

OVERLAPPING ONLINE AND OFFLINE SPACETIMES:

HETEROTOPIA, MEMES, AND HASHTAGS

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Abstract

My doctoral project, “Overlapping Online and Offline Spacetimes: Heterotopia, Memes, and Hashtags,” examined the interrelation of digital and analog spacetimes in generating global attention. The debate on the way and speed at which information spreads online, and its ability to create global attention, has raged in many fields. Within political science, scholars such as Bruce Bimber and Caroline J. Tolbert have explored the role of the Internet in political engagement and action. Within anthropology, scholars like Gabriella Coleman have focused on specific online activist groups and their use of digital tools to spread political ideas. Despite much excellent work on themes such as the explanatory power of Big Data in electoral politics and focused ethnographic work on groups like Anonymous, scholars examining the politics of the Internet have yet to adequately account for the importance of the emergent interactions of online and offline spaces and the actors, like Internet memes, which develop out of the times and spaces in which online and offline spaces overlap. Without such an understanding we are left with inadequate analyses that create the conditions for confused theories about the Internet as a technology of social change and a self-sustaining cycle of misunderstanding about how online and offline spaces intersect.

Using a textual analysis of novels, short stories, and Internet memes, I sought to develop a horizontal model of the overlaps of online and offline worlds. I argued that online and offline worlds have fuzzy borders, and thus intersect or overlap. In these overlaps nonhuman actors, which can include anything from pieces of physical infrastructure to Internet memes, work with human actors in assemblages. For example, I examined the ways in which Internet memes like the Harlem Shake, and hashtags such as #BlackLivesMatter, operate in and through these overlaps creating opportunities for social change. I concluded that experiencing the diverse

forms of space and time operating in online and offline worlds simultaneously in these overlaps make people aware of issues they would be unconscious of or apathetic to otherwise.

Chapter 1. Introduction

I began this dissertation process with the concept of overlapping online and offline spaces. I have always been intrigued by my understanding of the Internet, which grew out of my early dial-up experiences with AOL and reading the cyberpunk science fiction of the 1980's and 1990's:



Figure 1: <http://giphy.com/gifs/internet-90s-aol-3hRzIz4D8lkgg>

The sign-on experience paired with cyberpunk's cyberspace/virtual reality imaginary created a lingering sensation of a porous separation: I was either online or offline, but my body and the systems I used to connect bridged both spaces. Thus the spacetimes of the Internet have always appeared to be in the overlaps of online and offline worlds, like the center of a venn diagram. In this dissertation I will use the term, the Internet, in reference to that overlap of online

and offline spacetimes, and will examine the ways in which the Internet relates to the broader assemblages of online and offline worlds.

In my experience time spent in this overlap had a profoundly political impact: such time made me more aware of the world, and in feedback loops of time and attention that increased awareness made me more interested in and inquisitive about what was going on in both domestic and global politics. These experiences were also consistently intertwined with my consumption of popular culture texts which reinforced this image of what the Internet was and what it meant to be connected. The feeling of porous separation has become almost unthinkable in many areas of the world now, because we live in a state of ubiquitous connectivity replete with push notifications and vast tracts of information available on the world wide web at our fingertips (literally our fingertips, with our touchscreen smartphones shrinking the obstacle of the interface as much as possible). Soon the connectivity will become even more invisible in its ubiquity with the advent of technologies like Google Glass or the implants of William Gibson's *The Peripheral*.

The coherency of my project rests on the following components: spatial practices, poesis, popular culture analysis, critical approaches to the boundaries of humanness, and a complex understanding of agency divorced from human subjectivity. I will examine how these components, particularly nonhuman distributed agency, complicate our understanding of power, authority, and accountability. By combining approaches and texts from a number of schools of thought, my dissertation is uniquely placed to examine how the conjunctions of online and offline spacetimes in the Internet have impacted existing systems of authority, and what these conjunctions may be able to offer to those fighting for social justice in the future.

The debates on the manner and speed at which information spreads online, and its ability to create global attention, have raged across many fields. Within political science,

scholars such as Bruce Bimber, Marija Bekafigo, and Caroline J. Tolbert have explored the role of the Internet in political engagement and action. Within anthropology, scholars like Gabriella Coleman have focused on specific online activist groups and their use of digital tools and forums to spread political ideas. Despite much excellent work on themes such as the explanatory power of Big Data in electoral politics and focused ethnographic work on groups like Anonymous, scholars examining the politics of the Internet have yet to adequately account for the importance of the emergent interactions of online and offline worlds and the actors, like Internet memes, which develop out of these interactions. Without such an understanding we are left with inadequate analyses that create the conditions for confused theories about the Internet as a technology of social change, and a self-sustaining cycle of misunderstanding about how online and offline worlds intersect. This dissertation seeks to remedy these potential gaps by examining the emergent potential of the overlaps of online and offline spacetimes, rather than considering the Internet as merely an extension of traditional, offline political processes. The central question of my dissertation is thus: how does agency function in the intersections of online and offline spacetimes? And further, what is revealed about agency more broadly through examining such intersections?

In examining these questions I will look at how taking seriously a distributed form of agency can undercut existing systems of authority, and thus make space for real change. This aspect of my dissertation links to the growing, interdisciplinary treatment of nonhumans as actors. This movement can be seen in the book and article series *Object Lessons* (co-edited by Ian Bogost and Christopher Schaberg); Ian Bogost's object oriented ontology treatise *Alien Phenomenology, or What It's Like to be a Thing*; edited volumes like *Making Things International 1* and *2* (edited by Mark Salter, and including excerpts of Chapter Three of my dissertation); and in recent museum exhibits like *Disobedient Objects* at the Victoria and Albert

Museum in London, UK. These texts, in their many variations and media, are creating space for the serious consideration of the life, affect, and agency of nonhumans. This dissertation is both contributing to this literature, and basking in the emerging space it creates. Although many academics still express skepticism about this growing area of study (see Jacoby's 2015 piece in *The Chronicle*), there is an impressive interdisciplinary group of scholars producing work on everything from dust to memes.

Through the process of researching and writing this dissertation I have come to the image of the weaver to capture the interpenetrating of online and offline spacetimes: "Hermes, philosopher of *plural* spaces....[H]e connects, disconnects, and reconnects the endless variety of spaces he traverses....Hermes turns weaver of spaces...Hermes the weaver is at the crossroads, not only of the many routes and spaces, but also of myth and science" (Serres xxxiii). Now, when I examine the Internet I envision interweaving material assemblages bringing various spacetimes into conjunction. The variety of spacetimes exist along a multi-axis continuum—some are more analog while others are more digital, some are more state-based while others are more global, and so on. The spacetimes are in human/nonhuman assemblages, and as Serres writes (and as I address further in Chapter Four) any person or thing simultaneously inhabits as many of these spacetimes as "the society, the group, or the collectivity have formed" (Serres 44-45). The conjunctions of these spacetimes, in turn, fundamentally destabilize assumptions and discursive structures that are dominant in any individual spacetime.

The weaver brings together and intermeshes various material assemblages comprised of human and nonhuman actors:

One must find the Weaver, the proto-worker of space, the prosopopeia of topology and nodes, the Weaver who works locally to join two worlds that are

separated, according to the autochthon's myth, by a sudden stoppage, the metastrophic caesura amassing deaths and shipwrecks: the catastrophe. He works, according to Plato, in a discourse where rational dichotomy and the myth of the two space-times, common measure and the Weaver, all converge. He untangles, interlaces, twists, assembles, passes above and below, rejoins the rational, the irrational, namely, the speakable and the unspeakable, communication and the incommunicable. (Serres 52)

The role of the Weaver is open—anyone or anything can take it up— that which is woven is also open, but in this project I am particularly interested in the interlacing spacetimes of online and offline worlds. As Deleuze and Guattari explain in their discussion of Kafka, these worlds, and their interweaving heterotopic intersections, take the form of assemblages: “Kafka had no admiration for simple technical machines, but he well knew that technical machines were only the indexes of a more complex assemblage that brings into coexistence engineers and parts, materials and machined personnel, executioner and victims, the powerful and the powerless, in a single, collective ensemble” (*Kafka*, 57). The spacetimes and their overlaps take the form of Deleuze and Guattari's assemblages: mixtures of human and nonhuman parts, which come together in collective ensembles. Assemblages and Weavers exist and interact on various scales, to which I will return in Chapter Three. For the moment, this image of interwoven and interweaving heterotopic assemblages is the critical starting point for my dissertation.

I approached my primary questions about the overlaps of online and offline spacetimes with this image in mind. To examine agency in these overlaps I disrupt the foundational binaries of human/nonhuman, natural/artificial, and fiction/non-fiction, with reference to the work of Donna Haraway and Bernard Stiegler. This disruption allows for the de-centering of the human: as the agent, as the subject, as the benefactor, as the source of power, and so on. This de-

centering emerges primarily through assemblage theory and its emphasis on distributed agency. Furthermore, de-centering the human has the knock-on effect of destabilizing institutions, like the nation-state, built on the assumption that human and agent are synonymous, which likewise creates space to re-imagine what our systems of authority and accountability are and how they can be otherwise.

Clearing the Way: De-centering the human to make room for emergent or distributed agency

“Worlds ambiguously natural and crafted”
Haraway, *Cyborg Manifesto*

“The technical inventing the human, the human inventing the technical.
Technics as inventive as well as invented.”
Stiegler, *Technics and Time*, 1

“If the world is to be changed in reality, it must be changed in thought and imagination as well.”
Freedman, 122

The overlap of online and offline spacetimes requires both varieties of spacetime be part of the same cosmology—meaning that the two spacetimes function within the same universe. Online and offline worlds are not inherently dissimilar, and neither is more important or more real than the other. In Donna Haraway’s work the cyborg is the perfect icon for this mode of thinking, which requires the breakdown of binaries like natural/artificial: “A cyborg is a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction. Social reality is lived social relations, our most important political construction, a world-changing fiction” (149). The cyborg is the “hybrid” that complicates the boundary between machine and organism, and that the cyborg is from the beginning a creature of fiction and reality exposes the false dichotomy between social reality-as-true and fiction-as-false. Such binaries

often underwrite not only the harsh distinction between online and offline spaces, but also the hierarchical image of the offline world as more real (because it is more natural or true).

The key in all of this is the image of the cyborg, and the destruction that image enacts on the traditional boundary between nature and artifice, nature and the unnatural, with all of the judgment value that entails: “Cyborg imagery can suggest a way out of the maze of dualisms in which we have explained our bodies and our tools to ourselves. This is a dream not of a common language, but of a powerful infidel heteroglossia” (Haraway 181). Haraway is calling for multiplicity as we break free from the foundational binaries that have created such oppression. She also calls on us to embrace the use of “imagination,” fiction, that her use of the cyborg has shown to be so effective, because it is “imagination and material reality” together that are “the two joined centres structuring any possibility of historical transformation” (150). In their book chapter, “Gender Identity in *Star Trek*,” Kathy E. Ferguson, Gilad Ashkenazi, and Wendy Schultz start with the identity problem:

Boundaries become naturalized when this process of naming becomes invisible, when the act of making the distinction disappears and only the distinctions themselves remain. In this way boundaries take on an air of inevitability—it becomes possible to think of them as having no history and requiring no explanation, as simply “the way things are.” (214)

These authors, along with Haraway, are highlighting the role that such distinctions have in making other worlds, other organizations, unthinkable. Haraway, Hayles and others, answer the question of this closure in a different way, by showing the porosity of all boundaries as typified by the destruction of the boundary between bodies and technologies.

Politics is first and foremost about defining what gets to be part of the public sphere (what is part of the discussion, what is thinkable or sensible), and, second, about who has the authority or the “capacity” to deal with these “objects” (Ranciere qtd. in Shapiro, “The Sublime Today” 94). This broader definition of politics makes establishing what counts as part of public discourse a matter of discussion and debate, rather than having a definition that makes certain things, like elections, inherently political, while making the vast majority of issues and people invisible, unthinkable. In the spirit of Haraway’s cyborg I use the opportunities created by this understanding of politics to include a broader spectrum of experiences as part of the political. This spectrum not only makes room for the inclusion of a distributed notion of agency through human and nonhuman assemblages, but also requires an interdisciplinary approach. In my dissertation this interdisciplinary approach is most obvious in my examination of popular culture texts, which I use in both theoretical tool building processes and in the analysis of cases.

