other humans. It is precisely the friction that results from the traffic between different intraspecies and interspecies practices, that allows a multiplicity of HIVs to proliferate.

This movement between intraspecies and interspecies ethics that I am referring to, must also be understood in relation to political ideology. Earlier I argued that the immunitarian logic and the practices that enact HIV-as-enemy can and do intra-act with other elements to bring-into-being a multiplicity of HIVs and relatedly, other ways of living and dying with the virus. Specificity is important however, and the existence of these multiple HIVs must be understood in relation to the particular manner in which the Cuban regime went about HIV containment. In other words, that the Cuban regime was able to suppress freedom of movement and employ forcible quarantine for HIV/AIDS containment in the first place, matters greatly. The use of sanatoriums may never become viable again (at least in the West) given the international focus on securing and protecting human rights; but it is precisely the unfeasibility of sanatoriums in our current political-ethical climate that exhorts us to consider how different political ideologies and the way in which they shape intraspecies ethics (be it through human rights, political economy, climate change, etcetera) can play an important role in the virus's multiplicity. In other words, political ideology must be conceived not only as a framework through which relations between humans are understood and organised (e.g. mass testing and forcibly quarantining HIV-positive individuals), but also as vitally connected to how humans want to and do co-exist with microbial others. As the multispecies stories I have told of the Los Frikis illustrate, in a political climate that allows for the imprisonment of individuals

based on their serostatus, novel ways of living with HIV can emerge, if and when embracing death becomes a viable way of living-in-oppression. Two points are worth emphasising here. Firstly, perhaps the reason we find the Los Frikis interesting, is not merely that their experiences offer a rare glimpse of what life would be under socialism; it may also be due to the more specific fact that the Los Frikis sensitise us to how 'what we as humans feel, think, do, and judge in relation to the subject of our own deaths, the deaths of those close to us or those we know' (Friedman, 2016, p. 305) is intimately related to the political ideologies with which we are entangled with. Thus, even if we disagree with the manner in which political ideologies different to our own envision futures both for the child and the Child, the diversity of political ideologies being enacted in practice around the world is something to be celebrated (this is not to say however, that support for a democratic mode of political organisation should be hindered in any way), for this difference can serve as a source of inspiration of how we might live alternatively with more-than-human others. Secondly and relatedly, if what accompanies every political ideology is the question of how intraspecies ethics impinges on interspecies ethics, then perhaps what limits our ability to think creatively about how to live with microbes, is a predilection for, and familiarity with certain anthropocentric ideals that provide guidance as to how relations between humans should be organised, as well as the expectation that our social and political systems be configured accordingly for their attainment. These ideals – such as longevity, for example – privilege the self-maintenance of the human organism (i.e. normatively anthropocentric) and are also closely associated with what is commonly acknowledged to constitute a desirable life; yet the oft-taken for granted goal of longevity, as the Los Frikis remind us, can both shape and be shaped by the political ideologies with which they are entangled. In their thought-provoking paper on development, Srinivasan and Kasturirangan make a similar point regarding the pursuit of longevity, noting that the pursuit of human development is tied too closely to a singular vision of the '"good" human life as one that is freed from the vicissitudes … of living on the planet, of being a part of "nature", of being animal', so much so that human 'ways of life that depart from the norms of human exceptionalism set by certain societies are animalised and cast as in need of upliftment – of "development"' (2016, p. 126). They highlight for example, that even the most basic of development indicators, such as life expectancy, is tellingly 'predicated on the human capacity to circumvent the risks (and inconveniences) that are inherent to living as a part of the more-than-human world' (ibid.). Thus, even though the doctrine of developmentality is well-meaning in its acknowledgement and striving for all human communities to be 'developed into the dominant form of human flourishing' (ibid.), our singular obsession with it might also be the very thing that prevents us from exploring and accepting other ways of living the 'good' life that embrace disease and death instead (Srinivasan, 2015). The problem here as I see it, is that despite advocating for the improvement of human life, developmentality also simultaneously downplays the *significance of living a life* because in proclaiming 'the enhancement of individual life as the end of point of progress and mission of history' it also legitimises the treating of life as a means to an end – or as one scholar puts it, 'no purpose could be said to reside in the episode stretching from the birth to the death of the individual' (Bauman,

1992b, p. 4). On my reading, what Srinivasan and Kasturirangan might be said to be implicitly alluding to then, is the predominant manner in which the 'good' life is too often narrowly associated with and focused on *death-denial* (Aries, 1974; Gorer, 1955). Here, I am reminded of what Freud wrote in his 1918 *Reflections on War and Death*, in which he remarks that (2014, p. 20):

> *Our attitude [towards death] had not been a sincere one. To listen to us we were, of course, prepared to maintain that death is the necessary termination of life, that everyone of us owes nature his death and must be prepared to pay his debt, in short, that death was natural, undeniable, and inevitable. In practice we were accustomed to act as if matters were quite different. We have shown an unmistakable tendency to put death aside, to eliminate it from life … We cannot, indeed, imagine our own death; whenever we try to do so we find that we survive ourselves as spectators. The school of psychoanalysis could thus assert that at bottom no one believes in his own death, which amounts to saying: in the unconscious every one of us is convinced of his immortality.*

Zygmunt Bauman too notes this insincerity in our attitudes regarding death, stating that 'since the discovery of death … human societies have kept designing elaborate subterfuges, hoping that they would allow them to forget about the scandal; failing to forget, to afford not to think about it; failing that, to forbid speaking of it' (1992b, p. 1). Thanks to the normalisation of this pursuit of longevity in society, in normal times, we thus 'move actually without ever believing in our own death, as if we fully believed in our own corporeal immortality' (Zilboorg, 1970, p. 467). Philippe Aries's important research (1974, 1981, 1985) on death mentalities from the Middle Ages to modern society offers some support for this: he notes how while religion previously grounded the hope for eternal life beyond corporeal existence, with the modern 'medicalisation of death', investment in the quest for immortality became increasingly focused on medicine and its related technologies instead. The truth of whether each of us is truly convinced of our own immortality (and how or if this might relate to developmentality) and criticism of the accuracy of Aries's work (see Bauman, 1992a; Jacobsen, 2016; Walter, 1994) notwithstanding, what I wish to emphasise here is how the death-denial that these various scholars all speak about, albeit in different guises, may be entangled with the kinds of knowledges and worlds that are rendered conceivable and made possible in the first instance. Put differently, our specific conception of our finitude in terms of death becomes the conditioning space for our thought and practices as such. This is clear for example, when we consider how the mere awareness of the inevitability of our death already orientates our being-in-time towards the future. The work of Heidegger is instructive here. In *Being and Time*, Heidegger argues that 'the future has priority' precisely because our predominant mode of temporality is being-towards-death (1927, p. 329). Alweiss explains Heidegger's 'existential futurism' (Barash, 2002, p. 174) as such (2002, p. 122):

> *We humans are destined for death and Heidegger believes that this ultimate limit or end makes all possibilities eo ipso time intelligible … We live our not-yet – that is to say, our end – and it is because our life is defined by death that we have an understanding of a limit and thus time. It is the certainty of death, the certainty of finitude, that opens up possibilities and thus time.*

In other words, our mortality is precisely that which 'grounds and attunes us to the future' (Nielsen & Skotnicki, 2019, p. 117), and this holds true whether or not we explicitly consider (and attempt to deny or delay) our inevitable demise. Death is a structuring feature of our existence which shapes our experience of time; we grasp the reality of our inexistence when we come to understand that we are both finite and futural and our actions thus become significant. Mortality is thus the name we give to 'finitude in its specifically future-oriented form' (O'Byrne, 2010, p. 15). I will return to the issue of temporality and finitude in the next chapter, but for now, what needs to be highlighted is that our ability to recognise novel ways of living with (pathogenic) microbes when presented with them, and subsequently, to find them interesting enough to think with, may very well hinge on our willingness to reconsider our relationship to death; after all, as Bataille (1962) wrote in *Eroticism*, because death is the limit of thought, death-as-limit also 'contaminates and affects the very project of knowledge that seeks to address it' (Romanillos, 2011, p. 2534). Relatedly, in his brilliant paper, Romanillos argues for the importance of a critical exploration of the concept of finitude itself (i.e. *how else might we think of finitude, if not as mortality?*), noting that finitude in geographical research (ibid.):

> *… plays an important, though often veiled, role within a series of geographical concepts and debates: from understandings of spatiality, corporeality, and representation, to the ethics and politics that are made possible – or denied – through the boundaries inscribed between the human and the animal, the organic and the inorganic.*

For prompting a reconsideration of finitude and the conception of the 'good' life, the stories of the Los Frikis are thus important to think with, for they make clear that even as there is a turn towards the more-than-human in the social science, this posthuman turn may also need to be accompanied by greater engagement with death, especially since co-existence with more-than-human others is rarely only benign or exclusively health-producing – it may often also require the loss of human lives. Ivan Illich (1977) notes that our experience of an image of death and dying, defines both the prevailing concept of life *as well as* death – microbes, as I have argued thus far, have always been a vital part of this experience. Yet, crucial as they are to human experience, in so far as finitude continues to be approached in a normatively anthropocentric manner (see discussion in chapter 3), we may fail to appreciate all else that microbes may do, because a commitment to the perdurance of the human organism demands that elimination is the only way forward when it comes to living with pathogenic microbes. As I have illustrated previously, this drive

towards eradication is now indeed made more complicated and nuanced given the emergence of a more 'inclusive' post-Pasteurianism; however, even within this 'improved' framework, our understandings of microbes continue to be grounded and striated by a conceptualisation of finitude associated with normative anthropocentrism. It is, as Romanillos rightly points out then, that 'attempts to write the worlds and spaces both of human and of nonhuman beings need to become aware of how a distinctively anthropocentric notion of finitude "grounds" the epistemological and phenomenological basis of that writing' (2011, p. 2549). The question of whether we might be able to approach ethics in a non-anthropocentric manner and bring-into-being a different world, may then very well also depend on our experimentations with thinking how *both* the human *and* more-than-human might 'relate' to finitude. This is a point that Ernest Becker also alludes to when he says that (1973, p. 33):

> *… all culture, all man's creative life-ways, are in some basic part of them … a denial of the truth of human conditions, and an attempt to forget the pathetic creature that man is.*

He continues (ibid., p. 7):

> *Society itself is a codified hero system, which means that the society everywhere is a living myth of the significance of human life, a defiant creation of meaning.*

While I am hesitant to go as far as Becker to argue that the significance of human life is a myth, his comments, when read through a posthumanist lens, encourage us to question this 'myth' not by dismissing the human, but by considering the significance of other more-than-human lives as well as the role that human lives have to play in fostering and nourishing these other lifeforms. For these reasons then, I ultimately join Romanillos in arguing that 'a deconstruction of the anthropocentric basis of finitude is important conceptual work, particularly in the context of developing understandings of … environmental ethics, precisely because it is so subterranean and bound up with habitual epistemologies and phenomenological languages' (2011, p. 2536).

4.4 Cheating with HIV – developmentality and biovalue

In chapter two, I argued that when it comes to HIV infection, one is never only 'damaged' – the 'damaged' are also always 'damaging'. Thus, even as we appreciate how communities, by dint of being 'damaged' (i.e. experience disproportionate rates of HIV infection or AIDS-related deaths) receive more aid, it is important also to bear in mind that the channelling of resources towards these communities may not only be for altruistic reasons; that is to say, part of the reason why these 'damaged' communities are deemed as more deserving of help is also because of the threat they pose to the Child. This dual logic of the

damaged/damaging that I am highlighting here is also plainly evident when it comes to the Los Frikis: as I explained at the start of this chapter, the resources used to build and maintain the sanatoriums must be understood as an act of care for both Cuba's child (i.e. the HIV-positive individual) and Child. What is noteworthy here then, is that even as this dual logic helps to allocate more resources towards those who may be stricken with disease, it may also serve to create a system through which one might be '*rewarded*' for being sick. The dual logic of the damaged/damaging organises the flow of resources, which in itself presents an opportunity for those willing and able to *cheat* – such as the Los Frikis – to hijack and use. If we understand a *cheater* as 'one who knows the rules of the game and breaks them to gain access to resources to which he or she is not entitled' (Koch, 2006, p. 57), then what becomes clear is that even as our social and political systems direct resources towards the preservation of life and the pursuit of longevity (i.e. the rules of the game are aligned with the politics of the Child), these very systems may also be susceptible to cheating (and thus ironically encourage disease and ill-health), especially from those who might have no other means of obtaining the resources they so desperately need to live. Recalling how because our societies and its institutions are structured on the basis of protecting the Child, to adopt practices that choose the not-Child is also to question the most basic principles of our social life, is it any surprise then, that this act of cheating arouses intense moral feelings and is seen as both morally reprehensible and repugnant? Similar to my argument in chapter one that the implementation of biomedical 'solutions' to the HIV/AIDS epidemic must be understood as necessarily entangled with the social, the broader point I am making here is that 'development' in any form, too does not happen in a socio-economic vacuum; the flow of resources created in the wake of the doctrine of developmentality may very well betray its original intentions by encouraging those embroiled in pre-existing inequalities and injustices to infect themselves with a disease, so as to access these resources. As one scholar puts it, this cheating is but 'a side effect of the therapeutic protocol that implies a betrayal of social contract' (ibid., p. 52). Much of what I have pointed out here also dovetails with other HIV research in medical anthropology which have highlighted how cheating might happen, albeit differently. In Marsland's (2012) research on HIV for example, she documents how HIV comes to be valued because the names of HIV-positive individuals are needed by HIV-related Non-Governmental Organisations (NGOs) in Tanzania in order for them to acquire funding. This peculiar situation thus facilitates the scamming of names, where one person cheats another person out of the list of names of HIV-positive individuals (s)he has acquired. As her informant, Jobe, explains (ibid., p. 477):

> *That man, the one who helped us with the constitution, he has stolen our group from us! He has taken the names of our members and made them look like his … All of these names—they are mine—I went to find all these sick people … He told us to write down everybody's name so that we could all go to a seminar in Mbeya. I asked him 'why have you written down the name of another group at the top of the list?!' he told me 'It doesn't matter, don't worry!' But all he wanted to do*

was take these names to use them himself. He isn't ill, but they won't give a healthy man any money, it has to go via the sick. He's even started to find people who aren't ill to join his group. And now he's really making money!

The 'stealing' of the names of HIV-positive individuals described above thus highlight how both HIV and human bodies can come to acquire 'biovalue' together, and indeed, the sort of extractive approach to HIV documented here is summarised quite poignantly by Frederic Le Marcis, who in his research in South Africa, has described bodies afflicted with HIV/AIDS as 'little more than raw material waiting to be exploited' (2004, p. 465). It is hardly surprising then, that the Los Frikis, much like Marsland's informants, having identified that the HIV-infected human body can and does hold so much biovalue, might then choose to autoinfect – and this is perhaps the greatest difference in the way the Los Frikis and Marsland's 'development' entrepreneurs choose to cheat and access this biovalue – so as to insert themselves into an economic circuit that was previously not available to them.

The Los Frikis however, are not the only cheaters. In 2013, an article published in *Out* magazine documented how some HIV-positive men in New York City deliberately avoid taking their HIV medication so as to develop AIDS (which is defined as an individual having a T-cell count below 200), which then allows them to access economic aid and housing benefits to lead more comfortable lives (Sharifi, 2013). As Sharifi explains (ibid.):

To be eligible for the services provided by New York City's HIV/AIDS Services Administration, commonly referred to as HASA, people must be diagnosed with AIDS or have HIV with certain other specified medical conditions … Those eligible for HASA services get a living plan, housing assistance, financial aid, and free medical care. Exactly what each person gets is determined on a case-by-case basis, depending on factors like their income level.

We can once again understand the provision of these HASA services as aligned with the dual logic of the damaged/damaging I have detailed above – since those with AIDS have a high viral load and are able to infect others, they are thus damaging to both the child and the Child – and how the flow of resources created by this logic then allows these economically impoverished men to become cheaters. Interestingly, Sage Rivera, a research associate at the Centers for Disease Control and Prevention also points out in the article that (ibid.):

There are a whole bunch of different names for HIV within the [LGBT] community: 'the monster,' 'the kitty,' 'the scratch,' 'the gift that keeps on giving.' So people say, 'I have the kitty — so now I

can get my place. Now I can get hooked up; I can get my food stamps, I can get this, I can get that. Other people say, I do not know what I would have done without the monster.

One is thus reminded once again of the monstrousness of HIV I illustrated previously via the Los Frikis, and how the entanglement of HIV-as-enemy with various socio-material conditions to bring-into-being other different HIVs that make the virus both health-harming and life-giving, may be more common than it appears. Yet, it is not simply the phenomenon of wanting to develop AIDS that the article addresses. Making clear that the practice of HIV autoinfection is unique not only to the Los Frikis, in the article, Rivera also comments on the attitude of a man he knows that is planning to have unprotected sex so as to become infected with HIV, summarising it as such (ibid.):

My life is not getting better. I need a helping hand, and it seems like the only way I can get a helping hand is by getting sick.

Upon learning of HIV autoinfection, Nancy Downing, the director of advocacy and legal services at Covenant House New York, a youth shelter, subsequently states that (ibid.):

It's unbelievable that kids have to go those lengths to get the services they need. Young people are sometimes not looking at their long-term future — they can see only the short-term future — and that is a developmental issue. It's going to have an impact on them for the rest of their lives. Some might not even take the medication, because at their age — again, developmentally — they might not see the need.

While I agree wholeheartedly with Downing's sentiment about the tragedy it is that one has to resort to HIV infection to survive (i.e. embrace death so as to live), when placed in juxtaposition to the attitude of the autoinfecting man that Rivera speaks about, once again brings to the foreground how both perspectives are underpinned by different intra/inter-species ethics, which are in turn, shaped by different responses to the broader question of how *both* the human *and* more-than-human might 'relate' to finitude.

Consider also Erin Koch's research on tuberculosis (TB) in Georgian prisons, in which she examines how sputum (bronchial mucus) samples are trafficked among prisoners. Because a positive TB diagnosis promises a transfer to the Ksani prison colony, where living conditions are better because of increased 'access to sunlight and fresh air, a higher-calorie diet, cleaner, more spacious living quarters, and reduced exposure to violence and social hierarchies among detainees' (Koch, 2006, p. 51), many prisoners subsequently engage in the illicit exchange of TB-positive sputum to secure a false positive diagnosis so as

to ‘cheat’ their way to a more comfortable prison sentence. The way that this cheating is done is varied and often ingenious (ibid., p. 57):

> *Some of them, they have this sputum under a fingernail. Some used to put it in a syringe, and hide it in the sleeves of their shirt, especially in winter when they wear more clothes ... then sometimes, the worst thing is that they bring sputum in their mouth. They put the sputum in their mouth and during the coughing they get it in the cup. That is the most disgusting. There are such schemes even as they are rinsing their mouth, they can keep this sputum, hide it somehow. Sometimes they have a [dried] piece, sometimes they have it in their nose and they force it from nose to mouth when they cough.*

As Koch explains, even though an individual ‘is unlikely to actually contract pulmonary tuberculosis by placing someone else's sputum in his or her mouth’, a transfer ‘to Ksani, however, would expose an individual to airborne bacteria’ (ibid., p. 51) that would then subsequently lead to TB infection – it is in this manner then, that we might think of this traffic of TB-positive sputum as an indirect form of autoinfection. Much like the experiences of the Los Frikis, for Koch, this TB autoinfection, or autoviolence as she terms it, is a reflection of these prisoners’ agency and ‘their struggles for survival on the margins of society and of the state’ (ibid., p. 57). While I agree wholeheartedly with Koch’s diagnosis that ‘the medical and pharmaceutical resources that have laid increasing claim to defining "the good life" here function under conditions of desperation, disease, and deprivation to allow "stakeholders" to make their own claims on life chances’ (ibid., p. 57), when viewed though a posthumanist lens, the stories of the Los Frikis, the young men in New York City and the Georgian prisoners also make clear that in some very specific situations, pathogenic microbes in spite of the harm they cause to human health, can too be good to live with. In other words, while pathogenic microbes can certainly be a form of embodied precarity, because they ‘can also be performatively mobilised “outside” [the body] through socio-economic relationships to manage precarity’ (Mills, 2017, p. 10), these pathogens can intra-act in a milieu of developmentality to become differentially embodied. Economic realities are intimately connected with the kinds of human-technological-viral configurations that emerge: just as ‘comfortable’ economic existences might be linked to a certain mode of ‘living with’ HIV, precarious economic conditions may also necessitate and engender more experimental forms of human-viral togetherness. It is not just humans, but a whole host of other organisms ‘whose lives and deaths are linked to human social worlds’ and the importance thus of remaining sensitive to how ‘a multitude of organisms’ livelihoods shape and are shaped by political, economic, and cultural forces’ (Kirksey & Helmreich, 2010, p. 545) cannot be overstated (see also Brice, 2014).

5. Bugchasers

While the Los Frikis's and their practice of HIV autoinfection may not be quite well known, in this chapter, I want to focus on the experiences of *bugchasers*, or men who have become infamous not only in the realm of public health, but also more generally in popular culture, for deliberately forgoing condoms when having sex with other men so as to expose and infect themselves with HIV. Like before, my aim here will be to tell multispecies stories about bugchasing so as to continue illustrating the wide range of human and viral identities that may be brought-into-being. By becoming attuned to these multispecies becomings, my analysis will also serve as a commentary on the predominant ways in which we think death and life. As it shall become clear, if the Los Frikis *lived by embracing death*, bugchasers *embrace death to birth life*.

From the outset, it is important to distinguish between barebacking and bugchasing. Derived from the expression of bareback horse riding (i.e. riding a horse without a saddle) (Scarce, 1999), the term barebacking – also often used interchangeably with the phrases 'raw sex' or 'skin-to-skin sex' amongst gay men – refers to any form of anal intercourse between men 'in which condom use is explicitly and consciously excluded' (Holmes & Warner, 2005, p. 10). The rising popularity of barebacking and associatively, the increased willingness of barebackers to expose themselves to HIV, has been linked by many scholars to the advent of HAART and its transformation of a previously fatal HIV/AIDS diagnosis into a manageable chronic disease (Crawford et al., 2003; Gauthier & Forsyth, 1999; E. Reynolds, 2007). Subsequently, bugchasing, as a practice related to the active desiring and pursuit of HIV infection, is often presented in scholarly research then, as a specific instantiation, or form, of the more 'general' practice of barebacking (Dean, 2009; Gauthier & Forsyth, 1999; Gonzalez, 2010; Hammond, Holmes, & Mercier, 2016; Holmes & Warner, 2005). As a practice revolving around a serological cleavage, bugchasing requires at a minimum, participation from one HIV-negative man who wants to become infected with the virus (bugchaser) and from another HIV-positive man who will share the 'gift' of HIV (giftgivers). Yet, arrangements for the organised sharing of HIV-infected semen between giftgivers and bugchasers can also be far more spectacular – such as when held on a group level. An example of this would be what Dean terms the 'roulette party', the inner workings of which are clearly illustrated in an ad posted on *ultimatebareback.com* (2009, p. 72):

> *B[irth]day fuck fest at my hotel in SOMA just off Harrison [Street]. I have a few neg bottoms lined up to take some Neg and Poz loads. Here is the party format. Everyone will arrive around 9:00pm at my hotel room. When you arrive you will write down your hiv status on a card. You will be the only one to see this card. It will have a fake name on it but one that you will be known as. Once we are all done fucking and the tops leave[,] the bottoms will reveal the cards and see who took what. The tops can remain for round two if they like or you can bail if this freaks you out. No one will discuss*

> *status until every one is done with the breeding. If this sounds hot to you email me with a current chest and cock shot, face if you like, and I will get back in touch with you close to the date of the party. This will be my 37th b[irth]day and I want a gift to keep on giving.*

If we take into account how receptive anal intercourse remains the most likely sexual route of HIV infection, then following Moskowitz and Roloff, we might also say 'that even though all bugchasers are indeed barebackers, not all barebackers are bugchasers' (2007, p. 348). Yet, because *all* barebacking has the potential for HIV transmission, it is crucial when discussing the phenomenon of bugchasing, to differentiate, as Tim Dean does, between different forms of barebacking (2009, p. 12):

> *These three categories may be summarized as barebacking with the desire or intention to not transmit HIV, barebacking with indifference to HIV, and barebacking with a desire or intention for viral transmission.*

As I argued in chapter two however, it is important to understand bugchasers not as a static sexual identity, but as a becoming. That we should be careful not to reduce the men we study to simple identity categories, is precisely the conclusion of García-Iglesias's recent work on bugchasers; through careful analysis of personal stories shared with him by self-professed bugchasers, he shows how these men 'do not experience their fetishes as fixed identities', and argues instead that they experience 'their bugchasing desires and identities as fluid and evolving' alongside their experimentation with online practices and participation in HIV prevention (García-Iglesias, 2020b, p. 1242). Dean himself also emphasises this, when explaining the ways in which each of his three barebacking categories may relate to each other (2009, p. 12):

> *Participants in the [barebacking] subculture may fall into any one of these three categories and may shift among them (these are categories of intention and practice, not of identity).*

Dean's insistence that we should understand bugchasing first and foremost as practice, thus harkens back to Barad's notion of intra-action: it is the iterative agential cuts enacted by the practice of bugchasing that is responsible for the effects of boundary and fixity which we associate with an object-in-phenomena such as the 'bugchaser' or HIV-as-enemy. Relatedly, depending on the different practices and agential cuts one enacts, it subsequently becomes possible to bring-into-being different realities where bodies may take on different and/or multiple, but also always shifting, identities. This point notwithstanding, Dean's categories make clear what I take to be a key distinction between barebacking and bugchasing: the former relates to the eroticisation of condomless anal intercourse, while the latter, involves the eroticisation of HIV, its transmission and its infective processes. In other words, while the microbiopolitics of bugchasing is

associated with the active desiring and pursuit of a virus, the microbiopolitics of barebacking need not make any specific demands with regards to the kinds of interspecies ethics that the practice becomes implicated with – and this is precisely why Dean is able to distinguish between various forms of barebacking by highlighting the different ways in human and virus may enter into a relation. It is this openness that makes barebacking such a productive avenue for study since there are myriad ways in which the practice can bring together humans and more-than-humans. Additionally, if the Los Frikis remind us that questions of how we want to co-exist with microbes must always be considered alongside questions of how we want to live among other humans, what the practice of barebacking compels us to consider also is the manner in which technology may also critically intervene in these multispecies questions of co-existence. Given technological advances in the form of ART which has rendered HIV infection into a chronic disease that attacks life, but does not necessarily kill it, and PrEP, which allows for the non-fatal co-mingling of virus and human on the cellular level, these multispecies questions will only continue to intensify in complexity.

In previous chapters, I have shown that because the Child continues to reign supreme as the emblem of futurity's unquestioned value, its politics demands that we pledge allegiance to a social ordering which enacts HIV *only* as enemy and as something to be eradicated; as I have argued, the immuno-microbiopolitics of HIV associated with the politics of the Child is one that insists on the greatest degree of human-viral separation. From the perspective of the Child, what is troubling about barebacking then, is exactly its aforementioned openness, or ability to be co-opted by a multitude of other interspecies ethics that are not aligned with the politics of the Child. We might refer, once again, to Dean's three barebacking categories to make better sense of how this openness becomes differentially problematic for the Child: the greater the intention to transmit/acquire HIV in barebacking, the lower the degree of human-viral separation, and thus, the higher the risk of jeopardising the welfare of the Child.

Yet, given that the active exclusion of condom use during sex can and does happen between any number of people, whether gay or straight, male or female (i.e. not just between gay men), the furore over barebacking actually reveals another way in which the practice actually threatens the Child. Biologically 'nonproductive' when it comes to the creation of human babies, sex that occurs between two men is often taken as impotent, wasteful and useless. Involving the inmixing of sperm and shit, of life and death, it is unsurprising that homosexual sex carries with it a 'dirty' sheen of hedonism and self-indulgence that often colours perceptions of what a 'gay' lifestyle is as well. This too, is noted by Heston, who writes that the 'figure of the queer, in political discourse and popular culture, signifies selfishness, frivolity, lack, and death' (2013, p. 248). By contrast, heterosexual sex is celebrated for its (re)productivity on multiple levels: not only might a baby be brought into existence, but since the economy can only grow when opportunities for investment are present, the birth of new babies is in some sense crucial for the (re)production of economic growth and existing social structures (Lee, Mason, & Cotlear, 2010). The sort of 'nonproductivity'

associated with homosexual sex that I am suggesting here is thrown into even sharper relief in Allen Weiss's dramatic comparison of incest and sodomy (1989, p. 47):

> *The act of sodomy is emblematic of the libertine's struggle against the natural order. While incest contests the cultural order, it nevertheless remains a natural, productive act- even though it may produce monsters, as popular tradition insists. Sodomy, on the contrary, is an unproductive act, a wasteful expenditure of energy and life whereby the species is put to death in the individual, and "natural" sexual differentiation is denied in an act of sexual indifferentiation.*

It is useful to refer here to Bataille's energeticist ontology so as to fully understand what Weiss means when the terms 'productive' and 'unproductive' are invoked. According to Bataille, energy is relentlessly and continuously circulated on the surface of the globe, and its exchange and transformation proceeds in two ways, 'productively' or 'non-productively' (1985, p. 118):

> *The first, reducible part is represented by the use of the minimum necessary for the conservation of life and the continuation of individuals' productive activity in a given society; it is therefore a question simply of the fundamental condition of productive activity. The second part is represented by so-called unproductive expenditures: luxury, mourning, war, cults, the construction of sumptuary monuments, games, spectacles, arts, perverse sexual activity (i.e., deflected from genital finality)—all these represent activities which, at least in primitive circumstances, have no end beyond themselves.*

For Bataille, 'productive' activities are intimately related to what he calls the *restricted economy of limits:* this is the utilitarian economy we are all familiar with, one where 'a feeling of scarcity, of necessity reigns' (Piel, 1995, p. 103). Here, we see an alignment between Edelman's politics of the Child and Bataille's restricted economy, where what is 'productive' is that which aims at the preservation of human life and the reproduction of societal and economic structures. 'Non-productive' activities on the other hand, are linked to a *general economy of life*, where energy is always in excess and must therefore be ceaselessly expended through 'unproductive' activities (Bataille, 1991a); we can thus understand practices such as barebacking that privilege the loss and destruction of excess energy and do not in any way further the lineage of the Child, to be 'non-productive'. It is in this manner, that one might say that barebacking is doubly problematic for the Child: not only does the practice risk harming the Child in its non-insistence on the greatest degree of human-viral separation, it is also more fundamentally an issue because it is 'unproductive'.