The knowledge value of studying the relationship between popular culture and politics is first demonstrated by popular culture participating in politics.¹ Jutta Weldes explains that “power is produced and reproduced culturally, even in a *popular* culture typically dismissed out of hand

¹ The interdisciplinary literature on popular culture and world politics (PCWP) is a central touchstone in this dissertation. I fold into this area most of the international relations theory literature with which my dissertation is in conversation. My understanding of the intersections of world politics and popular culture stems from *International/Intertextual Relations: Postmodern Readings of World Politics*, edited by James Der Derian and Michael J. Shapiro. The essays included in this volume shaped my master’s thesis, which gave birth to my dissertation research. This particular volume focuses on “the ‘space-between,’ the inter texts constructed between knowledge and power in international relations, between the margins and the body of international theory, between textual politics and world politics” (4), and this “space-between” is another opening or lacuna in which my dissertation participates. This “space-between” can also be found in the conference series Popular Culture and World Politics, which was most recently held in London, England in November 2015. The desire to bring together the study of world politics with science fiction texts, in particular, has a long history. *International Relations Through Science Fiction*, edited by Martin Harry Greenberg and Joseph D. Olander, was published in 1978, and paired short SF stories with essays on key IR concepts like arms control and conflict resolution.

as frivolous and thus irrelevant” (5). I would go further, because it is the fact that popular culture is often dismissed as unimportant which allows it to be so effective in framing our understanding of the world. People do not normally feel the need to guard against the influence of popular culture texts, which has the effect of clearing the way for such influence to work.² Weldes goes onto examine some of the ways in which popular culture, specifically, plays a role in politics. First, “popular culture helps to create and sustain the conditions for contemporary world politics” (6). Second, however, popular culture can also “challenge the boundaries of common sense, to contest the taken-for-granted” (6). Either way, studying popular culture and its relationship to politics makes visible aspects of politics that were otherwise hidden. Popular culture can thus act either as a support for or a challenge to political activities.

Richard Helgerson uses cultural texts in his study of the Elizabethan-era project of creating England as a nation-state, in which he notes the roles of humans, institutions, money, and texts. He explains that sixteenth century poets, like Edmund Spenser, who put English poetry on the map had to respond to a “tension between their literary undertakings and the claims of the state” that emerged at this time (2). Some poets responded to this tension by turning their backs on their poetry in the hope of getting “worthier employment” within the state, but:

Another way of dealing with the tension, the way taken by poets of laureate ambition, such as Spenser, Daniel, and Drayton, was to make poetry itself serve, if not the state, then the nation. In chivalric romance, historical narrative, and topographical description, these poets sought to articulate a national community

² There are obvious exceptions to this rule particularly among groups like right-wing evangelical Christians as studied by William Connolly in his work on resonance machines (e.g., *Capitalism and Christianity, American Style*).

whose existence and eminence would then justify their desire to become its literary spokesmen. (2)

One might say that this is not applicable to my project because poetry is not part of popular culture, but the poets' aims in this case were to be part of popular culture and to in fact use their role as part of popular culture to shape the populous, the nation. Helgerson studies a number of other texts, including maps and the plays of Shakespeare, to show how these materials shaped the body of the emerging English nation-state. Without this type of study our understanding of England in the pivotal sixteenth and seventeenth centuries would be sorely lacking in depth and context. Such a study of England takes into account the interweaving influence and development of literature and politics, and creates space for the consideration of other factors. His interdisciplinary study of England in this period is made even richer if placed alongside studies of the scientific revolutions that overlapped with and followed this period.

Literature, cartography, physics—all of these fields resonate with each other as the character of an age emerges. Prigogine and Stengers deal with this process in their discussion of the co-emergence of Newtonian physics and a new “theological discourse” in the eighteenth and nineteenth centuries:

Of course the term *resonance* covers an extremely complex problem. It is not our intention to state, nor are we in any position to affirm, that religious discourse in any way *determined* the birth of theoretical science, or of the “world view” that happened to develop in conjunction with experimental activity. By using the term *resonance*—that is, mutual amplification of two discourses—we have deliberately chosen an expression that does not assume whether it was the theological discourse or the “scientific myth” that came first and triggered the other. (46)

In a parallel way, Helgerson does not claim that the poets determined the birth of the cartographers, or vice versa, rather through resonance, or mutual amplification, the various groups co-emerged with the English nation-state in the sixteenth and seventeenth centuries. The interrelation of theology and science can also be traced by examining early figures in the Royal Society like John Wilkins, who worked both as a scientist and a Church official. Wilkins published a number of books that attempted to both bring the new science to the masses and overcome the perceived tensions between science and religion.³ These discourses work together through their interactions and resonances to shape the ever-emerging world, and we can only study these interactions using an interdisciplinary approach. This dissertation uses such an approach to capture the character of our current age as it plays out in the intersection of online and offline spacetimes.

The value of studying the relationship between popular culture and political science lies in revealing that popular culture already is a productive part of politics whether we want it to be or not. Cesare Casarino describes philopoesis as “a certain kind of interference between philosophy and literature” (70). He posits that this interference already exists, but he also emphasizes that we are not able to take it into account unless we confront it and study it directly:

This is why the encounter with Marx and Melville became inevitable for me, and why the former cannot be understood solely as a philosopher just like the latter cannot be understood solely as a novelist: One can articulate the potential interference between Marx and Melville precisely to the extent to which they are

³ See: Wilkins, J 1640 [1638]. *The Discovery of a New World Or, A Discourse tending to prove, that 'tis probable there may be another habitable World in the Moone*. London: Printed by J. Norton; Wilkins, J 1640. *A Discourse Concerning a New Planet, Tending to prove, that 'tis probable our Earth is one of the Planets*. London: Printed by R. H.

both thinkers who found it necessary to depart one from the practice of philosophy and the other from the practice of literature in order to experiment with whole new worlds of writing and thought, and who, in doing so, embarked in far-reaching investigations into the political nature of being that are virtually indiscernible from each other. It is in this sense that philopoesis attempts to make Marx a problem for literature and Melville a problem for philosophy as well as to make both a problem for any thought of resistance. (79)

Casarino, here, is making the argument that it is as impossible to deny Melville as a political writer as it is to deny Marx the same status. Cultural texts, both high and low, have the potential to “experiment with whole new worlds of writing and thought” and thus participate in and shape these “far-reaching investigations into the political nature of being” (Casarino 79). Creating and enforcing the boundaries of what can count as political is the very stuff of politics. Popular culture texts are assumed to be apolitical because of current cultural norms, rather than any inherent aspect of their nature.

Science fiction (SF) texts are a useful case study of the role that a particular genre of popular culture texts already plays in politics because SF texts are treated as even less relevant than the average popular culture artifact. Weldes notes: “If it is unusual for popular culture in general to be studied in connection with world politics, it is even more so for world politics and SF to be studied together” (5). Which is unfortunate because SF is a genre of popular culture that is well suited to talking about the present, and, in particular, in talking about the present critically. First, while SF authors often set their texts in the future, the target of these texts is nearly always the present:

More important, of course, SF tells us about the present. As Ronnie Lipschutz notes later in this volume, SF never really is about the future: “It is about us and

the world in which we live.” William Gibson agrees: “What’s most important to me,” he has explained, “is that it’s about the present...It’s a way of trying to come to terms with the awe and terror inspired in me by the world in which we live.” (Weldes 11)

The value of SF texts is not their ability to prophesize the future, but rather their ability to comment on the present, and so create space for everyone to question the present, which then opens up newly imaginable futures. This focus on the present through the use of “alternative worlds” also means that “SF can ‘accommodate radical doubt and questioning’, thus providing space to interrogate contemporary politics” (Weldes 11).

There are direct examples of the impact of SF on our world. First, “the 50’s and 60’s—that is, when the dreams of the SF magazines began to be translated into the physical realities of the mature consumer culture by a generation of designers and engineers who’d come of age in pulp SF era” which saw the literal images from the covers of pulp SF magazines and the pictures painted in the imaginations of readers come to life through design, particularly in consumer goods like cars that “were stream lined to resemble rocket ships” (Disch 7). One could also look at the role of SF, particularly cyberpunk SF, in the development of the Internet as Bruce Sterling has (235). Instead, I want to focus on the “endless circulation of meanings from world politics to SF, from SF to world politics, and back again” (Weldes 12). As I discussed above in my section on popular culture in general, these texts play an active role in the world. One of the reasons that popular culture texts in general, and SF texts even more so, are able to be so active in politics is because people dismiss them as silly or pointless. There is a real problem with that invisibility, however, as it leaves us as vulnerable as Troy: unprepared for the control these texts exert on our understanding of the world. Weldes states that “SF texts are part of the processes of world politics themselves: they are implicated in producing and

reproducing the phenomena that Gregg and others assume they merely reflect” (12). The active nature of the participation of SF texts demonstrates why it is important to study the relationships between politics and SF texts rather than studying SF texts in isolation as possible sources for insight into the world.

There are also political philosophers and theorists who embrace the style of science fiction. Steven Shaviro’s book *connected: or what it means to live in a networked society* uses a variety of SF texts as well as a particular writing style to theorize the political in networked societies. In the introduction to his book, Shaviro cited Deleuze’s embrace of SF as an inspiration (ix). In *Difference and Repetition* Deleuze explains that a “book of philosophy should be in part a very particular species of detective novel, in part a kind of science fiction” (xx). One way that Deleuze invokes the use of an SF frame is that, as in SF, philosophers should “write only at the frontiers of our knowledge, at the border which separates our knowledge from ignorance and transforms the one into the other” (xxi).

Popular culture texts, and SF texts as a subset thereof, have an active, participatory relationship with politics and with political theory. Just as popular culture texts draw on current issues, governmental policies, and elections as subject matter, politics also depends on and draws concepts from popular culture. Popular culture texts also remind us that the world could always be otherwise, that there is nothing necessary about our understanding of ourselves (human nature) or of the way the world works. This knowledge, that the world could be otherwise, stems from the way we experience alternative worlds in popular culture texts, especially SF texts, which allows us to critically examine our present. Popular culture texts of various media have been playing these roles for a long time, Helgerson notes the roles of such actors in the sixteenth and seventeenth centuries: “The kingdom/nation, the text/form, the individual writer, and the discursive community each depended for its identity and its very

existence on the others” (13). He goes on to explain why recognizing the role of these various actors is so important:

The discursive structures within which we all—Africans, Americans, Europeans, and everyone else—now live and work, the division of the world into a system of at least nominally sovereign nation-states and the division of the nation into such substructures as literature, law, history, geography, economics, and religion, came from the sixteenth century...Yet in directing attention to the boundaries as having been drawn at a certain historical moment to meet the psychic needs and to satisfy the material interests of certain individuals and groups, I hope to demystify them...Still, if we cross the established lines often enough, and if we imagine others that intersect them at various odd angles, there is a chance we can create a freer, more permeable world, a world of dotted instead of solid lines. (Helgerson 18)

He emphasizes the role of substructures like literature which he previously described as also being agents (13), he mentions the importance of understanding that there is nothing natural or necessary about our current governmental structures (the state), and also looks to the possibility of a future in which people are more cognizant of and open to other possibilities both in terms of considering what is important and in how we organize ourselves.

In political theory these multiple ways in which popular culture and politics interact should be taken into account. Popular culture texts, and especially SF texts, often create space for critical thinking about the present. Without such critical thinking, it is difficult to see the value of political theory. You need to think critically about the world if you hope to get a grip on both how the world functions, and on what aspects of the world you believe are most important. Carl Freedman, who specializes in studying the relationship between Marxism and SF, states:

“Though the texts of SF, unlike those of Marxism, are not necessarily part of any practical project of revolutionary social transformation, every work of SF does presuppose that the world could be radically different from the way it actually is” (122).