From a more-than-human perspective however, even though homosexual sex has historically been depicted as a site of death, since, unlike heterosexual intercourse, it is unable to produce human life

(Edelman, 2004), every act of sexual intercourse (whether homosexual or heterosexual) is actually inherently productive, since in sexual unison bodies come together to allow for the amalgamation and/or proliferation of prokaryotic cells, eukaryotic cells and viruses, such that new forms of life are able to emerge. As mouth, penis and anus are entangled in a Dionysian celebration of pleasure when two or more men have sex, saliva, blood and semen are also exchanged, allowing various forms of microbial life such as *gonorrhoeae*, *chlamydia and HIV* to flourish. It is as Haraway (2008) asks, who will 'we' become when species meet? From such a multispecies perspective, since microbes are a part of everything we do (Latour, 1988), all practices are indeed productive of new becomings in some way or another. Indeed, if it is as Foucault comments that 'homosexuality is a historic occasion to reopen affective and relational virtualities' (1997, p. 138), then from a more-than-human perspective, the reopening of these affective and relational virtualities via an attention to the practice of barebacking must also necessarily take into consideration our viral companions.

It is important however, not to fall into the common trap of discussing what is 'productive' and 'nonproductive' in a categorical manner, as Bataille himself recognised that 'real life, composed of all sorts of expenditures, knows nothing of purely productive expenditure; in actuality, it knows nothing of purely non-productive expenditure either' (Bataille, 1991a, p. 12). The sun cannot but give its energy gratuitously to all on earth; the source of all growth, it gives without measure and gives without ever receiving. For Georges Bataille then, the consideration of this question of energy on a cosmic level leads him to the conclusion that contrary to common wisdom, it is excess and not scarcity, that perennially plagues the human condition. As he states plainly (ibid., p..21):

> *The living organism, in a situation determined by the play of energy on the surface of the globe, ordinarily receives more energy than is necessary for maintaining life; the excess energy (wealth) can be used for the growth of a system (e.g. an organism); if the system can no longer grow, or if the excess cannot be completely absorbed in its growth, it must necessarily be lost without profit; it must be spent, willingly or not, gloriously or catastrophically.*

This excess means that every organism receives more energy from the cosmos than is needed for its self-preservation and nature, or indeed *life itself*, is thus always already exuberant and extravagant, overflowing any and all categories (Direk, 2004). It is important to stress here that for Bataille, this excess in question is not one that exists as 'unknowable' in and by itself, outside of our engagement with it: this would simply lead to a situation where one might aim to engage with this excluded 'unknowable' so as to master it. Instead, Bataille's 'unknowable' is irreducibly related to any configuration of restricted economies we might employ for their sense-making and ordering capabilities, such that 'there is no knowledge that could in principle be available to us and that would allow us to eliminate chance and replace it with the picture of

claim of necessity behind it' (Plotnitsky, 2001, p. 20). This excess, or 'unknowable', thus also speaks to a conception of life as inherently immanent and indeterminate and try as restricted economies may via the imposition of complex categories and schemas (such as 'productive' and 'nonproductive') to contain this excess, it will inevitably fail to do so. This is not to say however that we should do away with restricted economies, for it is as Plotnitsky states (ibid., p.21-22):

> *It is crucial that [the] general economy [of life] entails a deployment of restricted economy. These relationships are irreducible insofar as general economy is the science of the relationships between what is accessible by restricted-economic means and what is inaccessible by any means, whether those of restricted or those of general economy. The inaccessible itself can only manifest itself by means of particular configurations of effects, each of which effects is manifest within a restricted economic regime, without allowing itself to be comprehended by restricted-economic means, and thus establishing the relation to the incomprehensible, the unknowable, the inaccessible. Short of engaging with this interactive dynamic, one always ends up with a restricted economy, even in the name of excess, indeterminacy, loss of meaning, and so forth.*

If life is always at the point of ebullition and it is practices that are deemed 'unproductive' that mark moments of overflow, of transgression, with which 'we find new ways of being, new outlets of expression, new capacities for investing our world with energy and concern' (Kendall, 2015, p. 84), then the goal here is to stay with the trouble of developing a thinking that on the one hand goes 'beyond the narrow limits within which we ordinarily remain, and on the other somehow bring our going-beyond back within our limits' (Bataille, 1991b, p. 14), such that we may always be receptive to moments in which we regain intimacy with the exuberance of life, regardless of how fleeting such an encounter might be (Yusoff, 2010). The aim here therefore, is not simply to take Bataille's notion of expenditure as a means to differentiate between that which is useful or wasteful such that these categories may subsequently be contested. For as much as the multispecies sort of thinking drawn on here may serve to (re)negotiate notions of 'productivity' and 'nonproductivity' by drawing our attention to the productivity associated with novel assemblages of human-microbe-technology, it is not enough. Since any theory of use value 'must first restrict the economy, or field of operations, within which it is operating' in order to be coherent (Turpin, 2017), the expansion of the notion of 'productivity' by way of a multispecies mode of thinking would simply be to move from one restricted economy to another- albeit an 'expanded' one. In so far as this 'expanded' restricted economy will help us take seriously the experiences of the 'bugchasers', it will also always be insufficient in some way for it also necessarily excludes the experiences of other individuals that may not be discussed here. What I am interested in doing instead, is to take Bataille's notion of expenditure as a lure through which we can learn to affirm play, 'to affirm structure at the expense of content', so that our thinking may always remain open-ended (Doel, 2009, p. 1061). Thinking in this register subsequently

necessitates a shift in the way one might think about 'unproductive' sexual practices like bugchasing for example, where the focus now is no longer only on bugchasing as a form of critique positioned *against* mainstream society, but instead as a practice that is oriented away from it. No longer shackled by notions of 'productivity' or 'nonproductivity', expanded, (re)negotiated or otherwise, it then becomes possible to explore some of the creative trajectories beyond the unity and coherence of the *restricted economy of limits* that this *line of flight* take us on (Deleuze & Guattari, 1988).

5.1 'Verifying' bugchasing

Returning once again to the aforementioned distinction between barebacking and bugchasing (Dean, 2009, p. 12):

> *It needs to be acknowledged that a substantial proportion and perhaps the majority of instances of barebacking combine a desire for unprotected sex with a desire to contain HIV. Plenty of HIV-negative men practice unprotected sex while nonetheless wishing to remain uninfected; correlatively, most HIV-positive men who bareback have no wish to infect others.*

Dean's observation is supported by research elsewhere, which documents how barebackers, even when dispensing with condom use, do employ safer sex methods such as serosorting (barebacking only with those who share the same HIV status) and strategic positioning (the HIV-positive partner adopting only the insertive role during penetrative anal sex) to minimise the risk of HIV infection (Elford, 2006; Halkitis, Wilton, & Galatowitsch, 2005; Parsons & Bimbi, 2007; Shernoff, 2005; Simoni & Pantalone, 2004; Wegesin & Meyer-Bahlburg, 2000). Abandoning the use of condoms need not entail the abandonment of all caution. Hence, even if barebacking is doubly problematic for the Child because HIV infection is not the goal of the practice and most barebackers actively try to reduce the chance of HIV transmission, the intra/inter-species ethics associated with bugchasing and the active desiring of HIV infection might be said instead, to be more worrying from the perspective of the Child.

It should hardly be surprising then, that bugchasing has garnered intense interest and reactions, and research attempts to empirically measure and 'verify' the phenomenon of bugchasing have also been numerous. Compiling one hundred user profiles from a now defunct bareback sex website (barebackcity.com) and analysing these profiles based on their reported HIV serostatus and the status they were looking for in potential sex partners, Dawson et al. conclude that 'while intentionally seeking to transmit or contract HIV was extremely rare, a small proportion of advertisers appeared to be relatively indifferent to HIV transmission' (2005, pp. 73–74). Similarly, in another study done by Tewksbury on 880 personal advertisements from the same bareback sex website, he found that 'no more than 1% of men

seeking bareback sex partners are also actively seeking opportunities to either become infected or infect others with HIV' (2003, p. 479) and thus concludes that there is 'little evidence of a direct link between a preference for bareback sex and an active quest for HIV infection' (ibid., p. 467). In yet another study done on the same website, Grov (2004) analysed bugchasing discourse in all profiles on the website between January and February of 2003. Out of 55,000 profiles, he found that only 81 profiles made use of common keywords among bugchasers (e.g. bug, seed, gift) to overtly display an 'intentional desire to either infect or be infected with HIV' (ibid., p. 337-338). In another study, Grov and Parsons (2006) selected 1,600 profiles which stated that they were a bugchaser or giftgiver from a barebacking website. After classifying and analysing these profiles based on the users' HIV-status and the serostatus of their desired partners, they found that 'many self-identified bug chasers and gift givers were serosorting, ambiguous, or opportunistic in their intentions to spread HIV' and conclude thus, that self-professed identity did not consistently match supposed bugchasing behaviour (ibid., p. 500). Finally, in their attempt to authenticate the existence of bugchasers, Moskowitz and Roloff examined 150 bugchasing profiles and found that 'in a rough 33%/66% distribution, one third of the group actively searches for positive partners through partner and bareback preferences, and bug chasing references, whereas the other, overwhelming majority of the group searches for the ambiguity and risk surrounding unsafe sex with a potentially positive partner' (2007, p. 355). They thus conclude that most bugchasers, despite the label, were not 'necessarily looking for seroconversion, but were looking for ambiguous situations or partners through which they could or could not be engaging in a behaviour in which HIV could or could not be transmitted' (ibid., p. 353). Based on the research summarised above, it is unsurprising then, that some have argued that even if bugchasing does happen, it occurs too infrequently for it to be a source of major concern for the field of HIV prevention. As Christian Grov, a sociologist who has authored multiple papers on bugchasing opines in a recent interview (Blum, 2016):

> *That's why, from a personal standpoint, I didn't feel like [bug chasing] was a public health crisis … If we were going to channel our resources to try to stop this epidemic, channelling them here would do very little.*

Even if bugchasers constitute a minority group amongst gay men however, there may be good reasons to avoid coming to a conclusion similar to the one Grov has. Firstly, it is important to remember, as García-Iglesias tells us, 'that people's online practices cannot be assumed to directly echo their offline behaviours: users may choose to misrepresent the intensity and/or nature of their desires and experiences' (2020b, p. 1234). Relatedly, individuals who bugchase offline, may not necessarily have an online presence. Of course, any distinctions made between the 'offline' and the 'online' here is merely tactical: we surely experience both spheres in overlapping ways (Mowlabocus, 2010; Race, 2015; Tziallas, 2015) that make any insistence on a strict separation between them untenable. This problem is further compounded by how the websites

used for study in the aforementioned research, have since become obsolete. Men now use a variety of other internet platforms such as Twitter and Tumblr, or location-based social media apps such as Grindr, Scruff and Recon, as part of their bugchasing practices – there is a need thus, for research on bugchasing to be updated if we are to be able to evaluate fairly if bugchasing is a public health crisis or not. As García-Iglesias explains (ibid.):

> *… there is no available research on alternative sites, such as Twitter, Tumblr, or different platforms, such as smartphone GPS-based dating apps (e.g. Grindr). Each of these sites presents unique affordances and limitations which generate distinct environments: whereas some may be constructed as a place to find willing partners (e.g. Scruff, NastyKinkPigs), others may be more apt for the exchange of pornography (Tumblr). In order to assess users' behaviours on these sites, their experiences of them, and the reliability of their online statements, we need to consider the intense processes of mediation that the sites generate. This task has only been undertaken by a few scholars, and none explicitly looking at bugchasing sites.*

There is also a danger inherent in Grov's conclusion about bugchasing. Note how Grov's comment about bugchasing not being a public health crisis occurs in the context of halting the HIV/AIDS epidemic. Stated otherwise, for Grov, the problem of HIV is problematised in what I have previously argued to be an immunological register and bugchasing is relevant only in so far as it can be made sense of in relation to viral eradication/elimination. Subsequently, insofar as we agree with the aforementioned research that bugchasing is not a matter of concern for the HIV/AIDS epidemic, then what this ultimately does is to render the practice of bugchasing *irrelevant* and *uninteresting*. This is a vicious cycle, since as an uninteresting practice, bugchasing then also becomes excluded from the realm of successful problem formation and solution – it has been robbed of the power to make a difference to our thinking, and possible ways in which bugchasing might help us problematise the problem of HIV differently, have been foreclosed. The crux of the issue lies in how bugchasing is pathologized and positioned *against* mainstream society, which subsequently shapes our research orientation. As Sara Ahmed points out, orientations 'are about how we begin, how we proceed from here' (2006, p. 545), and it is no wonder then, that bugchasing research is often focused on verifying and subsequently, curbing if necessary, the organised sharing of HIV-infected semen. As one commentator notes, recent academic work does tend to approach bugchasing in terms of 'asking what motivates men to bareback and how they might be discouraged from doing so' (Dean, 2009, p. 4). Such research is numerous and draws for example, on a variety of theoretical and methodological approaches in their study of bugchasing: Deluezian ideas (Holmes & Warner, 2005); metaphor analysis (Hammond et al., 2016); the Bakhtinian carnival (Graydon, 2007); the role of semen (E. Reynolds, 2007); film analysis (Gonzalez, 2010); and the queer utopian potentiality of bugchasing (Robinson, 2013). Various motivations have been reported to be implicated with the practice of

bugchasing. It has, for example, been described as a form of rebellion by men against mainstream health norms, a backlash against the historical imposition of 'safe sex' as the only viable way to have sex (Crimp, 1987; Crossley, 2004; Patton, 1990); some have also argued that the progression of HIV from a previously fatal diagnosis to a manageable chronic condition could also have facilitated complacency with regards to HIV infection (Gauthier & Forsyth, 1999; Gonzalez, 2010; Power, 2011); while some others have suggested that bugchasing may be a way for these men to resolve their anxiety over the ever-present threat of HIV infection (Dean, 2009, 2011; Gauthier & Forsyth, 1999; Hammond et al., 2016; Moskowitz & Roloff, 2007), and achieve some semblance of agency over the time and manner of their infection in the context of an ever-looming HIV threat (Grov & Parsons, 2006).

5.2 Depathologising bugchasing

In *Adventure of Ideas*, Whitehead opines that it 'is more important that a proposition be interesting than it be true' (1933, p. 244). What I will try to do in this section thus, is to approach bugchasing not as an already well-defined problem for HIV prevention, but as a lure through which we may rethink what is *interesting* about bugchasing in the first instance. In other words, if the aim here is to understand bugchasing not as a form of critique positioned *against* mainstream society, but instead as a practice that is oriented away from it, then it becomes necessary first to depathologise bugchasing – a task requiring the immuno-microbiopolitics of HIV prevention to become but one element amongst many others that is considered alongside bugchasing (as opposed to it being the only parameter against which bugchasing is considered). Subsequently, this depathologisation also allows me to take seriously the complex emotions and desires that were bubbling in my chest not too long ago, when I stumbled upon the following on a certain online forum:

> *He then bent over and let me enter his love canal. I told him I was poz and he said it didn't matter. I screwed his ass till I saw specks of blood flowing down his legs and into the drain. It had been a while since I last fucked dry (I know it was in the shower but all the soap had been rinsed away and his ass), so I really ripped up Lenny's ass, and eventually I shot a huge load into him. At that point we both collapsed against the tile seat. I turned the water off and handed him a towel, I apologized for such a savage fuck but he said he enjoyed every moment.*
>
> *We got dressed and were about to leave when I asked him why my status didn't matter to him. He replied he already was poz, and that he got it from a former 18 year old swimmer (who, as it turned-out, I had fucked after his graduation from high school a year earlier). They had been best buds and have been passing the bug back and forth for the last six months - as well as breeding*

anyone who answered their ads on A4A and BBRT and CumHunt. So I had created two gifters from my stable of boys I had bred since getting the bug.