Haraway’s rejection of thinking of anything as “natural” (162) along with the work of scholars like Bernard Stiegler reveals that what we call the human emerged with and was interdependent with technology: there was never a pure human, a natural state subsequently polluted or tainted by technology. Increasingly, we see evidence for those species considered pre-human or other-than human (e.g., Neanderthals or Denisovans) interbreeding with those we consider early humans, and, so, it is difficult to imagine any clear or un-trespassed distinctions between human and nonhuman even at an imagined origin. The central driver in Haraway’s work on cyborgs is the way that she troubles the nature/culture or nature/technology divide. She is an embodied thinker in that there is nothing about her work that indicates leaving the body behind, but she questions the boundaries and composition of bodies. If human bodies are part of nature, are intermingled with nature, then why can they not have a similar interwoven relationship with technology? Also, if the human body intermingles with nature and technology then the reverse is obviously true—nonhuman bodies of all kinds, with their own internal compositions and fuzzy boundaries, interlace with human bodies. In Stiegler (and other theorists like N. Katherine Hayles) is the idea that humans co-evolved with technology from the very beginning, as implied in this section’s epigraph. In her book *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* Hayles examines a number of models of posthumanity, and comes to the conclusion “that we have always been posthuman” (291), in the sense that we have always been something other than a pure, isolated human body. This conception of the human body as always intertwined with nonhumans is also developed in the work of Jane Bennett. She not only examines the intermingling of humans and nonhumans, but

also considers the implications of this intermingling for agency: “Humanity and nonhumanity have always performed an intricate dance with each other. There was never a time when human agency was anything other than an interfolding network of humanity and nonhumanity; today this mingling has become harder to ignore” (Bennett 31). Bodies of all kinds are complex assemblages with fuzzy borders, and these bodies then participate in larger assemblages: “Much like Russian *matryoshki* dolls, assemblages contain a sequence of ever smaller ones—functioning groupings of actants in a series of larger, more complex congregations” (Bennett 45).

This ambiguity of nature and artifice forces you to question anything you have taken for granted as natural: from human nature to the state as the necessary unit of political organization. I find Haraway’s approach to troubling all of these boundaries and looking at the consequences particularly convincing: “This chapter is an argument for *pleasure* in the confusion of boundaries and for *responsibility* in their construction” (150). We should enjoy questioning these boundaries, there is a certain aspect of play in the questioning and “confusion,” but there is also “pleasure” in taking “responsibility for their construction” because it is empowering to think that we can be a part of rewriting the world. If nothing is natural or necessary, then we have the opportunity to work towards radical change and re-worlding.

The conclusion she comes to is that our “high-tech culture challenges these dualisms in intriguing ways” (177). “High-tech” culture as a source of challenge to these “dualisms” brings to mind the increasingly large role of online worlds, and what the effects of our increasingly intimate connections to networked technologies will be. Although Haraway was writing in the 1980’s, her take on the challenges posed by high-tech culture have only become more critical and accurate in the intervening decades. The interactions between online and offline spacetimes have made the distinctions between spacetimes less clear over time, and it is the

overlaps that seem to comprise more and more of the world we experience on a daily basis.

That Haraway sees such interconnections as potentially productive rather than escapist is critical here as all too often people dismiss both popular culture and the Internet as escapist wastes of time. Haraway goes on to explain how “high-technology challenges these dualisms”:

It is not clear who makes and who is made in the relation between human and machine. It is not clear what is mind and what body in machines that resolve into coding practices. In so far as we know ourselves in both formal discourse (for example, biology) and in daily practice (for example, the homework economy in the integrated circuit), we find ourselves to be cyborgs, hybrids, mosaics, chimeras. (177)

That we are now understanding ourselves as hybrids or chimeras allows us to examine the role technology plays in our lives, our bodies, and our relationships. Also, this understanding provokes a recognition of the human/nonhuman assemblages in which we take part on various scales.

Both Haraway and Stiegler contest the classical idea that humans, and in my view any object or space, are knowable due to some unchanging essence—some inherent, pure, character that, at least aside from the Fall, is eternal: “Cyborg writing must not be about the Fall, the imagination of a once-upon a time wholeness before language, before writing, before Man. Cyborg writing is about the power to survive, not on the basis of original innocence, but on the basis of seizing the tools to mark the world that marked them as other” (Haraway 175). We need not invert the dichotomy of nature/culture through identification with the goddess, rather we should reject the dichotomy altogether by denying any “original innocence” based on the separation between nature and culture, or humans and technology (Haraway 181). Stiegler reaches the same conclusion in his rejection of the human of Plato and Rousseau. In setting the

ground for his claim that technology co-emerged with the human, Stiegler describes Rousseau's "originary man [who] is originary only because he is not contaminated by the artificial, the mediate, the technical and the prosthetic" (113) and "'man' as an *aeterna veritas*, as something that remains constant in the midst of all flux" (Nietzsche qtd. in Stiegler, 103). Once you reject the dichotomy between human and nonhuman, and more, that between the natural or pure and the artificial then you are in a position to seize the "tools" of the world and to search out those "fruitful openings" and resonances (Haraway 150).

If there was no relationship between bodies and technologies, or if that relationship could only be conceived as a poisonous one that needs to be reversed, then my work would not make sense. Disrupting the foundational binaries of the human, both through the work of theorists like Haraway and through the challenges that nonhuman actors present in themselves, makes my questions thinkable. Thinking of the body as part of the world rather than isolated, and thinking of the world as "ambiguously natural and crafted" (Haraway 149) rather than as a Fall-en version of a once pure nature creates the possibility for finding and making "new couplings, new coalitions" (Haraway 170) with both human and nonhuman partners. These "new couplings" can be seen in the work of theorists who, for example, bring together political theory with the latest neuroscience, complexity theory, and so on. These couplings or resonances are at the heart of my dissertation research as I attempt to answer my questions from an interdisciplinary place that takes advantage of these interactions.

Thus we need to understand that our bodies are much more complex and intertwined with the world, with technology, than we have previously accepted: "Developments in microbiology, genetics, and neurobiology increasingly reveal the Cartesian model to be insufficient to explain the complexity of relations, the mutual feedback loops and differential processes of individuation in a bacterium, a gene, or a neural network" (Brians 139). Haraway

and the work on technics by scholars like Stiegler and Mark Cote continues in this same line to demonstrate the interrelations of humans, nature, and technology. Recursive relationships between tools and human bodies are at the center of the study of technics. Mark Cote discusses the role of the exteriorization of memory into nonliving materials (stone tools): “The key is the effect of the exteriorization of memory wherein lithic industry acts as an *inorganic repository of memory*” (6). He goes on to describe Stiegler’s use of exteriorization to explain the evolution of the human in conjunction with technology: “In other words, epiphylogenesis signifies the process whereby *homo habilis* breaks off into a new lineage from previous hominids: witness the originary human. But it is only through a structural coupling with technology that *homo* is differentiated from its evolutionary forbearers” (Cote 7). The human did not exist prior to the development of these early tools.

Furthermore, not only was technology necessary for the human to differentiate itself “from its evolutionary forbearers,” but technology also continues to be an epigenetic force in our development today. In his own words, Stiegler explains early in his first volume on technics that many thinkers have the same “concern” that I have been discussing throughout this section: “that of envisaging a new relation between the human and technics” (22). In his study of this “new relation” he explains that technology and the development of technology are not “passive” in the face of human activity (49). Rather, a dynamic view of technology is paired with an understanding of the originary relationship between humans and technology to give us a new understanding of history:

The problem arising here is that the evolution of this essentially technical being that the human exceeds the biological, although this dimension is an essential part of the technical phenomenon itself, something like its enigma. The evolution of the ‘prosthesis,’ not itself living, by which the human is nonetheless defined as

a living being, constitutes the reality of the human's evolution, as if, with it, the history of life were to continue by means other than life: this is the paradox of a living being characterized in its form of life by the nonliving—or by the traces that its life leaves in the nonliving. There is consequently an evolutionary determinism that is not only biological but also, for reasons we have seen earlier, quasi-zoological. (50)

So Stiegler takes Haraway's cyborg a step further by explaining that we were all already cyborgs from the beginning—and that technology is not an inert partner in our evolution, rather (as noted in the epigraph to this section) humans and technology are active participants in each others' evolutions. The consequences of this cyborgian origin of the human can be traced through the fictional texts I use throughout my dissertation: the reader sees characters from medieval Wales, twentieth century London, and twenty-first century Europe simultaneously live in and interact with multiple spacetimes, agents, and narratives. In fact, as Haraway notes in *The Companion Species Manifesto*, the evolution of humans, technology, animals, and bacteria are interrelated (4). This interrelation can also be seen in the developing literature on the anthropocene.

Stiegler explains that early technological evolution occurred at a similar pace to that of humans: "This ground breaking, which is that of corticalization, is also effected in stone, in the course of the slow evolution of techniques of stonecutting. An evolution so slow—it still occurs at the rhythm of 'genetic drift'—that one can hardly imagine the human as its operator, that is, as its inventor; rather, one much more readily imagines the human as what is invented" (134). He goes on to emphasize that such technological evolutions are reflected in the development of the brain, in the "plasticity of gray matter [that] corresponds to the flake of mineral matter" (135). So there is a mirroring back and forth between technological and biological evolution, and it seems

like a small step to imagine such mirroring happening in all developmental processes.⁴ Again, this new understanding of the relationship between humans and society because it makes technology non-alien in a way that disrupts the binaries which underwrite any hierarchical understanding of the relationship between online and offline spacetimes. Also, Stiegler's semi-active understanding of matter opens up the possibility to think of matter as vibrant (a la Jane Bennett), which allows me to make new, "fruitful couplings" with a whole universe of nonhuman actors across spacetimes. Again, these openings are not just to the idea of technics-as-agent, but also to the idea of animal-as-agent or mountain-as-agent. These fruitful couplings are critical in appreciating both how the heterotopic imbrications of online and offline worlds emerge, and how they function. By examining the nature and operation of fictional heterotopic spaces in later chapters I will further develop the way overlaps of online and offline worlds emerge through the interaction of humans and nonhumans. Further, I will show through these fictional heterotopias that all of the spaces and actors involved in the creation and continuation of these intersections must exist on the same plane, as part of the same level of importance or value.

The Disclaimers (But I would write 500 words, and I would write 500 more...)

The following chapters examine the potential impact of a distributed understanding of agency through an examination of the Internet as an interweaving heterotopic assemblage. I use a variety of texts and cases to analyze how distributed agency is already working in these intersections of online and offline spacetimes, and further consider how it may work in the

⁴ This mirroring of evolutionary processes is becoming more and more common sense to the general public. I have seen this emerging in texts like the BBC radio program *The History of the World in 100 Objects* which traced human history from the stone tools developed at Olduvai (modern day Tanzania) to a solar-powered lamp (<http://www.bbc.co.uk/ahistoryoftheworld/>).

future. The aim of this research is to determine how this understanding of distributed agency can create spaces to challenge and change existing systems of authority and accountability.

I do not want to overstate the potential of memes and hashtags, nor do I want to overstate the newness of the transversal intersections of online and offline spacetimes. However, I do make the case that while they are not panaceas the assemblages, memes, and hashtags I discuss throughout this dissertation make contributions to the study of politics, in general, and to political theory, specifically. I argue that this approach brings a new way to study online/offline phenomena to political science. Although much of this dissertation is in the realm of theory, my approach to these topics is an embodied one. My experience of heterotopic assemblages which both generate and are generated by things like memes and hashtags is visceral. When I watch the Harlem Shake video filmed outside of the Ministry of Education in Tunisia I experience both the humor and the anger of that video as a bodily experience. When I see the images of #BlackLivesMatter protest signs in conjunction with the names of the dead I am shocked anew. These phenomena depend on these mixed, material assembles with both human and nonhuman players. The heterotopic assemblages evolve and open onto other assemblages, creating new and different conjunctions with unknown potentials. This approach does not supplant current approaches to social movements or the study of political communication, but rather offers a different type of richness that can supplement current scholarship in these areas.

Interlude 1. From *Annwvn* to Cyberspace: Using fiction to understand the heterotopic overlaps of multiple worlds

“Arglwyd,” heb un o’r llys, “kynnedyf yr orssed yw, pa dyllydauc bynnac a eistedo
arnei, nat a odynd heb un o’r deupath, ay kymriw neu archolleu, neu ynteu a
welei ryweddawt”

Thomson, 8

‘Lord,’ said one of the court, ‘it is the peculiarity of the mound, whatever
nobleman that may sit upon it, that not he go hence without one of the two things,
either wound or blows, or his seeing a strange sight.’