Taken from *breeding.zone*, an online forum focused on barebacking, the titillating paragraphs above are part of a fictional multi-part story entitled 'Converting the Team', written by user Rawdad4sons on 2 October, 2012 and is centred around Frank and his bugchasing adventures. While the story is one of many others that users write and share on the 'BugChasing and Gift Giving Fiction' section of the website, it is also one of the more popular ones – as of November 2020, it has more than 92,000 views and over 100 replies and comments. Unsurprisingly, the story is wildly popular and comments commending the author's talent at crafting erotic literature, abound:

Love this story! So hot thinking about how the demon seed is being spread all over by young poz twinks! (RawDK, November 15, 2012)

so fuckin hot I've cum 5 times reading this and can't wait for more wish that there were more gifters in my area. (sam_puppy, December 8, 2012)

Brillant story, keeps you hard and cumming, just wish I met someone like this when I was younger, keep the installments coming. (pozguy, December 22, 2012)

As the comments above attest, there is clearly something about flirting with a deadly virus which resonates with the desires of (some?) gay men, that inflames our passions, and cajoles us to identify and agree with it. In so far as these tales of bugchasing and giftgiving are fictive, it is perhaps vital that I address the elephant in the room: might one not discount the importance of these stories on the basis that they may not necessarily correspond to what gay men are actually doing with HIV? Indeed, as those familiar with bugchasing might note, this concern regarding a possible mismatch between the unreality of bugchasing fiction and reality itself, is not unique to bugchasing erotic literature – it extends almost to every sort of discourse on bugchasing. Stated otherwise, when the topic of bugchasing is broached, it is either met with disbelief and/or understood to be *purely* fantasy. This is clearly evident from the large corpus of research highlighted above that is dedicated to 'verifying' and quantifying bugchasing. One more example shall suffice then: a popular BBC article on bugchasing. Aptly titled *'HIV 'bug chasers': Fantasy or fact?'*, in it, Will Nutland, a prominent HIV social research scholar plainly states that the 'concepts of "gift giving" and "bug chasers" are definitely based more in fantasy than reality' (Pendry, 2006). Yet, if we recall how '"bugchaser" and "giftgiver," like "top" and "bottom," are merely temporary crystallizations of desiring positions that can be occupied, albeit at different moments, by the same individual' (Dean, 2009, p. 71),

Nutland's insistence on understanding bugchasing via the fact/fantasy distinction, then seems misplaced. Indeed, we can diagnose this oft taken for granted association between bugchasing and fiction to be (ibid.):

> *… a telling artefact of how our culture thinks about sexuality in terms of identity that research studies even attempt to quantify the number of bug chasers, gift givers, and now anti–gift givers. Everyone wants to know how many bug chasers and gift givers are out there, as if these expressions of subcultural nomenclature designated specific categories of persons amenable to classification, enumeration, and ultimately regulation.*

Unsurprisingly, this fixation with identity vis-à-vis the fact/fantasy distinction can make it difficult to see all the other ways in which bugchasing might matter beyond a damaged-centred framework, thus also distracting us from the task which I have set myself – to use bugchasing to rethink what public health finds *interesting* in the first instance. It must thus be emphasised from the get-go that when deliberating on my encounters with bugchasing and bugchasers in this thesis (be it though erotic stories, newspapers or academic research), my focus will be firmly centred around exploring bugchasing's speculative and *productive ethical potential* – and not on the fact/fantasy distinction. In other words, I am interested in how bugchasing discourse might help to depathologise bugchasing via its creation of different spaces where novel modes of co-existence with more-than-humans is possible. It is this fictionality, as one scholar argues, that 'allows us to gain insight into bugchasing discourses in an "idealized" world not marred by biological, medical or daily considerations' (García-Iglesias, 2020a, p. 6). Two points follow. Firstly, even as I agree with the utility of fiction in facilitating thought, is it not the case that all fictions are always already somewhat grounded in reality and somehow shaped by constraints in the present (see Beckert, 2016)? Stated otherwise, my worry here relates to what might be obfuscated when we employ too rigid a dichotomy between what is 'real' and 'idealised'. The futility of this distinction can be better discerned when we refer to the etymology of the word 'fiction': it derives from the Latin verb *fingere*, which means to shape, to construct, to form, to build. The creative roots of the word thus suggests that even as fiction contrives of a world of its own and may not be strictly bound to the empirical, it can also simultaneously shape the 'real' by adding to it. As Ricoeur aptly states, fictions 'do not refer in a 'reproductive' way to reality as already given, they may refer in a 'productive' way to reality' (1979, p. 126). After all, did anthropologist Arjun Appadurai (2013) not make clear the manner in which imaginary futures participate in the construction of the modern subject? World-making is always part fictive activity and part material practice, and any future that is imagined cannot be divorced from the here-and-now that is brought-into-being. Or as Beckert states, fictions 'have the capacity to open and unfold new dimensions of reality, thus adding new layers to it' (2016, p. 64). In this manner, our encounter with 'Converting the Team', and its sensuality and accompanying ability to arouse should be taken as a cause for pause, for it may have something to tell us – *if we let it* – not only about how bugchasers envision possible futures, but also how we could live differently

with pathogenic more-than-human others. Secondly, even as one recognises fiction's productive potential, one can also read García-Iglesias's comment as alluding to the danger of effacing technical considerations in relation to bugchasing. Consequently, my analysis of bugchasing below will engage explicitly with HIV-related technologies such as HIV testing and phylogenetic analysis so as to illustrate how current scientific (in)capabilities become crucial to the bugchasing experience.

As it may already be intimated, my analysis of bugchasing owes much to Tim Dean's extensive research on the subject (2000, 2008, 2011, 2012, 2015), and draws heavily in particular, on his seminal study of barebacking culture, *Unlimited Intimacy* (2009). The book's rich ethnographic detail aside, there are several reasons for this. Firstly, he states early on in the book that (ibid., p. 3):

> *Rather than either condemning or excusing bareback sex, I would like to defer judgment about it in order to open a space in which real thinking can occur—thinking that is not constrained by assumptions about what barebacking must represent.*

As he explains, his reason for doing so is that (ibid., p. 4):

> *Media and academic discourse on the subject manifests an almost irresistible tendency toward "othering" bareback sex as deviant or pathological. In this book, by contrast, I am curious about what might be learned if bareback subculture were to be investigated without that assumption.*

It is clear that there is much which reverberates between Dean's approach in *Unlimited Intimacy* and that of my own, in that we are both committed to the depathologisation of bugchasing. I am, as Dean puts it, *promiscuous* – the term he uses for the 'discovery of the new, a synonym for creativity' (Ibid., p. 5) – because I am hungry to explore how bugchasing might impregnate the world with novel difference. It is this shared promiscuity, which makes Dean and his *Unlimited Intimacy* wonderful companions on this adventure with bugchasing that I wish to embark on.

In addition, while *Unlimited Intimacy* is primarily a work in which Dean draws on psychoanalytical theory to make sense of the eroticisation of bareback sex, it is my intuition that certain portions of the text is not only well-suited, but would also benefit greatly from a multispecies re-reading. The potential for a posthuman interpretation of Dean's work can be plainly seen in the way he speaks about bugchasing (Ibid., p. 17):

> *Far from being indifferent to HIV, those who identify as bugchasers have made the virus central to their erotic lives. They are having sex not only with other men but also with a virus.*

Dean's multispecies leanings can also be glimpsed, later on, when he writes the following:

> *The peculiarity of this kind of sex thus resides in its deliberate involvement of a pathogenic parasite; in a sense, bug chasers and gift givers are having sex with a virus as well as with each other. They have opened their bodies to intimate relations with nonhuman life.*

This attunement to the more-than-human finds its fullest expression, in my opinion, in chapter one of his book. In particular, in this chapter dedicated to examining the practice of bugchasing, one section is entitled '*How to do things with HIV*' – a title, that would look very much at home in any of the more recent work on multispecies ethnography I discussed earlier. This is the section of the book in which Dean delves into the biosocial mechanics of viral transmission and illustrates how HIV infection becomes a means through which new and lasting human/more-than-human connections are forged and consolidated – and will also be the part of the book that I am predominantly concerned with here. It seems to me then, reasonable to read Dean's invitation to think of bugchasing as 'an arena of invention that involves experiments in how to do things with viruses' (ibid., p.47) as a posthuman one, and I want thus to engage with *Unlimited Intimacy* using the multispecies framework and concepts I have developed in this thesis. In other words, by reading Dean's work through a multispecies lens, my focus will not only be on why men eroticise HIV and bareback sex, but also on how the practice of bugchasing is implicated in novel modes of being-with others. In this manner, the book and its bugchasers will become the material from which I will be able to tell multispecies stories of the shifting boundaries between the human and more-than-human.

5.3 Life, death and bugchasing

Early on in the first chapter of *Unlimited Intimacy*, Dean tells us that for some bugchasers, being 'HIV positive is like having a war wound or a battle scar' (ibid., pp.52). In support of this, he directs our attention to the mission statement from *bareback.com*, a popular website and online forum championing 'gloveless' sex:

> *Welcome to the new BAREBACK.COM. We are the premiere home for all you studs who crave the feeling only raw sex can provide. Who's afraid of the big, bad bug? Not our little piggies. We'll huff and we'll puff and we'll blow your Dick Down! Chase those bugs all over town like the horny toad you are. Get dangerous and seek out new perversions and new fetishes.*

Pointing out that in 'bareback subculture, as in the military or college fraternities, masculine

status is achieved by surviving a set of physical ordeals, including multiple penetrations, humiliations, piercings, tattooings, brandings, and infections' (ibid.), Dean subsequently positions seroconversion as a challenge to gay men's masculinity. As the question *'Who's afraid of the big, bad bug?'* above implies, HIV infection is but another trial that men may use to prove their mettle. I am hesitant, however, to endorse Dean's argument: my own interactions with bugchasers in London have certainly not left me with a sense that their pursuit of HIV infection was for the sake of 'conquering' HIV and proving their manhood. Additionally, at the time of writing, the mission statement that Dean cites can also no longer be located on the website. Instead, what can be now found across the different sections of the website are messages that encourage safer sex and stress the importance of HIV containment:

> *That's why we embrace a policy of containment. What does that mean - It's simple. If poz boys stick to poz boys and neg boys stick to neg boys AIDS will be over. It's just that simple. So, not to beat a dead horse let's do a little summary of the advice above … pull the fuck out if you have to! If you end up fucking a boy who does not know his status shoot your load on his ass, his back or his chest. You want to slay him with your love - not your seed! (bareback.com)*

The removal of the original mission statement and the change in both the tone and content of bareback.com's messaging regarding HIV infection raise important questions around the currency of Dean's argument – might the website's change of tack be reflective of a shift amongst gay men away from the sort of masculine, danger-seeking logic associated with HIV infection that Dean argues for? This criticism notwithstanding, Dean is surely right about one thing: HIV infection is indeed a challenge. I want to suggest however, that we understand this challenge as pertaining not simply to one's masculinity, but more broadly to the difficult task of working out how we might live differently with a pathogenic microbe. Dean himself hints at this expanded reading when he deliberates on how bugchasers are betraying 'a distinctly medicalized understanding of what counts as health' (ibid., p. 60). Pointing out, as I did in chapter two, that the imperative of health is such that everyday living has now become a never-ending exercise in risk management, he argues subsequently that bugchasers might be understood as wanting (ibid., p. 66):

> *… to resist normalizing power, to express scepticism regarding mainstream ideals of health and risk-avoidance, and to learn how to live with mortality.*

In seeking out the virus as an act of defiance against the normalising demands of the imperative of health, HIV thus becomes more than a pathogen for these bugchasers – as it was for the Los Frikis, here, HIV too, is brought-into-being as a tool of political resistance. But from a multispecies perspective, Dean does not go far enough in recognising the radicality of what bugchasers are doing: it is not simply political resistance and scepticism regarding mainstream ideals of health and risk-avoidance that bugchasers are expressing,

rather, by bugchasing and engaging in relational experiments with a deadly virus, they also espouse a microbiopolitics that is antithetical to that demanded by HIV prevention. The bugchasers' microbiopolitics may very well lead to death, but it is in the refusal of death-denial, that possibilities for living differently with pathogenic microbial others become available. In a manner entirely reminiscent of my previous discussion of death-denial, Dean points out that (ibid., p. 65):

> *By idealizing optimum health as the human body's normal state, our culture has marginalized death. Too often death is regarded as a sign of either medicine's technological failure or the deceased's moral failure to consistently practice risk avoidance. By making death external to life, we no longer know how to die. Death has been added to the list of health hazards to avoid: it is regarded as dangerous for your health.*

Recognising that the bugchasers eschewal of death-denial has important implications for the proliferation of novel modes of being in the world, he then ruminates on the philosophical and ethical potential of the practice (ibid., p. 66):

> *… To the extent that bug chasers aspire to die in their own way, bug chasing could be considered a philosophical practice, in the traditional sense of philosophy as a discipline in mortality. Barebackers embrace the human finitude that modern life, especially modern medicine, has become expert in disavowing. We might say that, in their quest for unlimited intimacy, barebackers are taking on the fundamental limit of death that defines us all; they are fucking without limits precisely because they don't want to live forever. In its more committed forms, barebacking thus offers a different perspective on the future.*

I am in agreement with the complex relations between bugchasing, death and futurity that Dean sketches above. As I shall examine below however, given that one of the most fascinating (and compelling) things that bugchasers are doing with HIV is to *create* and *birth* new forms of life, Dean's analysis is inadequate insofar as it approaches finitude solely in terms of mortality. This tendency to conceive of finitude-as-mortality undergirds much of western philosophy (see section 3.2) and is also noted by Anne O'Byrne (2010) in her book, *Natality and Finitude*. Chiding Heidegger for his 'prioritization of the event of death in his existential analytic of Dasein' (Van Camp, 2015, p. 112), O'Byrne points out that as illuminating as Heidegger's *magnum opus* is, because it approaches 'finitude as initially and for the most part mortal finitude, Heidegger sets himself squarely in philosophy's necrophilic tradition' (2010, p. 3). This manner of approaching finitude as a forerunning towards death can be traced back to as early as the first century BC, where, in a series of meditations, Lucretius asks (1969, pp. 973–977):

> *Look back now and consider how the bygone ages of eternity that elapsed before our birth were nothing to us. Here, then, is a mirror in which nature shows us the time to come after our death. Do you see anything fearful in it?*

As is well known, the passage above is a succinct reminder of the foolishness of fearing death, but for O'Byrne, what is additionally valuable about Lucretius's exhortation is the mention of birth, for it reminds us that (2010, p. 2):