(My translation)

As mentioned in the Introduction I came to this research project through early experiences with dial-up Internet and a steady diet of cyberpunk fiction. This combination of influences left me with a particular imaginary of what it meant to be connected, and how online and offline worlds relate to each other. It is this imaginary—a utopian cyberspace into which we could escape from the baggage and constraints of our neoliberal reality—which became the first challenge I had to overcome in the process of writing this dissertation. As the obstacle was created in the pairing of fictional and real world experiences I follow Donna Haraway in taking a cyborg-based approach to overcoming it. Haraway uses science fiction (SF) to study cyborgs and examine the politics that result from acknowledging the co-constitution of humans and technology: “Contemporary science fiction is full of cyborgs—creatures simultaneously animal and machine, who populate worlds ambiguously natural and crafted” (149). For Haraway the cyborg, in its self-knowledge of its origin as a hybrid by definition denies the myth of a pure, human origin untainted by technology and knowledge of the world. Haraway uses the cyborg to

write a counter-story of what it is to be in the world. Both fact and fiction are real, and neither can exist apart from the world. We tell stories to change or even invert our spacetime, which works to disrupt the discursive status quo.

Contemporary SF texts are already known to play an important role in generating current understandings of the Internet, but Medieval Welsh stories can act as a counterpoint to this existing image through the relationship they depict between their own parallel realms: the normal world and the Otherworld (*Annwvn*). In the medieval Welsh life world the normal realm and *Annwvn* existed in horizontal relation, neither is superior or inferior, and I use this horizontal construction to reject contemporary hierarchical understandings of the relationship between online and offline spaces: either the offline world is superior because that is where *real* life occurs, or the online world is superior because it offers a more level or fair playing field. I combined what I found in these Medieval Welsh tales with Foucault's concept of the heterotopia to reconfigure my understanding of the relationship between online and offline spacetimes, and to begin my conceptualization of the overlaps or intersections between the two worlds.

Trying to understand what *Annwvn* meant to the early and middle Welsh is difficult because of the many interceding years and the various cultures that have influenced the tales as the texts stand today. Although few prose stories have survived from the medieval period of Welsh history, what we have offers insights into a rich and vibrant culture in which storytelling was a vital part. It is generally accepted that these surviving tales were drawn from a much larger body of "oral literature which was developed, preserved and transmitted over centuries by a highly trained professional order of men of learning" (Bromwich lix), but the purpose behind the crafting of extant versions is still debated. As Kenneth Jackson explains, in the medieval period "the rigid distinction drawn in modern times between the popular literature of the 'folk' and the popular literature of other classes was to some degree unreal and without meaning" (2).

While the upper classes may have been entertained by lost bardic versions of these stories, and the lower classes entertained by other lost oral versions, the surviving written versions are representative of the stories that all classes heard and enjoyed. The settings and details may have varied, but the plots and the key aspects were shared (Jackson 4), passed back and forth between literary and popular versions, and even between oral and written versions (Jackson 24). Another key point from Jackson is that these stories were meant for adults, not children, which implies that the subject matter was in some way reflective of or connected to the adult world of relationships, politics, and history (54). This is particularly useful to emphasize here as modern audiences tend to think “that tales into which magic and the supernatural enter largely are fit only for children,” but this is simply our own “prejudice” (Thomson xvii). In studying medieval Welsh tales like “Pwyll” in the original language and translation one not only finds an alternative model of the relationship between parallel and interweaving spaces, but also another example of the role of popular culture and literary texts in the defining and continuing of a particular understanding of the world.

Even the name *Annwvn*, whatever spelling you choose to use, is controversial: “For *Annwfn* means ‘very deep,’ an ‘abyss’ (*dwylfu*=deep), and nothing could be more unlike the cheerful descriptions given of the place in Welsh literature than such a title” (Hull 149). As Hull points out, the descriptions of *Annwvn* in Welsh texts give no indication that it is located deep underground or that there is anything abysmal about the Otherworld. Another possible etymology is that, as “Ifor Williams explained[,] the name as composed from *dwfn* ‘world’ and a prefix *an-* meaning ‘in’. Hence *Annwfn* was frequently regarded as ‘in’ or ‘under’ the earth, the ‘In-world’ or ‘Otherworld’” (Bromwich and Evans, *Culwch*, 135). Bromwich and Evans go on to explain that “under Christian influence *Annwfn* came to be regarded as synonymous with hell... conversely *Uffern* ‘hell’ is used in the tale in a context where it plainly designates the pagan

Otherworld" (*Culwch* 135). There is no evidence that *Annwvn* has anything to do with souls or the dead. Even when people die in *Annwvn*, usually as the result of hand-to-hand combat, "[t]here is no suggestion here or elsewhere that the souls of those who died remained in Annwn" (Loomis 899). In fact, *Annwvn* can more easily be seen as a "land of delight" (Power 168), where beautiful, "immortal denizens" provide "plentiful provision[s]" of meat and drink to travelers and visitors (Loomis 893). Of course it is also sometimes a place of fighting or raiding, but this seems to often be by the choice of the people that cross into *Annwvn*.

The Four Branches represent the first part of the broader collection known as the *Mabinogion*, which Gwyn Jones describes as "at once a book and a library" (66). The Four Branches are: *Pwyll Penduic Dyued* ("Pwyll Prince of Dyfed"), *Branwen uerch Lyr* ("Branwen Daughter of Llŷr"), *Manawydan uab Lyr* ("Manawydan Son of Llŷr"), and *Math uab Mathonwy* ("Math Son of Mathonwy"). The rest of the book consists of the four native tales (*Breudwyt Maxen Wledig* ("The Dream of Macsen Wledig"), *Cyfranc Lludd a Llefelys* ("Lludd and Llefelys"), *Culwch ac Olwen* ("Culwch and Olwen"), and *Breudwyt Ronabwy* ("The Dream of Rhonabwy")) and the three romances (*Owein or Chwedyl Iarlles y Ffynnawn* ("Owein" or "The Lady of the Fountain"), *Historia Peredur uab Efwrc* ("Peredur Son of Efwrc"), and *Ystoria Gereint uab Erbin* ("Gereint Son of Erbin")) (see Jones and Jones). As a collection these stories are found together in a number of medieval Welsh manuscripts, but the stories also have histories separate from each other.

Though I cannot presume to understand *Annwvn* precisely as those who were entertained by these stories in medieval Wales, I can describe *Annwvn* as it is presented in these tales, and attempt to work my way backwards through the centuries. Although highly debated, the extant version of the Four Branches, of which "Pwyll" is the first part, is believed to date from "the second half of the eleventh century" with only *Culwch ac Olwen* having an earlier

potential date of redaction (Jones and Jones ix). “Pwyll,” however, is seen as the earliest story that makes extensive use of *Annwvn* (Hull 149), with alternating sections of the plot being set in the normal world and in *Annwvn*, which is why I will focus on it in my case study. The dating of “Pwyll” is important because the timing of the crafting of the extant version will help determine “whether the man [or woman] who wrote the Four branches was indebted to French and Anglo-Norman literature and ways of thought and life, or on the contrary, belonged to the period of Welsh literature which preceded the Norman conquest of much of Wales” (Charles-Edwards 263). Charles-Edwards argues, based on a combination of orthography and content, that Jones and Jones are generally correct in their dating of “Pwyll,” but does increase the possible date range: “It is, therefore, likely that the Four Branches belong to some time between about 1050 and about 1120” (298). In his introduction to “Pwyll,” R. L. Thomson agrees, “the society depicted is essentially pre-Conquest. It may well be, however, that details of dress and equipment do reflect the contemporary scene rather than show any historical perspective into the past” (xv).

The medieval Welsh *Annwvn* is not yet the land of the *Tylwyth Teg* (the fairy folk as described by Gruffydd), neither is it an equivalent of the Greek Mount Olympus, nor is it an analog of a Christian hell. Rather, *Annwvn* is a realm, separated from the normal world by a border whose porosity varies geographically and depending on the time of year. The normal world and *Annwvn* are different but neither is inherently superior to the other. While characters often remark that the people in *Annwvn* are more beautiful or that the feasts are more plentiful, the denizens of *Annwvn* often have cause to cross over into the normal world to ask for assistance or to find a mate. Also, it is notable that the lives in each realm seem similar to the lives lived in the other: there are hierarchies of power and class, battles, love stories, concerns about reproduction, farmers and soldiers, etc. The people of the two realms also seem quite

accustomed to interacting with each other: they fight, they ask for favors, they get together and have children, a person can live for a time in one realm and cross back over to the other without facing cursed consequences, and so on. The description of the figures, as special but on their way to being human, parallels the *Annwvn* we see as well: it is certainly peculiar, and thus different from the normal world, but it does not carry any true divinity or supremacy about it.

Another important aspect of *Annwvn* and its relation to the normal world in these stories is the ways in which the border between the realms is crossed or breached. From either side it seems like the ability to cross over is only intermittently accessible: at special places, at special times of the year, or some combination of the two. One of the most often cited places of crossing in the Four Branches is the mound (*gorsedd*) at Arberth, which appears in both “Pwyll” and “Manawydan” (the third branch). Ford notes that this particular mound is part of a “cluster of sites: the principal court, from which every honorable or reverent activity commences, a numinous mound, and, possibly, a sacred grove” (xxiii). This is the mound discussed in the epigraph that opens this Interlude, and will be further discussed in my analysis of “Pwyll” below. In the latter part of “Pwyll” there is an allusion to a thinning of the border on every May Eve (when a great claw snatches a prized, newborn colt from Teyrnnon’s farm each year), which is traditionally an important day in the Celtic world.

Tales of *Annwvn*, its inhabitants, the adventures that people from the normal world occasionally have there, and its treasures, are interwoven in the stories of the *Mabinogion* with allusions to historical personages and events. That these stories were for the entertainment of adults rather than children (Jackson), and that their plots and settings were widely used and known, demonstrates that the existence and nature of *Annwvn* and its relation to the normal world as portrayed in these stories has something meaningful to say about the medieval Welsh self-understanding of the universe and their place in it. These stories leave open the existence

of things supernatural and magical, but more importantly they demonstrate an imaginary in which the world of our everyday lives is accompanied by another realm that exists in parallel to it rather than one that must be either superior or inferior. There are echoes in the descriptions of *Annwvn* of the Irish other realms (like *Tír na nÓg*), but *Annwvn* is unique to the Welsh.

“Pwyll Prince of Dyfed”

“Pwyll” survives in manuscript form in medieval Welsh “in two manuscripts, the older of which, the White Book of Rhydderch, Peniarth MS. 4, now in the National Library of Wales, dates from the mid-fourteenth century; the other is the Red Book of Hergest, Jesus College, Oxford, MS. cxi, of the late fourteenth/early fifteenth century” (Thomson xi). The Thomson edition of “Pwyll” is primarily based on the text found in the *White Book of Rhydderch*, but does include some notes from the *Red Book of Hergest*. Both of these manuscripts are believed to date from the fourteenth or fifteenth centuries, but the date at which the texts were first written down is heavily debated and is believed to be at least a century earlier.

In “Pwyll” the multidimensionality of the medieval Welsh lifeworld is revealed. The main character, Pwyll, is from the normal world, but has a number of adventures in *Annwvn* (the medieval Welsh Otherworld). That these two spaces, the normal world and *Annwvn*, overlap becomes clear in two key scenes in “Pwyll” when the action spans both realms simultaneously. These two scenes thus present an opportunity to think through and build upon Foucault’s concept of the heterotopia⁵ as applied to the overlaps of two distinct but interrelated spacetimes. I will build on this analysis further in Chapter Two. Both of these scenes take place

⁵ Short hand list for reference purposes: (1) generated by all societies; (2) change over time; (3) juxtapose several sites in one place; (4) sites of interrelating times; (5) protocols for entering, leaving, and acting within; and (6) act as a space of illusion or compensation in relation to all other spaces.

in traditionally Celtic points of crossing between a normal world and an Otherworld: the first takes place in a forest clearing, and the second at a mound. Such spaces are common throughout literature, but in most examples such spaces would be little more than portals. For example, the wardrobe in C.S. Lewis's Narnia series acts as a doorway from one world to another. In "Pwyll", however, the clearing and the mound are heterotopic overlaps—these spaces are fundamentally *between* the two realms and exist in relation to the broader spaces of the normal world and *Annwvn*.