> *… we are finite by virtue of the end we will meet when we die, cutting us off from the great expanses of time that will follow, but also by virtue of the beginning we had when we came into the world, when the irruption of our birth put an end to the ages of eternity before, transforming those ages into the time when we were not yet.*

This natal temporality, O'Byrne argues, subsequently reminds us that even as death delivers us from the world, we are all also born into a world that is already old and 'not of our making and to a past that we have the impossible task of making our own' (ibid., p. 6). This historicity that O'Byrne refers to, thus leads her to conclude that we are all *generational beings*. Subsequently, the manner in which finitude can be thought differently by taking seriously *both* birth and death as its living 'markers' can be summarised as such (ibid., pp. 6–8):

> *We are natal, generational beings. That is to say, we are generated by our parents; we become a generation in the company of our contemporaries; we are capable of generating, in turn; we eventually pass away … Our living finitude means that we are never finished. We exist in a state of being finite that is metabolic, developmental, and generational and that we experience as growth and transformation. It is what displaces us in the phenomenon of sexuality and the event of the sexual encounter and what confronts us in the fact of begetting and bearing children. It is a way of being that is always in motion such that we are never wholly and simply present but are always un-finished, in-finite.*

O'Byrne's insight that we should think finitude in dynamic terms, as contracting and expanding as we grow with the worlds we inhabit, is surely important. Yet, insofar as *Natality and Finitude* treats birth solely as a matter of and for the human womb, my engagement with O'Byrne's work from a multispecies perspective will necessarily also require the consideration of birthing practices – like bugchasing – that span across species. *How might natality help us see bugchasing differently then?*

The manner in which bugchasers become progenitors and inheritors of their worlds through viral infection is explained by Dean as such (ibid., p. 77-78):

> *Gay men have discovered that one of the things they can do with HIV is use it to create solidarity and form communities … HIV transmission has the potential to create social bonds that are both symbolic and material; membership is etched into the body like a tattoo … Bugchasers believe that being HIV positive makes them part of a gang; those with whom they share the virus are known as their "bug brothers." "I wanted to be positive because I wanted to belong," explains one young man. Countering the image of the person with AIDS as an isolated outcast, voluntary seroconversion has come to be understood as a new basis for community formation. In this way, the stigma associated with HIV has been embraced as a badge of honour.*

Membership to the bugchasing fraternity has its benefits, which American pornographic performer and writer, Scott O'Hara – notorious for being openly one of the first advocates for bareback sex – succinctly summarises as such (1996, pp. 83–84):

> *I've had many worse things happen to me than being infected with HIV; most of them resulted from long-term relationships, which our society regards with benevolence. Being Positive, in the current climate of fear and anger, is the best thing that could have happened to me. I look around me at the Negative world, and I see men who are in the closet about their desires: mustn't admit to wanting to get fucked — mustn't admit to liking rimming — mustn't admit to drinking piss — mustn't admit to frequenting sex clubs or bathhouses … Having AIDS has, in the long run, given me back my sexuality and my voice … Because I know, first-hand, the advantages of being Positive, I don't feel the need to warn people away from the virus.*

Much like how the acquisition of HIV became *in itself* what it meant to be a Friki, here we see how viral consanguinity becomes for these bugchasers, the basis of a new form of HIV biosociality, a novel way of life coalescing around the entanglement of viral and human bodies. Recalling my discussion on *diffracted biosocialities,* which insists that the biological and the social are always in a process of mutual co-constitution, the formation of bugchasers' local biologies must be understood as inseparable from the myriad ideals, shared practices and normalising forces that operate in mainstream society – these can be, as discussed above, related to health, risk-avoidance, immuno-microbiopolitics and conceptions of masculinity. Yet, it is crucial not to lose sight of how the local biologies that emerge out of the practice of bugchasing also simultaneously shape the social by creating 'social bonds that are both symbolic and material'. Dean suggests that we might understand these social bonds as such (2009, pp. 85–86):

> *… the man whom one infects with HIV becomes his sibling in the 'bug brotherhood' at the same time that one becomes his parent or 'Daddy,' having fathered his virus. If this man also happens to be one's partner or lover, then by 'breeding' him one has transformed what anthropologists call a relational affine into a consanguine; one's 'husband' has become one's 'brother' via a shared bodily substance.*

Or, as Garcia-Iglesias puts it (2020a, pp. 6–7):

> *Vertical modes of sociality would be those that parallel reproductive heterosexuality, whereas the horizontal ones would provide alternative forms of brotherhood, friendship, and alliance.*

Both vertical and horizontal modes of sociality can coexist, and this is clearly illustrated in the previously quoted 'Converting the Team':

> *We got dressed and were about to leave when I asked him why my status didn't matter to him. He replied he already was poz, and that he got it from a former 18 year old swimmer (who, as it turned-out, I had fucked after his graduation from high school a year earlier). They had been best buds and have been passing the bug back and forth for the last six months - as well as breeding anyone who answered their ads on A4A and BBRT and CumHunt. So I had created two gifters from my stable of boys I had bred since getting the bug.*

Frank (i.e. the story's protagonist) is the 'father' to the 18-year-old swimmer, who in turn, is 'father' to Frank's current sexual partner; at the same time, the three men are also 'best buds' and siblings in the 'bug brotherhood'. Whereas Weiss chose to pit incest against sodomy, in the context of bugchasing, incest and sodomy become one and the same, since the practice simultaneously transforms all parties involved into brothers, fathers and sons. The 'fantasy of bearing someone's child or, indeed, of becoming someone's child is not gender specific or a function of sexual orientation' (Dean, 2009, p. 87) and here we see how the bugchaser's desire to both have and be a child manifest in barebacking-as-incestuous-sex, which allows any man able and willing to open his body to viral life, 'to reproduce without women, giving "birth" not to newborns but to the newly infected' (Graydon, 2007, p. 288). If bugchasing's vertical mode of sociality parallels that of reproductive heterosexuality, then HIV seroconversion is arguably akin to successful insemination – children are produced in both, except in the former, the offspring that emerges is one that relies explicitly on viral infection, or the coming together of two different species. It is in this manner, that alongside the human identities of bugchaser, giftgiver, father and child, the practice of bugchasing also simultaneously brings-into-being HIV as an intricate and unique generator of life – and life here refers not only to the emergence of novel biosocialities, but also to the literal creation of new 'children' that are

human-viral hybrids. Any 'distinction between breeding a baby and breeding a virus may [indeed] come down to a question of perspective' (Dean, 2009, p. 87) and here, I join other scholars in queering the notion of birth. Writing about American trans* performance artist *boychild's* performance of Cyril Hahn's remix of the song 'Say My Name' (originally by Destiny's Child), Chloe Turner (2020) argues for example that remixing should be understood 'as an agitative, queer design practice' since it 'enacts a contagious kin making that simultaneously ventriloquises previous trans*cestors and acts as a future trans*birthing practice'. As Bychowski points out, because 'trans people have long found ways to live with community and tools that were not built' (2018, p. 660) for them, trans* world building is ultimately also the cultural remixing of normative society. Viewed as a form of remixing, bugchasing (like trans*cestry) thus also leads us to 'to step away from normative understandings of genealogy, shared family pasts, forms of remembering, and consistent and uninterrupted lineage, to instead render space for the rhizomatic shifting of family formation into webs of trans* belonging and radical birthing … which cross gender/space/time borders' (C. Turner, 2020). Radical birthing may also require us to think across familiar species boundaries. Heather Davis, commenting on the presence of 'microplastics' in our oceans, notes how they are 'becoming rafts of biodiverse ecologies for bacteria and viruses' and that in time, 'it is quite likely that these vibrant attached communities may develop complex bacterial societies, flourishing on their synthetic surfaces, eating each other and the vast sources of unlocked carbon energy, mutating and evolving' (2015, p. 235); at the same time however, these plastics are also 'directly interfering with our reproductive systems, and over time, our ability to reproduce'(ibid., p. 237). Our plastic use can thus be thought of as a birthing practice and Davis suggests that we think plastic as our toxic progeny, a 'non-filial … bastard child that will most certainly outlive us' – an offspring, which will go on to also birth its own slew of strange new microbial life forms even as it threatens fauna with extinction (ibid., p. 232). The ways in which we acknowledge different types of birth can be thus said to be inextricably tied to 'the affirmation of … certain kinds of life, and certain value systems according to which life and reproduction are understood'(Neimanis, 2014, p. 109).

It should be clear at this point that even as HIV is a pathogenic source of death for the Child, the intentional transmission of the virus by bugchasers cannot be understood as unequivocally destructive and fatal; bugchasing is also simultaneously creative in its viral birthing and invention of 'a different version of the queer future to which HIV transmission nevertheless remains central' (ibid., p. 69). Returning once again to Edelman, for him, queers are those that 'figure the bar to every realisation of futurity, the resistance, internal to the social, to every social structure or form' (Edelman, 2004, p. 4). Put simply, Edelman's queers are those who threaten the *logic* of futurism; they respond with a resolute 'no' to every form of politics and act and live only for the here and now. In this manner, while bugchasers are surely queer, they cannot be Edelman's queers because in this alternative future where HIV transmission is sought after, bugchasers as (aspiring) human-viral children, continue to invest in the Child, even if it is now more-than-human. Regardless of the version of the future with which we are presented with then, there is a conservatism at

the core of *all* politics and their associated forms of futurity because the logic of futurism is such that 'taking any side at all necessarily constrains one to take the side of, by virtue of taking a side within, a political order that returns to the Child as the image of the future it intends' (ibid.). Yet, even as bugchasers continue to reproduce the logic of futurism, they remain important to think with because of how they think of the children differently: 'queerly, [and] not through the prescriptive and tightly focused lens of genetic replication and disciplinary deferral but in a hopeful celebratory spirit of tantalisingly blurred anticipation' (Walters, 2018, pp. 68–69). From a multispecies perspective, the point I am suggesting here can be understood as such: the Child in reproductive futurity needs protection from HIV because it is figured anthropocentrically and as 'purely' human; the bugchasers' queer Child on the other hand, is posthuman and flourishes with the opening of bodies, both human and viral, to each other. Relatedly, if it is the case that 'the fantasy subtending the image of the Child invariably shapes the logic within which the political itself must be thought' (ibid., p. 2), then posthuman inquiries into what 'we' might become when species meet *must* also be accompanied by considerations regarding the kind of futures we want. Paraphrasing Haraway then, it is not simply about who 'we' will become when species meet, but also about what we want the Child to become, when the human, more-than-human and non-human meet. Additionally, by providing us with a more-than-human image of the Child, bugchasers disrupt the anthropocentricism of predominant notions of futurity by bringing to the fore how actions that may be bad for the human body may actually be good for the flourishing of planetary life. For example, when we consider how the human population is 'almost certain to reach more than 11 billion people by 2100 … a 9-billion-person increase over 150 years' (Haraway, 2016, p. 4), bugchasing and the human death it invokes may arguably be ethically laudable insofar as it helps curb the destructive environmental effects of exponential population growth. A 'virus deemed "bad" for the body could [thus] become "good" for the community, the population, or the biosphere' (Kirksey, 2018, p. 12) and the life-generating capabilities of HIV might be said to therefore exceed that of the human-viral hybrid child. Life (whether human and/or more-than-human) will continue to flourish even if the threat of human death looms large and depending on our scalar perspective thus, HIV can take on different values and be brought-into-being differentially.

While both futures discussed above may be similar because they adhere to the logic of futurism, there is also a crucial difference between them. As I have made clear in the thesis thus far, because microbes are omnipresent, the task of keeping human and viral bodies apart is not only never-ending, but also arguably, impossible. The bugchasers' queer future however, is far from impossible since viral infection can and does happen quite easily and frequently. This (im)possibility, is important. It is the impossibility of this aseptic future that makes the perennial 'deferral of personal access to jouissance' necessary (Walters, 2018, p. 66). More generally speaking, it is the impossibility of any envisioned future that fuels its tyranny; Edelman's criticism of 'the fascism of the baby's face' can hence be said to be grounded in this impossibility (2004, p. 75). On the contrary, for bugchasers, it is their investment in viral infection and the prioritisation of sexual

fulfilment in the present which makes real the posthuman future they desire. Two points are worth highlighting here. Firstly, this difference in the way each respective future relates to jouissance, can be understood temporally: with no end in sight, the aseptic future cannot afford to prioritise the present; in being realised upon HIV infection, the bugchasers' posthuman future has a much shorter time span and thus, need not make as stringent demands regarding the extent to which the pleasures of the here-and-now must be deferred. Subsequently, this suggests that as opposed to Edelman's insistence that the only way to resist the tyranny of the logic of futurism is to eschew any form of futurity, an attention to temporal limits may also allow us to conceive of different futures that even as they draw on the logic of futurism, may still offer a (weaker) form of queer resistance. Against Edelman's insistence on the primacy of the present for queers, perhaps it is possible then, as Munoz argues, that the 'future is queerness's domain' (2009, p. 1). Secondly, Dean argues that the bugchasers' version of the queer future is a response against the normalising demands of the imperative of health (and ultimately, reproductive futurity); insofar as we agree with Dean, then the manner in which bugchasers want to prioritise sexual fulfilment in the present must also be viewed as related to the conditions reinforcing reproductive futurity. Both futures are thus enmeshed in what Michael calls an 'ecology of futures' (2017) and it is important thus to be sensitive to how different futures intra-act to bring-into-being their respective temporal vistas.

5.4 HIV testing, phylogenetics and viral indeterminacy

While it is certainly the case that on a cellular level HIV infection might occur when bodily fluids are exchanged between two or more serodisconcordant bodies, we only come to know of such human-viral entanglements via HIV testing. It is not lost on bugchasers that a positive HIV test result could very well put an end to the sexual enjoyment they get out of bugchasing, since part of its erotic appeal relates to the *active pursuit* of viral infection. Bugchasing thus also requires the *active management* of one's relation to HIV testing. It is hardly surprising then, that some bugchasers actively avoid taking a HIV test 'so that each unprotected encounter may be imagined as the one that transmits the virus' (Dean, 2008, p. 53). Thus, even if HIV seroconversion is a unique event (i.e. much like losing one's virginity, it can only happen once), by refraining from doing a HIV test and obtaining knowledge of one's serostatus, bugchasers turn what is supposedly an unrepeatable event into something that can be *practiced*. Through their refusal to take a HIV test, bugchasers transform a future that they can achieve, into one that they will never realise; much like the aseptic future discussed above, the bugchasers' future now too becomes one that has no end in sight. Yet, despite this similarity, a crucial distinction between the two obtains: in aseptic futurity, the present is a means towards a 'better' future; in the bugchasers' futurity, the future serves as the engine through which pleasure in the present can be infinitely renewed. Relatedly, if men 'have no guarantee that they are gifters, that they are having sex with gift givers, or that the sex being had has bestowed the sought-after gift', then as Brintnall rightly highlights, it is bugchasing's 'structure and attendant fantasies … [that] are the

principal coin of the realm' (2015, p. 58). Stated otherwise, it is the indeterminacy effected by not taking a HIV test that facilitates the fantasies of paternity and fraternity associated with bugchasing. Additionally, it is important to note that bugchasers who have not taken a HIV test are also less likely to be on ART, especially since the administration of a HIV test is the first step in HIV care cascades (MacCarthy et al., 2015). In the absence of medical treatment, the viral loads of bugchasers who are already HIV-positive (even if unbeknownst to them) will also tend to be higher; a higher viral load translates to greater infectivity and increased HIV transmission. In other words, the way bugchasers manage their realities and fantasies cannot but impinge on each other: abstaining from a HIV test allows the continued pursuit of bugchasing and yet, this fantasy of seronegativity contributes in turn, to a higher chance of infecting others. It must be emphasised once again then, that instead of insisting on a strict separation between fact and fiction, it may be more productive to understand the two as engaged in a constant process of mutual enfolding. The creation of a queer future in which HIV transmission remains central is thus entwined not only with the experimental ways bugchasers negotiate their entanglements with human and viral others, but also with the manner in which they manage their relationship with fantasy and reality.