First, there is a scene early in the story in which Pwyll, who is himself a Prince in the normal world, comes into contact with and offends Arawn, who is one of the kings of *Annwvn*. Pwyll and Arawn meet in a clearing that has mysteriously appeared in the forests in which each person was hunting. This clearing, and at least some of the surrounding forests, constitutes an obvious heterotopia as the single real place juxtaposes space in both the normal world and *Annwvn*. Thus we can see the third principle of heterotopias at work here. One of the implicit characteristics of the clearing is that it only exists intermittently, and perhaps only on this particular day of the year. After the initial offense and confrontation, Pwyll agrees to help Arawn in a task in *Annwvn*, and can return home to the normal world by coming to the clearing exactly one year later, presumably when the clearing will once again be this space of juxtaposition.

Pwyll and Arawn then have to navigate this clearing with both realms in mind, and that brings me to the notion of protocol and so the fifth principle of heterotopias. Pwyll initially offends Arawn by driving off Arawn's pack of dogs from the stag that the dogs had taken down, and then Pwyll sets his own dogs onto the stag. Arawn takes offense at this action, and once Arawn reveals his noble status to Pwyll, Pwyll knows that he must do something to right this offense. The protocols of politeness and status cross both realms.

The second scene I will analyze in “Pwyll” is the scene in which Pwyll meets Rhiannon, who is from *Annwvn* and eventually becomes Pwyll’s wife or partner. The epigraph to this section quotes the opening of this scene in which Pwyll is warned about sitting on this particular mound, *Gorsedd Arberth*. From the epigraph it is obvious that, like the clearing, this mound has a peculiar nature, and we learn quickly that its peculiarity stems from its juxtaposing of the two realms. This expectation is played out quickly as Pwyll immediately sees a beautiful woman riding by on a large white horse, and both the woman and the horse are strangers to his entire court.

The protocols of the mound and also of the relationship between Pwyll and Rhiannon, as a person from *Annwvn*, then come into play. Pwyll repeatedly attempts to make contact with the female rider by sending his fastest horses and riders after her, but because these attempts do not follow the proper protocol they are unsuccessful:

A slow steady pace had the horse in the estimation of whoever saw it, and was coming level with the mound. ‘Men,’ said Pwyll, ‘is there [any] of you all who may know the lady rider yonder?’ ‘There is not, lord,’ said they. ‘Let one go,’ said he, ‘to meet her to find out who she is.’ One arose up, but when he came to meet her on the road, lo, she had gone past. He followed her as fast as he could on foot. But the greater was his speed the more distant was she from him. And when he saw it was to no avail to him pursuing her, he returned to Pwyll, and said to him, ‘Lord,’ said he, ‘it is to no avail as a walker in the world to pursue her.’ ‘Yes,’ said he Pwyll, ‘go to the court and get the swiftest horse that you may know, and go after her.’ He took the horse, and off he went; he reached the level open ground, and he set his spurs to his horse. And the more he pricked his horse, the further she was from him. (Thomson 8; my translation)

By not following the protocol Pwyll cannot access the heterotopic overlap. In this particular scene the proper protocol is both one of medieval class relations (Rhiannon is an upper class lady, and she should be addressed appropriately), and a functional protocol in the sense of Alexander Galloway whose work on Internet protocols will be discussed further in Chapters Two Three. It is as though Pwyll failed to initiate the TCP/IP “handshake” (Galloway 42) which leaves Pwyll and Rhiannon as two computers failing to communicate with each other. It is only when Pwyll actually calls to her and asks her to stop that they are able to meet: “‘Maiden,’ said he, ‘for the sake of the man whom thou love best, stay for him.’ ‘I will stop, gladly,’ said she, ‘and it would have been better for the horse if you had asked earlier’” (Thomson 10; my translation). Pwyll had to follow the proper protocol or else contact between the two realms would not have been possible, and thus the juxtaposition of the mound would not have been functional.

The understanding that the two realms come into contact with each other at certain places and in certain times also comes through in these scenes. The fact that we see individuals from both realms interacting with each other is representative of the fact that these two realms were seen as interconnected at the time. When Arawn tells Pwyll that he is a king in *Annwvn*, Pwyll knows what that means. Arawn is also aware of Pwyll’s place in the normal world as Prince of Dyfed.

In each scene the need to follow appropriate protocols to successfully navigate the overlapping spaces is made clear. As in Foucault’s description of heterotopias, some of these protocols are determined by the society that generates the site in question (like the class protocols that Pwyll must navigate in the clearing after offending Arawn, an Otherworld king), but there are other protocols generated by the interaction of the overlapping worlds themselves. The clearing, for example, appears to only function as a heterotopia (an overlap, a point of crossing) on one day a year. The story itself gives no indication that the timing of this

juxtaposition is determined by societal or cultural rules—no mentions of May Day or perhaps the lunar cycle—and so it seems to be in the nature of the site itself. For the mound, the key protocol consists of sitting upon it, which, while it does interact with issues of status and class (as seen in the above epigraph), does not necessarily derive from any particular norm or structure. Rather, in both cases there are societal and other protocols required to successfully navigate the overlapping spaces. In “Pwyll” I see geography, and in particular geographical features like the mound, as a source for some of these other protocols. This multiplicity of protocols points to the possible emergent role of multidimensional spacetime. Importantly, as in the other texts I will discuss and in the real world cases I will examine, the multiple dimensions of space exist as part of one cosmography—the spaces can thus interact with and co-constitute each other in meaningful ways. Cause and effect do not flow only from the real (or offline) space to the other (or online) space or vice versa, rather these forces and impacts flow both ways and along multiple vectors.

Chapter 2. Heterotopias and the Overlaps of Online and Offline Spaces

The ship is the heterotopia *par excellence*. In civilizations without boats, dreams dry up, espionage takes the place of adventure, and the police take the place of pirates.

Foucault, 27.

Online and offline realms are porous, parallel, and overlapping. I use the terms online and offline because their implied rigidity and separation underlies current understandings of what the Internet is and what role the Internet plays in political life. In this chapter specifically, and in the dissertation more broadly, I challenge this rigidity and in its place offer a spatial model that focuses on the intersections of the online and offline in which actors and forces intersect in potentially new and productive ways. These intersections are not mere portals or doorways. Rather, as I will discuss in more detail in Chapter Three, online and offline spaces are assemblages with porous boundaries whose transversal overlaps contain and constitute heterotopic spacetimes with ties back to both online and offline spacetimes. As discussed in the opening of the introductory chapter the Weaver interlaces disparate parts, and these overlaps are the results of such activity. Through these overlaps online and offline spaces co-constitute each other.

Fictional texts are critical to this theory building process as they highlight such intersections through exaggeration, and in the exaggeration such texts act as magnifying reflections of the times and spaces in which they were written. In this chapter I use two very different fictional texts to examine how overlaps of different categories of space have interacted over time. I will deal first with Herman Melville's short story "The Two Temples," before moving on to China Miéville's novel *The City and The City*. Throughout this chapter I will also refer back to the first interlude and my discussion of "Pwyll." From medieval Wales to a mid-nineteenth

century London theater to a twenty-first century Eastern European city, fictional texts have depicted people navigating multiple realms simultaneously. These texts were chosen because they represent three key periods of human development: the Middle Ages, the industrial revolution with its accompanying move towards urbanization, and post-industrial modernity. I see these texts and the changing spacetimes they reflect as an extension of human history, which stretches back to an origin in which humans emerged through the intersection of biological and technological evolution. In this chapter I focus on the latter texts because they form a useful binary with the first, Melville's "Temples," taking place in the middle of the nineteenth century, and the second, Miéville's *City*, taking place one hundred and fifty years later. Both texts deal explicitly with notions of authority, and how societies manifest systems of authority in heterotopias. Humans have always been at home in and shaped by transversal spaces, in which nothing is truly segregated, unsullied, or natural.

I begin my theory of space with Michel Foucault's heterotopia, which he explains as spaces defined by their relations to other spaces. I thus see the overlaps of online and offline spaces as heterotopic in that they emerge from the interrelation of online and offline spaces, actors, and forces. However, for my analysis I need to further develop Foucault's take on the heterotopia. In addition to his six principles I will consider the implications of a few limitations in Foucault's heterotopia: he considers human societies as the primary constructor of heterotopias and the protocols that manage their boundaries; he emphasizes the importance of clean breaks in time and space; he overlooks the possibility of heterotopias relating to each other; and does not taking into consideration the role of nonhuman actors. Humans and nonhumans create heterotopic spaces together, which overwrite any simplistic distinctions between what is natural and artificial. For example, the electrical grid, as described by Jane Bennett in *Vibrant Matter*, participates in and shapes these spaces. The grid operates according to the *natural* properties

of electrons, and yet the activity of electrons emerges and changes as the electricity interacts with infrastructure, weather (including the increasingly extreme weather patterns caused by human driven global warming), solar flares, spikes in human usage, and so on. While Foucault acknowledges the role of craft in the construction of heterotopias through his use of the society-as-agent, Haraway, Stiegler, and Bennett (see Introduction) do the necessary work to destroy the easy or assumed distinction between natural and artificial which is required to adequately reflect the bio-technical development of humans and the spaces they navigate.

Starting with Foucault's concept of the heterotopia, I will develop a theory of overlapping online and offline worlds, in order to examine the emergent consequences of the relationship between current discourses of the Internet and recent prosecutions of security researchers/hackers. Michel Foucault developed the concept of the heterotopia in his seminal piece, "Of Other Spaces," but, for my purposes, this concept can be expanded upon and challenged through placing Foucault alongside fictional texts. This process of imbrication reveals a number of tools or procedures that I will apply in my later analyses of memes, time, and prosecutions. Each of these fictional texts plays with overlapping spaces, exposing the multidimensionality of space and time, how particular protocols navigate overlapping or juxtaposed spaces, and how the multitude of actors generates and maintains overlapping heterotopic spaces.

Foucault's Heterotopia

In his short article "Of Other Spaces" Foucault introduces the concept of the heterotopia as spaces organized and imbricated in different trajectories of time. Unlike fictional utopias—no spaces—heterotopias are divergent collisions of spacetime within a given epoch. (24). If, as Foucault writes, "Our epoch is one in which space takes for us the form of relations among sites" (23), then heterotopias "are something like counter-sites, a kind of effectively enacted

utopia in which the real sites...are simultaneously represented, contested, and inverted” (24).

While his definition at first glance appears counterintuitive, Foucault is trying to theorize spaces that ought not exist, given society’s often violent demands for order and normativity but which do persist nonetheless. The complexity of the concept requires significant scrutiny. I will go through each of Foucault’s six principles⁶ of heterotopias with the goal of providing conceptual clarity for the rest of the chapter.

According to Foucault’s first principle, it is difficult to imagine a culture that does not generate heterotopias in the constitution of its self as a culture. However, heterotopias are not a universal theory of resistance like proletarianization or the will. Instead, heterotopias “take quite varied forms” (24). I see three key aspects of heterotopias in the first principle: they are immanent to cultures, they are universal but not general, and they are common throughout spacetime. Whether you are looking at a fictional world or a particular example from the real world, heterotopias can be found. The way heterotopias are tied to culture, however, is more complex than was indicated by Foucault: heterotopias are often negotiated between multiple societies, and often involve nonhuman actors. Since Foucault describes heterotopias as being *constituted* by a culture, it is a short step to think of a heterotopia as revelatory of the culture and other agents that generate it. The fictional heterotopias I discuss here not only reveal aspects of the cultures presented in the stories themselves, but are also reflective of their broader political contexts in which they were written. By studying these fictional heterotopias, I will also gain insights into how heterotopias function in general, insights which I can then apply to my study of the present. Thus, I see my work here as one possible way to use popular culture

⁶ Short hand list for reference purposes: (1) generated by all societies; (2) change over time; (3) juxtapose several sites in one place; (4) sites of interrelating times; (5) protocols for entering, leaving, and acting within; and (6) act as a space of illusion or compensation in relation to all other spaces.

texts to reflect on issues in world politics. Finally, that heterotopias vary from culture to culture not only supports the use of heterotopias to study each culture, but also justifies the use of multiple examples: there is no universal case study to draw from.

According to the second principle, variance is intrinsic to heterotopic spaces. For Foucault, “a society, as its history unfolds, can make an existing heterotopia function in a very different fashion; for each heterotopia has a precise and determined function within a society and the same heterotopia can, according to the synchrony of the culture in which it occurs, have one function or another” (25). So societies do not constitute heterotopias at random, rather they generate or alter a heterotopia to fulfill a certain function. The focus on function is interesting because it gives a sense of purpose to each society as though there is a functional necessity which neither society nor heterotopia can live without. Foucault is saying that a society determines a need and then fashions a heterotopia to fulfill it. I disagree with Foucault’s conception of the society as sole agent, but I do embrace the idea that heterotopias are plastic, functioning differently in the same society at different intersections of space and time.

According to the third principle, the “heterotopia is capable of juxtaposing in a single real place several spaces, several sites that are in themselves incompatible” (25). This principle is one of the most critical in my text analysis and resulting conceptualization of space. Not only can one think of the Internet as juxtaposing several sites in a single place, but the way the Internet relates to the offline world often feels more akin to a juxtaposition or even a superimposition than any other relationship. The overlaps I am interested in are heterotopic primarily because of the juxtapositions they embody. In Melville’s short story the plot opens in a church in which the protagonist experiences the time and space of the service, the outside world, and the in-between in which he finds himself simultaneously. One can find similar juxtapositions in recent protests like those in Hong Kong. There is simultaneously the in-person

protest of those occupying the streets, the reports posted online by participants and observers, and the sense of the in-between those further removed from the protest experience as they follow the situation on the ground and online.

The fourth principle defines the break between the discipline of clock time and heterotopic time (26). All heterotopias start “to function at full capacity when men arrive at a sort of absolute break with their traditional time” (26). Foucault describes heterotopias as “linked to slices in time” and goes on to explain that these slices can either be of “indefinitely accumulating time” or “time in its most fleeting, transitory, precarious aspect” (26). As with the second principle, I challenge Foucault here. It is more accurate to think of heterotopias as sites of inter-relating times, rather than requiring a break with traditional time. It is better to think of cuts in time rather than breaks: breaks separate where cuts bleed. Alternately, one could look to Serres who examines the knots or conjunctions of multiple times: “What is an organism? A sheaf of times. What is a living system? A bouquet of times” (75). Think of the human body which includes many intersecting flows of time: cycles of cell death and rebirth, processes of memory and forethought, and the societal time of the work week, to name a few.

The fifth principle which describes heterotopias as “always presuppos[ing] a system of opening and closing that both isolates them and makes them penetrable” constitutes the most visible aspect of most heterotopias (26). In this principle I include the protocols required to cross into and to function within various heterotopic spaces: what must be done to enter or leave the heterotopia? Further, how must one act within the heterotopia? Also important to this principle is the way that the border functions to make the heterotopia visible or invisible (sensible or insensible). Protocols can be found in the medieval society depicted in “Pwyll,” in which the rules determining interactions between those of higher and lower status form a key plot point. Protocol, however, also has a special meaning in the heterotopic interactions of the online and

offline in the sense that Alexander Galloway uses the term: “Now, protocols refer specifically to standards governing the implementation of specific technologies. Like their diplomatic predecessors, computer protocols establish the essential points necessary to enact an agreed-upon standard of action” (7). These protocols are what allow computers to talk to each other, and they govern the process which produces the websites we actually see rather than the underlying source code. These protocols are both the result of early human and nonhuman assemblages that developed the Internet as we know it today, but the protocols also continually shape these assemblages. Protocols are generated through processes of negotiation and discussion which result in “RFC (Request for Comments) documents” (6), but protocols are only established through “[v]oluntary adoption in the marketplace[, which] is the ultimate test of a new standard” (128). So first, an “Internet Standard” is created, which is a “gradual, deliberate, and negotiated” process; second, that standard is published in an RFC likely through one of the “standards bodies” that are “well-established organizations” (130); third, that standard either is or is not widely-adopted; and finally, if it is adopted that standard becomes a protocol and thus must be followed by everyone. Through the process of creation and adoption, established protocols are able to exert control because if people (or machines) do not follow them they cannot participate in the network. Galloway often talks about protocols as the language that networked computers use to communicate with each other (12). While Galloway emphasizes the role of human actors in the writing and adopting of these protocols, the other actors in the Internet assemblages also have clear roles. The protocols have to be crafted with all of the actors in mind, and Galloway acknowledges that machines, like computers, are persistent entities (104). He also goes on to explain: “the same protological forces that regulate data flows within contingent environments such as distributed networks are the same forces that regulate matter itself” (110). Thus, these protocols, which emerged from a human and nonhuman

assemblage, generated and continue to generate the Internet as we know it today: a visual realm in which we interact with people from around the world, buy things, consume and publish information, and so on.

The final principle is a two-for-one: heterotopias “have a function in relation to all the spaces that remain” (27). As with the fourth principle, Foucault uses two extreme cases to define the range of possibilities. First, the heterotopia can exist as a “space of illusion that exposes every real space, all the sites inside of which human life is partitioned, as still more illusory” (27). Second, heterotopias can be spaces of “compensation” in which “their role is to create a space that is other, another real space, as perfect, as meticulous, as well arranged as ours is messy, ill constructed and jumbled” (27). In relation to online and the offline worlds, people often think of the Internet as a space of compensation in which one can potentially escape both physical limitations (i.e., gravity) and also traditional identity categories like “age, gender, race, size or...the human species” (Franck 241), but I find it more often functions as a space of illusion. In this aspect of my analysis, I build on the work of scholars like Wendy Chun. Chun, in her own analysis of cyberspace as heterotopia, emphasizes the idea of cyberspace as a space of compensation which potentially “enables virtual passing” (56) or allows for an “e-commerce paradise...[with] no crowds or obnoxious salespeople...everything is findable, searchable, and orderable” (57). While she notes that such benefits are undercut by the unpredictable or uncontrollable nature of underlying hardware and capitalist control, she still points to the idea of such possibilities as the primary heterotopic characteristic of cyberspace. Perhaps because my focus is on the overlaps of online and offline spaces, I am more interested in cyberspace as a space of illusion. There is no utopia of equality to be found online, but the fact that we cannot find true equality there also reveals the thinness of the equality that we have built or found in the offline world.

In considering the Internet as a heterotopic assemblage that emerges from the overlaps of online and offline spacetimes ethical questions emerge. Bennett explains: “Perhaps the ethical responsibility of an individual human now resides in one’s response to the assemblages in which one finds oneself participating: Do I attempt to extricate myself from assemblages whose trajectory is likely to do harm? Do I enter into the proximity of assemblages whose conglomerate effectivity tends toward the enactment of nobler ends?” (37-38). The other option, of course, is to knowingly stay in proximity to a questionable assemblage, but to try and shape its effects from within (38). Bennett, however, questions this approach because the human is “but one actant operative in the moving whole” (38), and no one part of an assemblage can lead its actions. It is also important to remember and emphasize that this “ethical responsibility” for Bennett includes not just respect for humans and the environment as an abstract concept, but for all human and “nonhuman bodies, forces, and forms” (122). In choosing to participate, or not, in the Internet I am thus embroiled in questions of equality, fairness, and accountability. Although humans cannot control or predict how the Internet-assemblage will move or unfold we have extended (or at least tried to) our system of sovereign laws into this heterotopic space. This process of legislation and enforcement, however, has failed to take into account the role of nonhuman actors, and has assumed that a system of laws or protocols founded on a system of discrete territories should and will work in a place with a different configuration of spacetime. Thus there are both ethical and practical concerns over how behavior is regulated on the Internet. In examining Melville’s “Temples” and Miéville’s *City* I will further develop Foucault’s notion of the heterotopia in order to better tackle these ethical and practical questions.

Herman Melville, "The Two Temples"

Besides, what I wanted was not merely rest, but cheer; the making one of many pleased and pleasing human faces; the getting into a genial humane assembly of my kind; such as, at its best and highest, is to be found in the unified multitude of a devout congregation.

Melville, 95-96

In Melville's short story "The Two Temples" ("Temples") the narrator-protagonist, who is unnamed, visits first a church in New York City and then a theatre in London. The story is set in the mid-nineteenth century. In the two halves of the story Melville plays with notions of space in a way that works well with and extends Foucault's heterotopia. As described in the epigraph, the narrator is searching for an experience of true community or congregation. He first seeks this experience in a rich church, but he is disappointed. In the second half of the story, he is again seeking this experience, and stumbles into a theater by chance where he eventually experiences being part of the "unified multitude of a devout congregation" (95-96). The theatre and the church both act as heterotopias (spaces set off from but related to both the wider world and to each other); thus, both *temples* are analyzed below.

Just as geography plays a key role in the overlapping and heterotopic spaces in "Pwyll," architecture plays a leading role in "Temples." The architecture of the church in particular is designed to be awe inspiring and intimidating, and to clearly delineate who is part of the flock and who is excluded. Yet, because of the intricacies of the architecture and the way that the internal, sacred space interacts with the external, secular space, the church not only becomes a singular heterotopia, but also includes multiple, nesting, heterotopias. When the narrator reaches a landing in the tower of the church, he experiences at least three spaces

simultaneously: the heart of the church as he peeks into the service through a grate, the in-between of the landing, and the street which he sees through a window. The theater, which is one of Foucault's examples of the third principle, includes the stage (where multiple scenes play out), the seating area, the orchestra pit, and the porch. Foucault does not go far enough when he explains the theater as a space of juxtaposition, however, because he focuses on the stage itself. Both the theater and the church in this short story demonstrate that entire buildings can juxtapose multiple sites in one real place: the seats in both the theatre and the church juxtapose the space of performance (the pulpit or the stage) where the action occurs, but the action in both shapes and is dependent on the other aspects of the building in question such as the music (provided by the organ or the orchestra).

Both temples also reveal multiple, overlapping time flows, which challenges Foucault's notion of heterotopic time as necessitating a complete break from existing or normal time. The narrator's relation to time is complicated in both *temples*. While the protagonist-narrator is climbing the stairs in the church tower, he looks out into the street and is confronted with his traditional time when he sees the "beadle-faced man...driving three ragged little boys into the middle of the street" (85). Once he is situated by his ventilation window, however, he experiences the time of the service and his own time which seems to fall between the independent time of the service and the traditional time that continues to flow outside of the church. In the theatre he does note that the time inside is cut off from the time outside, but, as in the church, he experiences multiple times simultaneously within the theatre: the time of the show, of the crowd, of the boy selling ale, and so on. Specifically, the time of the show is tied to its own internal narrative, while the crowd has its own group time which spans beyond the breaks in the action on the stage, and, finally, the boy selling ale follows a capitalist time that loops in and out of the time of the crowd in the rhythm of the show and consumption. Thus the

nature of time in overlapping spaces is multidimensional, and the nesting character of the heterotopic temples amplifies this multidimensionality, making it obvious to the reader.

The “Temples,” as a final challenge to and thus expansion of Foucault’s heterotopia, not only explores the relationships between a given heterotopic space and the surrounding society, but also sets up and examines the relationship between the two key overlapping spaces, or heterotopias: the church and the theater. Foucault’s sixth principle of the heterotopia is that it has a particular relationship to the society that generates it, but in this text the juxtaposition of the church and the theater is the most revealing relationship. The theater functions as a space of illusion, but rather than targeting “all the space that remains” (Foucault 27), Melville uses the theatre to reveal the illusory nature of the church: there is no devout congregation to be found within the church. Melville also makes it impossible to think of the church as a space of compensation, in regard to the wider world, through juxtaposing the church with the theatre. One could even think of the theatre as a space of compensation for the church, as it is only in the theatre that the narrator becomes part of a congregation, and thus brings full circle the comparison he starts in the epigraph (see beginning of this section). He writes that “this second temple stands unmatched” in terms of the response of those who participated (101). The value of examining the relationships between heterotopias becomes apparent in my study of the heterotopic overlaps of online and offline spaces, by enabling the comparison of multiple overlaps. Importantly, the theater in this instance is not necessarily a place of status or class (again, in contrast to this story’s particular church), but rather includes people from many walks of life. Melville demonstrates through the scenes in the Church that in the nineteenth century society was highly stratified, and that this class system was supported by both institutions of religion and the state. As the story continues, however, and we follow the narrator to London, Melville reveals that in these major urban centers, whose growth was vastly increased by the

industrial revolution, the classes are pushed closer together and spaces in which they mix are emerging. In fact, the mixing of classes in one joined community or assembly is a key feature of the theater-as-heterotopia. The potential overcoming of or moving beyond class is one of the ways in which “The Two Temples” differs from “Pwyll,” whose heterotopic spaces were so tied to class status. This short story acts in some ways as a bridge to the heterotopic space of *The City and The City*, which sees most actors (both human and nonhuman) operating as part of a single protocol-following class with only the force of Breach operating along a different set of protocols.