A positive result for a HIV test (whether serological or virological) only conveys information about whether one is HIV-positive or not. The task of ascertaining one's viral paternity, or origin of HIV infection, is a separate undertaking often involving the use of phylogenetic analysis, or 'the study of the degree of relatedness between HIV genetic sequences' (E. Bernard, Azad, Vandamme, Weait, & Geretti, 2007, p. 383). Employing 'the cumulative similarities and weighted polymorphisms found in collections of sequences to build a graphical representation of genetic relatedness' (Brooks & Sandstrom, 2013, p. e348), the specifics of HIV phylogenetic analysis are extremely complex – and beyond the scope of the thesis – but its working logic can be surmised as such (Pillay, Rambaut, Geretti, & Brown, 2007, p. 461):

> *Because HIV-1, like other RNA viruses, evolves rapidly, the virus isolated from independently infected people is typically distinct. The extent of similarity between viruses from different people is associated with the likelihood of a common source of infection. Within infected people, viral populations expand from a small initial population, and the viral genome can change during chronic infection by up to 1% each year. Thus, an onward transmission, if it occurred sometime after initial infection, is likely to involve a strain distinguishable from the host viral strain.*

As some scholars note (Abecasis, Pingarilho, & Vandamme, 2018; Brooks & Sandstrom, 2013; Pillay et al., 2007), in HIV forensics, there has increasingly been a turn towards phylogenetic analysis such that it is now often presented in HIV transmission criminal investigations not merely 'as scientific evidence to determine whether the defendant and the complainant share similar HIV strains', but also as 'definitive evidence of the source, route, direction and timing of HIV transmission' (E. Bernard et al., 2007, p. 383). Yet, it is

important to note that 'finding two HIV sequences that are similar does not prove a direct physical connection between the individuals infected with those viruses' (Brooks & Sandstrom, 2013, p. e349). The crux of the matter is that HIV-positive individuals are *always already* part of a wider transmission network; as I have argued thus far, it is precisely because individuals in such networks are related to each other via HIV that a sense of bonding and arousal is generated. The upshot of this is that similar HIV strains identified phylogenetically between a sexual dyad may also be found in others that are part of the network (Abecasis et al., 2018). Hence, even if links between viruses from two people are identified, phylogenetics (in its current state) cannot but remain silent on the direction of transmission. As one paper neatly summarises, similar results in phylogenetic analysis can after all be obtained from each of the following distinct scenarios (E. Bernard et al., 2007, p. 385):

1. *the defendant was [instead] infected by the complainant;*
2. *the complainant was infected by a third party with a similar viral strain;*
3. *both the complainant and the defendant were infected by one or more third parties with similar viral strains;*
4. *the complainant was already HIV-positive and was reinfected (also known as super-infected) with another strain of HIV, either by the defendant or by a third party.*

Recalling my argument in chapter one regarding the dominance of biomedical solutions in HIV prevention efforts, it is vital then, that HIV phylogenetic analysis not be privileged as *the only* answer to ascertaining viral paternity; rather, the 'ability of phylogenetics to support apparent transmission chains is only valid in the context of establishing, through traditional evidence gathering means, the actual relationship of individuals infected with similar viruses' (Brooks & Sandstrom, 2013, p. e349). With the help of clinical (review of sexual health history, symptoms) and epidemiological (e.g. contact tracing) means (Pillay et al., 2007), it may be possible to determine with some degree of certainty the origin of HIV infection for those individuals whose transmission networks are smaller (i.e. they have little to no sexual partners and/or a long delay between each sexual encounter) – this may not however, be feasible for those individuals with a highly active sex life. For those who have multiple sexual partners on a frequent basis – and here, bugchasers, with their voracious appetite to receive HIV-positive cum, appear to be one such example – the task of determining one's viral paternity will always be plagued by an uncertainty that cannot, as discussed above, be resolved by scientific, epidemiological or clinical means. The sheer breadth of the sexual networks associated with these individuals who live promiscuously means that rumination over the origins of their HIV infection will almost necessarily require some form of 'guesswork'. We can see this for example in an article written on crystal methamphetamine and barebacking for the popular *poz.com* (a website with HIV/AIDS news, treatment information, forums, blogs, and personals), where one bugchaser, Mike, shares the following experience (Koffler, 2002):

> *"When I had seroconversion sickness, I just counted back the days -- and although it could have been any one of literally a hundred guys, I romanticize that it was this one positive guy I met at the Westside Club and spent six hours with," he says. "He was tall and good-looking and really just 'it' for me. Somewhere inside I was determined to have myself his baby, and the crystal took me where I could enact that fantasy."*

Mike, despite acknowledging the impossibility of determining the origins of his HIV infection ('… it could have been any one of literally a hundred guys') is not deterred from *choosing* his viral father. For those who want concrete answers, guessing is less than ideal since it cannot be but riddled with uncertainty. Yet, for bugchasers like Mike, the necessity of 'guesswork' with regards to ascertaining viral paternity – and the uncertainty that accompanies it – is in no way a detriment; it constitutes instead, the very grounds from which they are able to 'romanticise' and engage with their fantasies. The erotic-fantastical attraction of bugchasing pertains thus not only to viral transmission (i.e. *Have I received the 'gift'?)*, but also to the practice's capacity to establish different forms of connection between the bugchaser, HIV and the other men in his network (i.e. *Whose viral-baby do I desire most?)*.

5.5 HIV and trans-temporal intimacy

That HIV-positive individuals are always already part of a wider transmission network is a point also discussed by Sontag in *AIDS and Its Metaphors* (1989, pp. 72–73):

> *The fear of AIDS imposes on an act whose ideal is an experience of pure presentness (and creation of the future) a relation to the past to be ignored at one's peril. Sex no longer withdraws its partners, if only for a moment, from the social. It cannot be considered just coupling; it is a chain, a chain of transmission, from the past.*

Astutely noting that the threat of HIV transmission essentially links every sexual encounter in the present to the sexual histories of all parties involved, Sontag is arguing here for the importance of understanding sex both temporally and non-dyadically. Tracing how HIV-as-gift 'circulates within bareback subculture as in a general economy of exchange', Dean too, asserts that bugchasing should be conceived as a 'strategy for taking sexuality beyond dyadic relations' and for enlarging bugchasers' 'horizon of potential intimacy' (2009, pp. 80–81). While I am in agreement with Sontag and Dean, what they do not discuss in greater detail is the microbiological basis on which it can be argued that HIV does indeed transform every sex act into group sex. I want thus, to engage with Dean's provocative suggestion that HIV be considered a type of memory 'in the sense that it traces the persistence of multiple prior bodily contacts in the present moment'

(ibid. p. 88), by turning to the science of how microbes reproduce. Unlike bacteria, viruses cannot replicate without the help of non-viral others. Generally speaking, bacteria reproduce through binary fission, a form of 'asexual reproduction where a single cell divides giving rise to two cells' (Riedel, Morse, Mietzner, & Miller, 2019, p. 69); these two cells then go on to multiply into four cells, and it is in this manner that bacterial communities eventually form. Viruses on the other hand, 'are parasites at the genetic level, replicating only in living cells and are inert in the extracellular environment' (ibid., p.413). Viruses can only multiply by hijacking the cellular functions of their host cells, so as 'to cause the infected host cell to synthesize virus-specific macromolecules required for the production of viral progeny' (ibid.). Stated simply then, viral reproduction *requires and depends on* an encounter between the virus and non-viral host others. This microbiological insight, when thought about historically, behoves us to appreciate the existence of a virus at any point in time as a reproductive accomplishment wrought by the combined efforts not only of the virus and the most recent non-viral host cell which it hijacked, but also of all the other host cells that came (and perished) before this most immediate host cell. In this way, HIV is not simply a social memory that emerges out of the relations between all infected and yet-to-be infected bugchasers; HIV is simultaneously also a material memory of sorts, coming-into-being precisely because it is an accumulated microbiological repository of all intra-actions that the virus has had with human bodies across time. As a socio-material form of memory then, the expansive relations any viral infection engenders will always exceed the infector/infectee dyad, since every event of novel HIV infection embroils the infectee in a larger trans-temporal/spatial chain of (socio-material) relations. It is this temporal element that allows bugchasers to establish connections with human-viral others that may not usually be possible – such as with the dead, for example. Dean explains this as such (2009, pp. 88–89):

> *It is not necessary to sleep with the deceased in order to get his virus: one need sleep only with somebody who has slept with him or somebody who has slept with somebody who has slept with him, et cetera … Through HIV it is possible to imagine establishing an intimate corporeal relation with somebody one has never met or, indeed, could never meet — somebody historically, geographically, or socially distant from oneself.*

Famously asking '*What would it mean for a young gay man today to be able to trace his virus back to, say, Michel Foucault?',* Dean subsequently suggests that a viral genealogy can help us appreciate 'how HIV can become a basis of authority and pride rather than of merely stigma and shame' (ibid.). *How indeed, might bugchasing or HIV infection more generally, be transposed from its current status as a death-bringing event that causes only harm to become reconfigured as an accepted and established means of forming positive, nourishing and life-giving multispecies relations?* As this section has argued, the possibility of such a shift happening depends in large part on the cultural remixing of normative society (and our willingness and ability to do so); a reconsideration of our relation to life, death, disease and finitude from a multispecies

angle is certainly one way to do so. Realising that the 'young gay man today' that Dean speaks about could very well be me, but also that as of the time of writing, Foucault's death predates my own birth by seven years, what I find fascinating about Dean's question is also the way it invites me to consider the possibility of being related, via viral infection, to a world and a time when-I-was-not-yet. In other words, this gesture of tracing one's viral infection is in fact a temporalizing practice (Hodges, 2008) that enacts the past differently as it also simultaneously brings us into relation with it (Munn, 1992). *Homo microbis* (Helmreich, 2014) thus meets *homo temporalis* (Arendt, 1978); man and microbe make each other as they simultaneously also make time. This looking backwards that Dean suggests, reminds me of Horkheimer and Adorno's story of Odysseus and the Sirens and more specifically, Heather Love's remarks about the dangers that accompany the over-subjection of the past to the present (2007, p. 9):

> *This story, for Horkheimer and Adorno, offers an allegory of the modern relationship to history: in a society that is based on use and appropriation, the relation to the past can only be instrumental. The creation of a 'fixed order of time' serves to 'liberate the present moment from the power of the past by banishing the latter beyond the absolute boundary of the irrecoverable and placing it, as usable knowledge, in the service of the present.' Such a relation to the past does not seek to rescue it as 'something living' but rather to transform it into 'the material of progress.'*

Love's point above bears an uncanny resemblance to Edelman's argument regarding the tyranny of reproductive futurism, and taken together, it becomes clear that irrespective of our analytical focus, all three temporal modalities are always already entangled. As Grosz explains (1998, p. 40):

> *Conceptions of each of the three temporal modalities (past, present and future in all their conjugative complexities) entail presumptions regarding the others that are often ill- or un considered: how we understand the past, and our links to it through reminiscence, melancholy or nostalgia, prefigure and contain corresponding conceptions about the present and future; the substantiality or privilege we pragmatically grant to the present has implications for the retrievability of the past and the predictability of the future; and, depending on whether we grant to the future the supervening power to rewrite the present and past, so too we must problematise the notions of identity, origin and development.*

The 'ways in which we consider the past to be connected to and thus to live on through the present/future will have direct implications for whatever conceptions of futurity, the new, creativity, production or emergence we may want to develop' (ibid.). Hence, while narratives of HIV as scourge, crisis, and disaster have certainly been instrumental in mobilising resources in the 'global battle' to eliminate HIV, we must take care not to let these (hi)stories become all that we remember HIV by. This then, is what I take to be

the radical core of Dean's provocation above: in inviting bugchasers to trace the origin of their HIV infection to Foucault or otherwise, he encourages us to remember that the past is not a done-deal, to re-engage with it so that it may be enacted differently in and by the present through the stories of viral paternity and pride that bugchasers tell. This weaving together of new narratives and relations with both the human and more-than-human by bugchasers is hence also a way to refuse the stultification of our HIV-related past as the mere 'material of progress' that fuels the politics of the Child. What I am attempting here, at least in the context of HIV, is to resist what historian Koselleck (2004) famously showed to be one of the driving forces behind the modern story of progress: the tearing down of stories (*Historie*) in the name of History (*Geschichte*). About *Geschichte*, or History, he writes (ibid., p. 35):

> *The collective singular permitted yet a further step. It made possible the attribution to history of the latent power of human events and suffering, a power that connected and motivated everything in accordance with a secret or evident plan to which one could feel responsible, or in whose name one could believe oneself to be acting. This philological event occurred in a context of epochal significance: that of the great period of singularization and simplification which was directed socially and politically against a society of estates. Here, Freedom took the place of freedoms, Justice that of rights and servitudes, Progress that of progressions (les progrès, the plural) and from the diversity of revolutions, 'The Revolution' emerged.*

Because *Geschicht* requires that the plurality of stories be 'sacrificed on the modern altar of History', what is also lost as Savransky points out, is 'the habit of letting ourselves be collectively affected by other stories, to be inspired by the alternative paths they open up, to be lured by the possibilities they create' (2021a, p. 273). In this way, the speculative stories that bugchasers tell of their viral infection are important because they keep alive the past as it relates to HIV, and it is only by doing so that history is able to breathe to become the breeding grounds for the different values and meanings that accompany the coming-into-being of novel HIV identities. Acknowledging that we are generational beings and that 'there is no project of self-creation and identity formation independent of the ''context created by those who have come before me''' (J. Epstein, 2012, p. 158) is only part of what is needed for new futures to proliferate; pasts need to be 'protected' through practices that keep them alive so that they may continue to serve as a source of inspiration of how the future may be different.

6. Braiding it all together: Posthuman gestationality, our arts of suffering and affirmative politics

By being attentive to the different ways in which humans and HIV relate to each other and consequently, how bodies – both human and more-than-human – are differentially done, the multispecies stories I have told in the previous two chapters make clear that despite the dominant representation of HIV-as-enemy, there are a whole range of other normative valuations that HIV may also come to associated with. As the reader may have noticed however, my attunement to the wide range of human and viral identities that are brought-into-being with regards to the Los Frikis and bugchasers cannot be disentangled from my analysis of the predominant ways in which we think death and life – as I mentioned previously, if the Los Frikis *lived by embracing death*, bugchasers *embrace death to birth life*. I want thus to draw this thesis to a close by weaving together some of the thematic strands related to life, birth and death dispersed across these pages by elaborating on what one thinker has termed '*posthuman gestationality*' (Neimanis, 2018b).

Wanting to foreground the 'facilitative capacity of water – that is, water's facilitation of the inception, repetition, and proliferation of life in its potentially infinite plurality' (Chandler & Neimanis, 2013, p. 62), philosopher Astrida Neimanis offers us the figuration *'bodies of water'* as a means of highlighting the 'complex relations of gift, theft, and debt with all other life' (2013, p. 31) that we are always already entangled with. On watery embodiment, Neimanis thus writes (2018b, p. 55):

> *As bodies of water we leak and seethe, our borders always vulnerable to rupture and renegotiation. As we know, our human bodies are at least two-thirds watery, but more importantly, these waters are in constant process of intake, transformation, and exchange. For humans, the flush of waters sustains our bodies, but also connects them to other bodies and other environments – drinking, urinating, sweating, transfusing, siphoning, sponging, weeping. Human bodies are thus very literally implicated in other animal, vegetable and planetary bodies that materially flow through us, replenish us, and draw upon our own bodies as wells.*

A brief comment about figurations before proceeding any further. For Braidotti, figurations are not arbitrary creations; they are instead rooted in 'concretely situated historical positions' (2006, p. 90).The emergence of various feminist figurations across the last few decades such as Donna Haraway's 'cyborg' (1985) and 'companion species' (2003), Gloria Anzaldua's 'Mestiza' (1987) and Braidotti's 'nomadic subject' (2011) should thus all be viewed as corresponding to a particular assemblage of contemporary problems. This point is not lost on Neimanis, who in offering us the figuration *'bodies of water'*, states the following (2013, p. 27):

> *… a figuration must attend to its obligation towards the materiality – the matter – from which it draws its metaphorical heft, and that within a critical materialist vein, evokes specific sets of contemporary questions. The cyborg was articulated in a context where the brave new world of biotechnologies, and their attendant ethical quandaries, was prominent within our social imaginary; the nomad was (and is) concerned with questions of global mobility … The body of water as feminist figuration is thus firmly embedded in the urgent but diverse water-related concerns of our twenty-first century.*

Stated otherwise then, we might conceive of Neimanis's figuration *'bodies of water'* as a response to the myriad environmental problems that currently plague us (2018a). Yet, because Neimanis's work on watery bodies so effectively brings to the fore ideas related to birth, gestationality and futurity – themes that are all central to this thesis in some way or another – I want to suggest that there is a natural affinity between Neimanis's thinking with water and the ideas I have sketched out with HIV thus far. In borrowing from Neimanis's *'bodies of water'* however, I no doubt run the risk of making infelicitous associations, inappropriate connections and bad comparisons. This, I hope, will be mitigated to some extent by identifying the similarities and differences between Neimanis's thought and mine, as well as with the myriad theories and ideas used in this thesis. In what follows then, I will first summarily present some of the key tenets of Neimanis's watery thought before tying it back to the multispecies stories I have told in this thesis.

As Neimanis writes elsewhere, because 'water gives us life, in both the most banal and sacred of terms' (2013, p. 30), it is, to recall my earlier discussion of Arendt in chapter five, gestational (ibid.):

> *At the level of a single mammalian body, water is a gestational medium, bathing new life into being in an amniotic milieu. But crucially, water's gestationality precedes and exceeds dimorphically gendered and human reprosexually based gestation. All life – beginning with its first appearance over four billion years ago, in a steaming primordial soup – requires a watered milieu in which to proliferate: bacteria in our gut, a seed in the soil, coral in the sea … The scale of water's gestational capacity also impressively expands beyond the individual body, once we consider that each species – made up of watery bodies – is itself an aqueous gestational milieu for the proliferation of the next species, and the next.*

As intimated above then, for Neimanis, water can thus be said to model a 'mode of sociality that we, as human sovereign subjects, repeat – dissolving the sovereign self in a becoming-responsive to others, both human and more-than-human' (Chandler & Neimanis, 2013, p. 62). Two points follow. Firstly, given that 'water's capacity to bathe plural life into being in myriad ways … [exceeds] human, heteronormative

reproductive sexuality' (Neimanis, 2017b, p. 54), posthuman gestationality must be understood as a 'facilitative mode of being' (Neimanis, 2017a, p. 68) that is common to all bodies, whether human or more-than-human. Neimanis's posthuman gestationality thus dovetails with the work of scholars I discussed in the previous chapter who aim to queer the notion of birth and reproduction (see also Neimanis, 2014). Secondly, 'if the body that I am extends through and beyond me in very material ways', then what is also suggested by posthuman gestationality is a politics of location: 'how are my obligations to others, as well as my understanding of self and my 'location', both complicated and enriched' (Neimanis, 2013, p. 26)? While the point being suggested here may seem at first glance to be similar to that of Esposito's *immunitas/communitas* – that is, the constant oscillation between the opening of oneself to alterity and the closing off associated with the rebuilding of one's identity – what sets Neimanis's thought apart from that of Esposito's is her emphasis on *communitas* as the 'capacity for facilitative responsivity, for nourishing an other, [and] for proliferating life in the plural' (Chandler & Neimanis, 2013, p. 62). This emphasis is key, for it hints at a sort of ethics implicit in conceiving of our bodies as *milieu-for-another*, as directed towards the becoming of other bodies and ultimately, as 'providing the conditions for an unpredictable plurality to flourish' (ibid.). Our potential to be *milieu-for-another* however, as Neimanis insists, must be thought of as thoroughly material. Neimanis's explanation of why this is so is complex and relies both on her analysis of Deleuze's third category of the real (the 'virtual') and her understanding of planetary hydrological cycles – it will be useful thus, to quote her at length here (ibid., p. 74):

> *In Deleuze's conception, virtuality is the zone of potentiality from which actualities are extracted. The virtual is like an infinitive verb (for example, 'to be'), rather than an actualized declination thereof (such as 'is'). 'To be' holds all the potentiality out of which materializations emerge into actuality … [yet] the materiality of water also challenges a conceptualization of the virtual … which posits virtuality as an 'immaterial' and abstract (albeit real) field of potential that surrounds an actualized entity. This challenge is accentuated if we consider the hydrological cycle. Because the earth does not produce its planetary water but only recycles it, we might think of this as a 'closed system' of knowable material entities. But because water is always becoming (drawing on its latent virtual potential), it is always repeating, but differently. In this sense, then, these cycles manifest an 'open system.' In our watery world of hydrological cycles, the unbounded virtuality that repeats is water itself. The latent potentiality of the virtual is thus hardly immaterial, as it inheres in water's very material capacity to repeat itself as new watery bodies … So, while Deleuze turns to the metaphor of an 'indeterminate cloud' that surrounds and hovers around one's actuality as a way of explaining the virtual, water's virtuality is no metaphor. Watery virtuality may be 'indeterminate,' but it does more than hover around a body like an immaterial idea; it materially invests that body.*

By emphasising the materiality of virtuality and linking this to the aforementioned gestational orientation of our watery bodies as *milieu-for-another*, Neimanis subsequently challenges the pervasive 'idea that material entities must be necessarily self-preserving' (ibid., p. 75) from this conceptual space she has carved out; this is a point I similarly raised in chapter three when discussing the normative anthropocentrism that striates notions of health, and expanded on through the use of empirical examples in chapters four and five. Once again, however, to pose the continued self-preservation of the human organism as a question is not to advocate for the death of the human. In other words, neither Neimanis nor I are adopting an anti-humanist and/or nihilistic position calling for the total desubjectification of human individuals – this, as Deleuze (1988) rightly notes, cannot but lead to utter annihilation. Rather, it is to ask the important question of whether death and suffering can and should only ever be considered as disasters. Granted, on a personal level, as Margrit Shildrick states, death 'may always be understood that way and without doubt biomedicine will continue with its efforts to prolong life, to stave off the inevitable cessation of breathing, and that is precisely what drives the research on immunity … Most of us are at one with the Western logos understanding of death as an end' (2019, p. 20). Yet as this thesis has shown, more than just disaster, *pathos* carries with it its own potentiality as well (Tierney, 2016). To take the continued self-preservation of the human organism as a question is thus also to unsettle 'the denigration of facilitative modes of being' (Chandler & Neimanis, 2013, p. 63) by highlighting that even as there is necessarily some 'loss' involved in de-commiting to self-preservation and offering one's body as *milieu-for-another* – as the death and suffering experienced by Papo, Yohandra and Gerson illustrate – it may also be useful to reflect on the significance and necessity of this 'loss' for creation and the coming-into-being of the new. I am blurring with the help of HIV, in other words, distinctions between life and death, and novelty and loss. In this way, death and suffering becomes no longer only an insult to being and what results is a 'move away from a thanatoethics, where death is always imminent, to a more affirmative mode that concerns itself with the persistence – even the un-timeliness – of dynamic expansiveness' (Shildrick, 2019, p. 11).

Recall once again that to 'be gestational, bodies of water must partially dissolve themselves to allow new iterations and manifestations of watery life' (Neimanis, 2017b, p. 54). What the notion of *becoming-milieu* does then is to encourage us to avoid 'a commitment to self-preservation *at all costs*' (Chandler & Neimanis, 2013, p. 78), such that we may be lured into becoming attuned to and actively participate in the bringing-into-being of different forms of life and modes of living that emerge precisely through the dissolution, *to varying degrees*, of the perdurance of the human body. Stated otherwise, it is the articulation of facilitative modes of being and *how we become embodied in others, as others* when we serve as watery milieu – and here, one recalls my discussion, in chapter five, of HIV as a form of socio-material memory that embroils any infectee in a larger trans-temporal/spatial chain of relations – that Neimanis wants us to think with here. To think gestationally is therefore also to engage in the ethical project of

elaborating ‘a hitherto unregarded network of relations that dispenses with the boundaries of singular location and time and reimagines the concept of living outside oneself’ (Shildrick, 2019, p. 20). This sensitisation to how the human self-externalises its becoming is an initiation into the non-teleological time of its becoming and also an invitation to think ‘an atemporal bioethics of coexistence’ that is not based on the idea of its successive existence and the ever-present threat of facing its own finitude (ibid.). This I think, is one way in which we might then respond to the task I laid out in chapter four: that is, to experiment with thinking how both the human and more-than-human might ‘relate’ to finitude such that we may begin to approach ethics in a non-anthropocentric manner. In this new ecology of finitude, where modern conceptions of human selfhood are transformed via the renegotiation of the conventional bookends of life and death, it may then be possible to precipitate a revaluation of the either/or values associated with the demise/preservation of the (human) organism by ‘making it perceptible that the choice is not one between salvation or damnation, life or death, but one between divergent modes of living and dying, of composing worlds, of inhabiting the Earth’ (Savransky, 2021b, p. 4).

Is this not, after all, precisely what the multispecies stories I have told of the Los Frikis and bugchasers bring to the fore? As the two previous chapters have made clear, it is precisely this dissolution that the Los Frikis and bugchasers effect through practices of HIV autoinfection that facilitates their embodiment in others, as others. If the term biosociality reminds us that the social and biological are always mutually co-constitutive of each other, what an engagement with posthuman gestationality reminds us is that all biosocialities are made possible in the first instance only because our human bodies have the watery capacity to dissolve and serve as *milieus-for-another*. Yet, to think of ourselves according to the *hydro-logics* (Neimanis, 2013) of dissolution and gestation is not something we are used to; Val Plumwood too suggests this in her diagnosis of how the human exceptionalism of western modernity conditions us to position ourselves ‘as the eaters of others who are never themselves eaten’ (2008, p. 324). In (willingly!) offering their bodies as the food, the nourishment – the milieu – from which other lives, both human and more-than-human, and modes of lives are gestated-into-being, the multispecies stories I have told of the Los Frikis and bugchasers flip dominant narratives regarding human self-preservation and foodiness on their heads. As is evident, becoming *milieu-for-another* ‘demands a radical reorientation of oneself as existing in part for the purpose of what is beyond oneself, and thus a (partial) dissolution of oneself as a sovereign subject’ (Chandler & Neimanis, 2013, p. 75). In showing us what ‘the giving over of one’s own materiality for this proliferation of further life’ (Neimanis, 2017a, p. 92) might look like (even if doing so also threatens one’s own existence), it is no surprise then, that these multispecies stories often evoke feelings of discomfort in those that come into contact with them.

The reader will recall that the first half of the thesis (chapters one, two and three) demonstrated how tightly entangled possessive individualism, the ‘immunity-as-defence’ paradigm, the politics of the Child,

notions of health (whether in its Pasteurian or post-Pasteurian format) and normative anthropocentrism are; interacting in various ways, they explicitly and implicitly shape the way we think the 'good' life, our ethics and how we do human-microbial relations. What culminates then, as I have argued, is a kind of conservatism in our epistemic frameworks that is committed to the biological perdurance of the human organism; as I have shown in previous chapters, this normative anthropocentrism can also erode other modes of living and of inhabiting the Earth and thus greatly shapes the way we live with microbes. It is easy to think of our bodies as *milieu-for-another* so that we may form new relationalities with microbes that are shown to offer some sort of biological benefit to us, but as I have argued in this thesis, in the context of pathogens which do not become 'good' in a post-Pasteurian framework, taking seriously the idea that the microbe is multiple will require that research focus not exclusively on health-seeking practices but also those which do not aim directly at the absence of disease or even the avoidance of death. Asking how we may serve as the gestational basis for pathogens to proliferate is important, because it is, as the stories I have told of the Los Frikis and bugchasers illustrate, a form of resistance, or more accurately, a line-of-flight through which practices of thinking, knowing, and living differently might be encouraged to flourish. At the same time however, I have been careful not to romanticise the Los Frikis and bugchasers as the inspiration from which new ways of reassembling modern life may be modelled after, pointing out that the pragmatics of radical pluralism gleaned from the multispecies stories I have told are also inextricably tied to the specific social, political and economic conditions from which they emerge. The fact that I am able to read the bodies of the Los Frikis and bugchasers as *milieu-for-another*, is in many ways an artefact of the myriad injustices that they have also endured. In other words, while the harsh and sometimes callous dimensions of human experience must continue to be studied and the conditions that produce them, illuminated and addressed, it is important also as this thesis suggests, that we move beyond a 'damage-centred' research framework (see chapter two) and approach these experiences not only as something to be rectified but also as the ambers of novelty that may become something more if we deem fit to stoke them. I think Sherry Ortner hits the nail on the head when she writes that 'the study of power and inequality, and the damage they do' (2016, p. 60) cannot be all that matters and I will thus offer one last story related to another virus, COVID-19, to illustrate how the notion of *milieu-for-another* can help us to 'be both realistic about the ugly realities of the world today and hopeful about the possibilities of changing them' (ibid.) and ultimately, to open up new theoretical vistas for future research.

Stay at home; do not travel unless absolutely essential; limit going out for exercise/food as much as possible; and avoid socialising in person. These COVID-19 guidelines have generated new norms of social responsibility clearly seen in the social media trend of #stayhome. As individuals share photos and videos of themselves engaged in a variety of 'responsible' activities all while #stayinghome, the performance of such acts of social distancing on social media facilitate a form of virtue signalling and allow for the construction of the 'good' coronavirus citizen – 'rational, self-owning, and independent, with a moral compass that

enables him to consider the interests of others' (B. Anderson, 2013, p. 3). This figure of the good citizen has been pitted against and used to shame/discipline 'covidiots' – individuals who ignore COVID-19-related public health guidance and warnings (Aspinall, 2020). Who could forget the outrage and vitriol that followed media coverage of the crowded parks in London, where picnickers and sunbathers were lambasted for ignoring lockdown rules to enjoy the summer weather? As each of us are turned into mini surveillance units under the sign of the 'good' coronavirus citizen, we thus become tools for the (self-)monitoring of the *untore*, or plague-spreader (Agamben, 2020).