China Miéville, *The City & the City*

It was, not surprisingly that day perhaps, hard to observe borders, to see and unsee only what I should, on my way home. I was hemmed in by people not in my city, walking slowly through areas crowded but not crowded in Beszel. I focused on the stones really around me—cathedrals, bars, the brick flourishes of what had been a school—that I had grown up with. I ignored the rest or tried.

Miéville, 36

Miéville’s novel, *The City & The City* (*City*), is set in a fictional city of his own creation, but it does have a distinctly Eastern European atmosphere. In a singular geographic space there are two recognized cities (Beszel and Ul Qoma) and the possibility of a third city (Orciny). These two or three cities have a complex relationship with each other. Any given space within the geographical confines of the cities can exist in either Beszel or Ul Qoma or both or neither (and thus perhaps in Orciny). All of the citizens of each city as well as visitors (although the extent of enforcement varies for outsiders and children) must constantly perform the borders as

they move through the area: they must unsee, unhear, untaste, and generally unnotice any aspect of the other city/ies while they are officially in any one of them.

Foucault's definition of the heterotopia includes the idea that heterotopias change over time as the needs of the generative society change over time, but, as in "Temples," the *City* shows some of the limitations of Foucault's definition which stem from his focus on a single heterotopia and its relation to a society. In the case of change over time, *City* highlights the way that these cities evolve and make room for each other over time (and linger, decay, and return): When Beszel is more economically active, Ul Qoma is less so and vice versa, and thus the two cities compensate for each other on a number of levels. When one is more economically active it will have a larger population, more vehicles clogging the streets and rivers, and so on, which means the other city must make room. Nothing is inherent or fixed—the cities co-evolve amidst this flux.

Further, like "Pwyll," *City* places a lot of emphasis on the idea that the overlapping spaces only function because protocols exist and are performed or followed by the actors involved. People must perform the border constantly to both maintain that border and to live their lives within their own cities while overlapping with the other. Moreover, when a person needs to travel to the other city, he or she must perform still more protocols to navigate through Copula Hall, perhaps the most complexly heterotopic space in the novel. Copula Hall combines a border crossing like you might experience driving from San Diego to Tijuana with the administrative structures of embassies and city halls for both Ul Qoma and Beszel. This densely heterotopic environment results in, for example, hallways in which neighboring rooms are in one city or the other. Copula Hall also includes the only meeting spaces in the City in which representatives from both the cities and Breach can all meet together at the same time, and on somewhat neutral ground. The environments themselves must also reinforce and follow these

protocols with particular architectural styles, colors, and fonts acting as markers. Even when these markers are played with, the intricacies of the protocols are followed:

When we drove out, I took Crowi—a provocation I admit though not aimed at her but at the universe in some way—for lunch in Beszel’s little UI Qomatown. It was south of the park. With the particular colors and script of its shop fronts, the shape of its facades, visitors to Beszel who saw it would always think they were looking at UI Qoma, and hurriedly and ostentatiously look away (as close as foreigners could generally get to unseeing). But with a more careful eye, experience, you note the sort of cramped kitsch to the buildings’ designs, a squat self-parody. You can see the trimmings in the shade called Beszel Blue, one of the colors illegal in UI Qoma. These properties are local. (53)

These coded differences are used as cues for the performance of the border that cannot always be written clearly on a map.

Finally, as in both “Pwyll” and “Temples,” the heterotopias, the overlapping spaces, in *City* present a challenge to Foucault’s notion of heterotopias as spaces fashioned by individual, agentic societies. In *The City and The City* there are at least two, and perhaps three, societies that in some way constitute the heterotopia that encompasses the geographic area. As already mentioned, individuals, both members of the various societies involved and outsiders like tourists, are constantly re-inscribing (or challenging) the structure, protocols, and functions of the various overlapping spaces. Miéville also repeatedly emphasizes the role of Breach, which is the security force that punishes and eliminates those who do not perform the border between the cities properly. Both cities require Breach; Breach is part of the function of the overall heterotopia and the individual cities. Furthermore, Miéville mentions the role of nonhuman players like the river that runs through the city in the constitution of the space. The river is a

space of movement of goods and people. In the timescale of the novel the river does not change course, but its relationships with Ul Qoma and Beszel shift as the activity of each city changes over time. So it is not a single agentic society, or even a grouping of societies, that generates a heterotopia, but rather an assemblage of human and nonhuman actors at various scales that interact, and out of that interaction these overlapping spaces emerge and function. I will discuss assemblages in much more detail in Chapters Three and Four.

Through these fictional texts certain characteristics of heterotopic spaces have emerged that define my conceptualization of space and spacetime: the role of protocol, the presence of flux (change), distributed agency, multidimensional spacetime, and the multidirectional flow of cause and effect. These characteristics make the heterotopic assemblages I explore throughout this dissertation critical in two ways. First, I see these characteristics at play in the world, and ignoring them makes it difficult to understand or take into consideration the role the Internet, for example, has in politics. Second, these aspects, particularly the role of protocol and the effects of distributed agency, create opportunities for disenfranchised groups to make their challenges to existing power structures more effective. In these texts, however, one can also find forces and actors that can challenge and in some instances dismantle these heterotopic characteristics by shoring up traditional boundaries, like Breach in *City*, or by re-inscribing dominant power structures and binaries, like the beadle-faced man in “Temples.” These characteristics, based on Foucault’s original theory and expanded through these textual analyses, will guide my examination of the Internet in the rest of this dissertation. In the next section I explore how these heterotopic traits inform and complicate the policy environment of the Internet.

The DarkNet Rises: Cybervillians and the Otherwise Glorious Internet

Online and offline worlds interact in transversal ways. Online and offline spacetimes share many actors: human participants, physical infrastructure, and the general environment (the planet earth, climate change, solar flares, etc.). Yet, if the interactions are transversal and thus multidirectional, why are norms and laws established primarily by offline groups, particularly nation-states? Why are nation-states the main arbiters of *justice* and *criminality* in online spaces and the interactions of online and offline spacetimes? In the fictional texts that I examined here, there are negotiations between various parties that constitute the heterotopic spaces. These negotiations are foregrounded most frequently in *City*, in which Miéville not only lays out how the cities/societies made concessions to each other over time, but also describes the processes through which UI Qoma and Beszel actively work together (and with Breach) to maintain the relations between all of the worlds. Multilateral negotiations including both state and non-state actors are also common in our world, but the terms of such negotiations are generally biased towards the existing power structure. In essence, the legal structures governing activity on the Internet today are based on a system in which a single nation-state, like the United States, assumes the authority and role of Miéville's Breach when they should act more like a Beszel or UI Qoma. In *City* the collection of cities function because they negotiate with and around each other under the aegis of Breach as an independent authority. The Internet exists in the overlaps of offline (terrestrial, analogue spaces and systems) and online (digital, but still material spaces and systems) spacetimes, but the authority over it still lies with offline-based structures of authority. Although I see a lot of potential in the heterotopic overlaps of online and offline spaces, I find the current legal structures governing activity within such overlaps to be deeply troubling. First, the policy structure is static and rooted in analogies to offline crimes and problems. Second, current laws and their interpretation imply that the offline world, and particularly already powerful countries like the United States, is paramount: the

offline world is the source of the standards of justice, the offline world is where true harm occurs, and so on. This system ignores the heterotopic characteristics of the overlap.

This case study revolves around two interrelated questions. First, why do people describe the Internet as alternately safe and horrifyingly dangerous? Second, why do nation-states write and enforce the legislation governing behavior on the Internet? The first question is a question of power and authority, with implications for who we hold accountable. I will examine these two discourses, of safety and danger, as texts, which will allow me to disrupt their dominance and reveal the broader systems of authority behind them. I will begin by describing and analyzing these two discourses: Internet-as-dangerous and Internet-as-safe. I will then explain how we can challenge these discourses through a closer study of the Internet, the ways in which it operates, how we relate to the Internet, and how online and offline worlds relate to and overlap each other. I will then turn to my second question to see how these discourses have both shaped and supported recent trends in the prosecution of individuals who have exposed emergent, or perhaps intentional, vulnerabilities in corporate and government systems and objects. Finally, I will consider some of the ways in which we could think otherwise about the relationship between online and offline spaces in light of these issues. Throughout this analysis I will consider the question of how governing the Internet can be done ethically.

I argue that governments prefer to keep the dark side of the Internet dark to preserve a happy, business-friendly image of the Internet, while justifying increasing government intervention through the example of a few bad-apple cyber criminals or terrorists. One of the key vectors of this balance is the state's ability to maintain a distinction between state-sponsored sabotage (of which there is a long and winding history) and, in this case, hacking. This argument depends on the imbrications of online and offline worlds: state interests operate in

and through both worlds as do corporate interests, and the actual dangers of online worlds are often dangerous because of their offline implications. In particular, I want to work through the implications of the heterotopic overlaps of online and offline spaces listed above. For example, in *City* multiple societies find ways to cooperate in the production of heterotopias. Another model for multiparty negotiation is the process that is already used in creating technical standards for the Internet.⁷ I would like to examine the implications of this type of cooperation in the ways that countries around the world currently legislate activities in these overlaps which have complicated relations to place or geographic location. This situation raises serious questions about authority and accountability: domestically, internationally, and trans-dimensionally. Why should the offline determine the policies applicable in the overlaps?

Discourse: is the Internet a land of danger or safety?

I start with the ways in which the Internet is understood because the various discourses that exist in public fora underwrite the current directions that governments are taking, which include the prosecution of vulnerability exposers and a rapid increase in unchecked governmental powers. I start with discourses for the same reason Richard Helgerson begins his study of the emergence of England as a nation with discursive structures: “The discursive structures within which we all—Africans, Americans, Europeans, and everyone else—now live and work, the division of the world into a system of at least nominally sovereign nation-states and the division of the nation into such substructures as literature, law, history, geography, economics, and religion, came from the sixteenth century...” (18). These discursive structures emerge from the interactions of human/nonhuman assemblages, which take many forms. These

⁷ See earlier discussion of RFC’s and Galloway.

discourses then affect the functioning and evolution of those very assemblages. In this case I want to start at the level of the discourses, but in Chapter Three I start with other assemblages-as-actors, like Internet memes. As with Haraway's binary-busting cyborg, I want to first understand the discourses that underlie our assumptions about the Internet, and then consider heterotopic overlaps of online and offline spaces in order to denaturalize these assumptions, which creates space to understand the online in other ways.

The first key discourse is that of the Internet as a dangerous space, which is equivalent to what Ronald Deibert would call the securitization of cyberspace. Deibert describes the process of securitization as "the slow transformation of an issue into a matter of national security, with new policies and controls attached...Securitization opens the door to clandestine arrangements, over-classification, and lack of accountability" (124-125). In the case of the Internet this is a process of re-securitization as what we now call the Internet was developed under the auspices of the Defense Advanced Research projects Authority (DARPA) as the Arpanet. Legal protocols and other discursive structures thus shape and reshape the interactions of online and offline worlds. Deibert goes on to explain that this process is often triggered or justified by sudden shocks like 9/11, which resulted in the passage of the USA PATRIOT Act, with huge implications for online spaces and for how governments relate to and police these online spaces (125). This process of securitization brings to mind a scene in the 1995 movie *Hackers*. In this particular scene Agent Richard Gill, of the Secret Service, explains that "hackers penetrate and ravage delicate public and privately owned computer systems, infecting them with viruses and stealing sensitive materials for their own ends. These people, they're terrorists" (*Hackers*). We see this particular speech in multiple contexts: in-person, as he is interviewed on the sidewalk, and through a TV screen as the mother of a main character watches her son being arrested behind Agent Gill. In popular culture, then, the hacker was seen

as equivalent to a terrorist at least by 1995, and can be traced back further in the cyberpunk fiction of the 1980's. The Computer Fraud and Abuse Act (CFAA) was passed in 1986 (with many subsequent amendments, including some aspects of the USA PATRIOT Act), and it is this piece of legislation which is most often used to prosecute someone as a hacker. This particular discourse about the Internet has a history that stretches back much further than 9/11.