My encounters with covidiots frolicking in the sun have been minimal. As a gay man living in London, however, I have instead found myself amongst other covidiots: gay men who, despite pandemic guidelines, continue to meet up so as to engage in a myriad of (non)-sexual practices. Many men on gay networking apps like Grindr and Scruff state explicitly on their profiles that they are not looking to hook up, but in my experience, using carefully phrased statements that remain neutral on the prospect of meeting up until the right moment can lead to the crystallisation of sexual trysts. Of course, such clever manoeuvring to find like-minded individuals is not without its dangers: as my covidiots tell me, they have on several occasions found themselves the subject of a moralising tirade by 'good' coronavirus citizens after misreading the situation. 'Have they no concern for the lives of others?', these 'good' citizens exclaim, and indeed my friends too express disapproval and shock when I speak about my encounters with these covidiots. Yet, I suspect that the existence of these covidiots who continue to meet under clandestine conditions are in fact well-known to those in my social circle, even if outward acknowledgement is discouraged by the current moral climate. After all, when news of the drug-fuelled orgy in locked-down Barcelona and the 'Rona Rave' in New York City reached our ears, scarcely any of us were surprised – we had already, by then, confessed to knowledge of similar events right here in London. My experience of these parties-orgies in London have been that in the midst of a pandemic they are far easier to organise by getting a group of friends together than by starting from scratch and recruiting men off the apps – in no small part due to the above-mentioned stigmatisation around pre-pandemic sexual practices. While the familial nature of these gay gatherings acts as a gatekeeper of sorts, it may also be precisely why COVID-19 safer sex practices such as contact-tracing and the establishment of a fixed roster of sexual partners can work. I remember clearly the awe I felt regarding the rapidity at which all attendees of a party were swiftly identified and informed of their possible exposure to the virus via their inclusion in a WhatsApp group when one participant tested positive for COVID-19. In the aftermath of the positive test, much concern was expressed over possible illness; this concern, however, was not accompanied by remorse. Highlighting instead, how the cure (i.e. social distancing) might actually be worse than COVID-19 itself, these partygoers emphasised to me the importance of engaging in pre-pandemic practices of intimacies as a means of liberating their present from a biomedically overbearing future. Elsewhere, one covidiot on a popular gay Facebook group I am a part of also opines: we 'were told to shut down to avoid overruns of the hospitals [and] not that we would shut

down as a cure'. If bugchasers sought to defy the normalising demands of the imperative of health (see chapters two and three) through the creation of a queer future in which HIV transmission is key (see chapter five), for these covidiots, their resistance to biomedical hegemony inheres not so much in them becoming COVID-19 positive, but rather in the simple gesture of them opening their bodies *to the possibility of an encounter* with COVID-19.

In threatening the continued existence of our present social order, the anti-social actions of the covidiots I have encountered are far from ethically exemplary; yet, there is also much that is ethically *interesting* about them. Their eschewal of the call to #stayhome and reshape predominant modes of sexual intimacy, while anti-social and potentially fatal, reminds us that there are many ways to live with COVID-19 beyond social distancing – which in itself is, of course, dependent on socioeconomic privileges related to income, job security and/or housing arrangements for example. As the multispecies stories I have told of the Los Frikis and bugchasers illustrate, the livelihoods of both human and more-than-human organisms both shape and are shaped by political, economic, and cultural forces, and it is no coincidence then that the covidiots I know who flagrantly flout social distancing guidelines are also homeowners, private health insurance holders and receivers of a stable (and often times, generous) income stream. Amidst the intense moral backlash against covidiots, many commentators have rightly cautioned that it is important to understand COVID-19 related disobedience as intimately related to the socio-material networks that individuals are embedded in. Thus, even as social distancing measures are crucial as a means to combat the pandemic, there exist as Michaela Benson points out, 'those who do not have privileges, resources and material circumstances to meet these obligations' (2020). My covidiots certainly do not fall into this group and Chris Griffin's (2020) scathing critique that covidiots who have the option of staying home, but choose not to, 'assert their right to self-defence (from loss of liberty) in a way that directly dispossesses others of the right to self-defence (from loss of life)' can thus surely be applied to my covidiots.

The socio-material politics of COVID-19 civil disobedience notwithstanding, what is also noteworthy is that in refusing to sacrifice the present to bring about a future in which COVID-19 is rendered non-threatening, my covidiots enact a temporality of the here-and-now which allows them to attend to the liveliness of the virus-as-question as more than something to be managed out of existence. Devising ways to bear the dangerous reality that is COVID-19 while they continue to copulate, dance and intoxicate themselves, the queer covidiots I know practiced the same safer sex methods that would later become endorsed by health-related organisations (NYCHD, 2020): using gloryholes; employing contact-tracing in instances of illness; establishing an 'orgy bubble' comprised of a fixed roster of sexual partners. That my covidiots' insistence on prepandemic intimacies of bodily interactions during a pandemic facilitate the proliferation and spread of COIVD-19 is surely a cause for concern; but what is worthy of consideration also is that in doing so, it is not just viral lives that are *gestated-into-being* and other novel modes of living that do not necessarily adhere

to the predominantly biomedical handling of the COVID-19 pandemic also simultaneously emerge. My covidiots do not want to fall ill – and in this sense, they are far from suicidal – but in being willing to expose themselves (and others) to a deadly virus, they also pilot a line-of-flight away from well-entrenched biomedical logics and lifestyles. As it was for the Los Frikis and bugchasers, covidiots, by becoming *milieu-for-another*, or the gestational basis for the multiplication of pathogens, thus also challenge dominant ideas regarding human self-preservation.

In *Limits to Medicine*, Ivan Illich notes that traditional 'cultures confront pain, impairment, and death by interpreting them as challenges soliciting a response from the individual under stress; medical civilization turns them into . . . problems that can be managed or produced out of existence' (1977, p. 140). We can discern two different dispositions to disease from Illich's comment. The first approaches the existence of disease as an open-ended challenge that one responds to – we see this for example, in how my covidiots respond to COVID-19-as-question. There is an intrinsic question mark that accompanies *pathos*, and one responds to it through what Illich calls the *art of suffering*, 'a unique conformation of attitudes towards pain, disease, impairment, and death, each of which designates a class of that human performance' (ibid., p. 128). The second (and this is the one Illich associates with modernity), however, smothers this intrinsic question mark; to the extent that the existence of *pathos* is acknowledged, it is solely for the goal of 'managing it out of existence'. Disease-as-open-ended-question is circumscribed and made less wondrous because of the always already pre-supposed answer to it: it should be removed. Cultural iatrogenesis was the term Illich used to critique the process of what he thought was the gradual undermining of the art of suffering by the growing expectation 'that all suffering can and should be immediately relieved' through technical engineering (Cayley, 2020). Reading Illich in the same non-nihilistic manner as I read Neimanis, the point suggested by cultural iatrogenesis then is not that aiming to eradicate a disease is bad in itself, or that we should let humankind succumb to disease, but that our increasingly biomedicalised culture is such that managing pathos out of existence is often the only response that is seriously considered by individuals or institutions. The hypertrophy of biomedical techniques to manage *pathos* impinges on the development of other modes of living with *pathos*. Our response to *pathos* cannot only be one of managing it out of existence if we want to allow for the proliferation of novelty; yet, it cannot also entirely exclude the biomedical management of disease, for the efficacy of biomedicine at securing longevity cannot be denied and one needs to be alive to develop and practice one's own art of suffering. The crux of the issue then, as I read Illich, is one of balance: there is a need for us to engage with the acceptability and extent of suffering, pain and loss that accompany the dissolution of self and the gestation of novelty, in an open-ended manner. Whitehead too points out the importance of this balancing act, commenting that 'the art of life is first to be alive, secondly to be alive in a satisfactory way, and thirdly to acquire an increase in satisfaction' (1929, p. 8); and as Rose explains, for Whitehead, the pursuit of a life led in satisfaction is one that is closely allied with 'expanding our understanding of the world and our place within it' such that doors 'to novel

possibilities of life satisfaction that are unattainable within the prevailing form of life' are opened (2021, p. 3). Serving as a lure through which we may consider the push-pull dynamic associated with medical prowess, and the characteristically modern angst that what helps us may also be that which harms us, Illich's ideas thus also help us hold the realities of living both with pathogens and biomedicine on one hand and the possibilities of forging new realities in the other through the development of our own unique arts of suffering. The plurality of the arts of suffering we come to each practice must thus be understood as the product of our situated labour that 'eschews abstract determinations in order to give way to divergent ways of immanently appraising what living and dying well' (Savransky, 2021b, p. 12) might mean in world where we have to coexist with different kind of microbes.

For Illich, life is subject to sub-normativity; *pathos* is part of the human condition. This has important implications for the way we understand the art of suffering and David Cayley, long-time friend and student of Ivan Illich, explains it as such (2021, pp. 443–444):

> *Existence itself is suffered inasmuch as it is something that we are given and not something we make. The art of suffering, in this sense, takes in more than the capacity to tolerate pain, disease, or disability. It is a way of taking things — an art of enjoyment as much as an art of endurance — a respect for the 'givenness' of existence. This emphatically does not mean never trying to mitigate and relieve pain. What is at issue is the imminent threat that this quality of givenness will be snuffed out altogether and that we will then find ourselves in a second, entirely artificial creation.*

The point here then, as I understand it, is that if our arts of suffering consists only of the knowledge and expectation that *pathos* be managed away through technical engineering, then what is encouraged is not only the denial and obfuscation of *pathos* as inherent to existence, but relatedly, also the inability 'of individuals … to express their own values' when faced with 'inevitable and often irremediable pain and impairment, decline and death' (Illich, 1977, p. 133). It will be recalled that in chapter two, I argued that value emerges alongside the coming-into-being of relata: all 'things' must be understood not simply in terms of their relations, but in terms of relational responses to values felt. There are no axiologically indifferent activities and that the way in which we evaluate microbes actively participates in world-making should already be evident; what Illich makes clear about the multispecies stories I have told is that our microbiopolitics cannot be considered in exclusion from the arts of suffering we have developed. In other words, because value and facts are co-extensive in this value-relational world, an impoverished art of suffering and the associated incapability of individuals to express values beyond those dictated by biomedicine when living with pathogens also narrows what all bodies – whether human or more-than-human – might and can become. After all, if the enactment of immuno-microbiopolitics is the only response that is given serious consideration in our en-counters/tanglements with pathogens, then what is

also forgone is the opportunity and 'ability to test what arrives for its personal meaning' (Cayley, 2021, p. 444). Deliberately opening oneself to pathogenic others is certainly dangerous, for it may lead to much pain, suffering and even death – but is it not also in the capacity for recovering and making meaning from *pathos* that normativity inheres? An attention to and expansion of our arts of suffering is vital if we are to become more sensitive to the manifold ways in which value is always transforming. This journey of continuous value exploration may then help us realise worlds where we can live not only with pathogens, but biomedicine, differently. Given that the 'frequency and diversity of disease outbreaks are expected to grow steadily' alongside continued improvements in travel, trade and connectivity (World Economic Forum, 2019, p. 7), there is a certain urgency, I think, with regards to the exploration of other modes of living with pathogens and infections *beyond eradication*, since such a gesture constitutes the 'experimental ground on which we learn how to live [differently] in a somatic and semiotic environment that is becoming ever more toxic' (Preciado, 2013, pp. 360–361).

The framework for an *affirmative politics* put forth by posthumanist philosopher, Rosi Briadotti, will be, I suspect, an important part of this journey of continuous value exploration I am calling for. As she explains (Braidotti, 2016, p. 51):

> *Affirmative politics ... indicates the process of transmuting negative passions into productive and sustainable praxis, which does not deny the reality of horrors, violence, and destruction of our times but proposes a different way of dealing with them. What is positive in the ethics of affirmation is the belief that negative affects can be transformed. This implies a dynamic view of all affects, even the traumas that freeze us in pain, horror, or mourning.*

Much like Neimanis and Illich, Braidotti too recognises that any negative event – which for our current purposes can be understood as related to the dissolution of self or the experience of *pathos* – can be the igniting spark for and motor force behind change and novelty. Her call for the 'positive transformation of the pain of loss into the active production of multiple forms of belonging and complex allegiances' (ibid.) as part of an ethics of affirmation is precisely what the multispecies stories I have told of the Los Frikis and bugchasers aim to do: with the dissolution of the human body serving as *milieu-for-another*, new alliances with human and more-than-human others are formed. Her insightful comment that what is deleterious about *pathos* is not simply the suffering it entails, but also 'the effect of arrest, blockage, rigidification, that … harm the self's capacity to relate to others – both human and non-human others – and thus to grow in and through others' (2008, p. 22) allies her with Illich, in that both thinkers want to emphasise to us the importance of working with *pathos* (as opposed to simply against it) such that its associated negativity may be transposed on to a more positive and/or creative register.

This thesis has explored the multiple ways in which modern life proceeds on the assumption that the perdurance of the human body should always be privileged. This implicit anthropocentrism and its associated biomedical logics – whether Pasteurian or post-Pasteurian – as I argued above, may be mitigated through the *hydro-logics* of dissolution and gestation, where the human body is conceived not simply as part of a milieu, but also as *milieu-for-another*. However, even as theoretical debates around posthuman gestationality and finitude remind us that all bodies must partially dissolve themselves so as to allow new iterations and manifestations of life to emerge, to the extent that multispecies worldmaking is never only benign, a consideration of the entangled nature of birth and loss, or *pathos* and novelty must be accompanied by an explication of some of the concrete microbiopolitical calculations made when living with pathogens. Such calculations, recounted briefly in my stories of covidiots above, are as the reader will recall, also examined in detail in chapters four and five via the multispecies stories told of the Los Frikis, bugchasers and their respective microbiopolitics. Stated differently, as powerful as the notion of *milieu-for-another* is for helping us make sense of the production of novelty conceptually, it must always be engaged via the specific, localised and empirical contexts from which it is tied to. There remains thus, important questions related to how and what this might look like in practice – questions which research must endeavour to address. *What then are some of the ways in which ethical subjects have and will be able to transform the negative charge of an event? And in doing the important work of transposing negativity, how and to what extent does one endure and 'struggle to sustain the pain without being annihilated by it?'* (Braidotti, 2016, p. 52). Subsequently, such questions encourage us to expand our scope of investigation beyond the identification of 'sources' of suffering 'to a process of elaboration of the questions that express and enhance a subject's capacity' to form more complex relations with others through an understanding of his limits (Braidotti, 2008, p. 28). The need to devise and explore different ways of living with *pathos* through a proactive affirmation of its productive potential, as suggested to us by Illich and Braidotti might thus be approached as a crucial part of how we may *operationalise* the notion of *milieu-for-another*. Our own arts of suffering and the kind of affirmative ethics we adopt will temper the limits to which we are able to offer ourselves, our attachments to modernist conceptions of self and self-preservation in the service of gestating new lifeforms and modes of life. This I think, will be key for the broader posthuman project of working out the value of human life not only for humans, but for life more generally.

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