Recognizing the long tale of this discourse brings attention to earlier phases of securitization in which the government set up parallel imagery. Deibert sees this equation of hacker and hacking with crime (226) as productive of the tendency towards over-reaction, which can have dire implications for online spaces and which severely limits our ability to think of online spaces in other ways. When crime or terrorism is at the heart of the Internet's discursive structure, all other approaches are eliminated.

In general, this discourse has overseen a strange "blurring together" of "cyber crime, espionage, sabotage, and even warfare" (Deibert 16), such that almost any activity with negative consequences, no matter the intention nor the injured party, can be used to justify an increase in governmental power. These unchecked increases in governmental power impinge on what may be legitimate and necessary security research, while not making the systems more robust or secure. This decrease in or lack of security is often intentional as states use systemic vulnerabilities for their own purposes. Edward Snowden documents have shown that governmental agencies, particularly GCHQ in the UK, have been using tactics like DDOS (Distributed Denial of Service) to target individuals, some of which they later prosecuted for also using DDOS (Coleman, "The Latest," n. pag.). A governmental agency uses a tactic to target a person who has not been charged with or convicted of anything (also affecting anyone else using that particular website or communication platform), and yet use of that same tactic by a private individual or group can carry serious penalties even if used with an intention that is

equivalent to other protected forms of protest or speech (Sauter). When a website is targeted with a DDOS attack it effectively is taken offline as its servers are overloaded with requests, and thus no one can access that site until it is put back online. This type of action can be undertaken in the spirit of offline protests like sit-ins with the overloading of servers being equated with the disruption of normal order in a business or government office. While offline versions of this type have been protected under the aegis of free speech or the freedom to assemble, the online versions with matching intentions have not. Yet, the government is still able to maintain, and trade on, a distinction between hacking and sabotage. Take the case of Jeremy Hammond, one of a number of people prosecuted for hacks like OpStratfor, who were encouraged (and perhaps even directed) to commit such acts by Hector “Sabu” Monsegur who was by that time working for the FBI (Arthur, et al). Monsegur was sentenced in 2014 to time served, while Jeremy Hammond is currently serving a 10-year prison sentence (Pilkington).

You can also find this discourse in the titles of legislation that have been proposed to counter online dangers. For example, Canada’s Bill C-30: “the so-called Protecting Children from Internet Predators Act”—which “included expanding police powers...enabling telecoms and ISPs to voluntarily provide consumer information to authorities without a warrant, forcing telecom companies and ISPs to provide detailed subscriber data without a warrant...” (Deibert 128). Beyond trying to legalize this set of new powers, during the public discussion of the bill it was revealed that the bill would “legislate warrantless informal sharing of information that was already going on between telecom companies and law enforcement and intelligence agencies” (Deibert 128). This use of legislation to retroactively cover governmental activity that is either in a gray area or blatantly illegal is becoming an increasingly common theme when it comes to Internet policy, and falls in line with the history of states retroactively legislating

techniques already in use. That such practices are coming to light further destabilizes this discourse.

The other discourse of interest to me is that of the Internet as a safe place. In particular, I am interested in the ways in which people are convinced that the Internet is a place (or is at least filled with spaces) in which we should feel comfortable sharing and storing vast troves of our personal information, and of course where we should happily shop and consume. Chun touches on this frame in her discussion of cyberspace as a heterotopia, in which she describes cyberspace as a realm in which e-commerce can function in isolation from the dangers and annoyances of in-person commerce (57). In Deibert's terms, when we accept this image of the Internet as a safe place, we are discouraged from tinkering with it. One can see this in the role played by user agreements, for example, and in the illegality of actions like jailbreaking a smart phone or tablet. When the dangers of ceding control of your data are raised (e.g., when passwords are leaked, when identifying information like social security numbers become available, or when credit card information is exposed) the public is simply placated—leaving individuals to deal with the consequences of identity theft with no resulting changes to the policy environment. One potential change could come from requiring more secure forms of data storage and transfer. Such requirements could be worked into the coding infrastructure. Unfortunately, current trends are pointing in the opposite direction as can be seen in recent attempts by governments like the US to outlaw more robust forms of encryption.

To challenge these dominant discursive structures we need to reconceptualize the interactions of online and offline spacetimes, namely the Internet, as heterotopic. First, we need to see these online spaces as material, not ephemeral, bodiless sites of free interaction. Recognizing this can directly challenge the second discourse, that the Internet is a safe space: the materiality of the Internet implies connection and consequence rather than escape and

freedom. Disrupting the narrative of freedom also makes it much more difficult to treat the Internet as merely an extension of the Free Market,⁸ which could ideally regulate itself. The material nature of the Internet can be easily seen in its massive physical infrastructure: “behind every tweet, chat message, or Facebook update there is also a complex labyrinth of machinery, cables and pipes buried in trenches deep beneath the ocean, and thousands of orbiting satellites, some the size of school buses” (Deibert 48). The physical infrastructure means that the online is always dependent on and interwoven with the offline world. This variety of actors thus includes humans and nonhumans as in the fictional texts I discussed previously. The infrastructure’s ubiquity, also evidenced in the myriad devices we all use to connect, oddly causes this materiality to fade into the background as long as things are functioning normally. However, we are occasionally reminded of this infrastructure in spectacular fashion when the network fails unexpectedly. For example, when it was discovered that

[T]he reason Georgian Internet went dark around [the time of the 2012 conflict between Georgia and Russia] had to do with a seventy five year old woman named Hayastan Shakarian, a poor old woman who had no idea what the Internet is. She had been scavenging for firewood and old copper and accidentally cut a fibre-optic cable running parallel to a railway line, severing a key Internet connection. (Deibert 29)

There is also, of course, the infrastructure provided by “laws, rules, and standards” (Deibert 37), which includes what Alexander Galloway has termed protocols. While these may not be as clearly material, rules and laws work through their effects on material objects. For example, unless my computer follows the proper protocols, which it learns through having the proper

⁸ This disruption could also resonate with attacks on the Free Market as an idealized utopia. See Massumi 2015.

coding, it cannot connect to the Internet and thus cannot *talk* to other computers (Galloway 42). Both human and nonhuman actors must follow such protocols. You can also see the material nature of online spaces through the increase in the Internet of Things, which is expanding online spacetime in a way that is different than the introduction of new human users alone. We are increasingly seeing Internet-connected devices that do things like share our information in a completely unintended and unattended way.

Another important challenge to these widespread images of the Internet is the fact that the Internet is not a singular, flat space that we all experience in the same way. The Internet varies in relation to both the time and the place at which it is accessed. Both states and companies play roles, often through interacting with each other, in controlling these differences through censorship, filtering, throttling access speeds, and so on. Also, depending on your context (which includes location, economic situation, personal preference, etc.) you may choose one of a variety of devices to connect to various online spaces, which also has an impact on how you experience *cyberspace*, as would the actual telecom system you use. These variations color and shape the overlap of online and offline spacetimes that you take part in: your connection type and speed may limit your ability to access high resolution images or flash-based applications, your geographic location can limit your access to certain websites, and so on.

Why do States Write the Laws Which Govern the Internet?

My second question is simply: why are analogue nation-states responsible for writing and enforcing the laws which govern the Internet? Specifically, I am interested in why the current legal system prosecutes hackers who expose vulnerabilities rather than those responsible for creating vulnerabilities (or allowing them to continue to exist once they crop up).

This question, to me, reveals a real tension between the intensity of prosecution of so-called cyber criminals, and the utter laxity with which many business and governmental institutions approach online spaces and networked devices. Can we explain the current situation as a simple misunderstanding of the Internet and how it relates to the state system? Or, can we use the heterotopic traits of the Internet (i.e., the role of protocol, the presence of flux, and distributed agency) to argue against the current system? Sure, there are dangers in online worlds, but how we frame and respond to these dangers is, or should be, up for debate. Why do our attempts to control these dangers target some people and entities, but not others? This question touches on a number of others which bring the heterotopic aspects of the case to bear: What is the function of the Internet? Why do people connect to it? What are its protocols? How are these protocols generated? Looking to the system that generates the technical protocols underlying Internet may fit better than taking inspiration from the nation-state system for creating rules and enforcement protocols appropriate for the heterotopic nature of the Internet.

This situation is further complicated when examining cases in which vulnerabilities are emergent rather than intentional. For example, with the rise of the Internet of Things we have to question the convenience or fun we experience with Internet connected devices, and the dangers that such connectivity can expose us to. As recent reports have shown, the supposed conveniences of networked things, like household appliances, are accompanied by an increase in the vulnerability of our data and lives more generally speaking. These newly networked devices are joining vast troves of our data already online. In 2013, the big news in this area was the growing popularity of SHODAN, a search engine which allows anyone to search for and identify insecurely networked technologies. Deibert outlined an illustrative SHODAN case:

Researcher Justin W. Clarke (no relation to Richard Clark) has shown how, by searching the Internet via the SHODAN search tool, anyone could discover MAC addresses for industrial control systems, and then employ a simple computer script he has engineered to log in to those industrial control systems...all that is involved is one person, one search, and one script, and the result is total access. Clarke quietly notified RuggedCom, which did nothing for months, leading him to go public with his discovery. "It is esoteric, it is obscure, but this equipment is everywhere...this is what's used in electric substations, in train control systems, in power plants, and in the military..." (Deibert 185)

Even just exposing these emergent, meaning potentially non-intentional, vulnerabilities is a risky business under the current regime of legal protocols. If we examine the governmental responses to people exposing such vulnerabilities we find a record of prosecution and intimidation of the exposers, rather than any action taken against those corporations or governmental entities responsible for the insufficiently protected objects and networks. When your refrigerator or a city's traffic light system exist as or in an insufficiently protected overlap of online and offline spacetimes, why does a government prosecute the person pointing out the potential security issue, rather than those responsible for the situation? Alternately, why is the response not a collective effort to eliminate these emergent vulnerability as they appear through new standards and practices involving human and nonhuman actors. I would like to examine why this is the case, and how this record of the prosecution of individuals and lack of action against corporations interacts with the similar pattern of action towards whistleblowers, like Edward Snowden, with a corresponding lack of action in or towards the institutions that the whistleblowers have exposed, e.g. the NSA.

I will now turn to some recent examples of people exposing vulnerabilities, both those that are unintentional and some that are decidedly less than unintentional, in both governmental and corporate networked systems. One recent example is the case of Andrew Auernheimer (aka Weev) and Daniel Spitler who were both charged under the Computer Fraud and Abuse Act (CFAA) after collecting “e-mail addresses through a security vulnerability on AT&T’s servers” (Geuss), but AT&T faces no legal repercussions for failing to adequately secure its own website and servers. What incentives do corporations have to increase the security of Internet-connected devices and networks when it is only those who point out their vulnerabilities that face criminal consequences? Who or what is actually being protected by the current interpretation of the CFAA?

In the Snowden case, as in the Clark/SHODAN case, it was only after trying to report an issue multiple times that he took steps to make security vulnerabilities and abuses public. Snowden claimed in his testimony to the European Parliament that he “reported these clearly problematic programs to more than ten distinct officials, none of whom took any action to address them. As an employee of a private company rather than a direct employee of the US government, [he] was not protected by US whistleblower laws, and [he] would not have been protected from retaliation and legal sanction” (6). Earlier in his testimony, Snowden also pointed out that previous “NSA whistleblowers like Wiebe, Binney, and Drake” who used the formal complaint process were “subject to armed raids by the FBI and threats of criminal sanction” (5). I could spend an entire dissertation discussing the information that is continually being made public through the slow release and analysis of the Snowden files, but for this particular chapter, I would just like to point out how much time and energy is being wasted on the question of whether Snowden is a whistleblower or a criminal. Like Deibert, I think the focus should be on the information actually contained in the so-called Snowden Files, much of which demonstrates

that the US government (and its allies) have taken many actions, which are not only akin to actions of cyber criminals, but are also actions that have made the Internet less secure overall (Deibert x). Focusing on the criminal/whistleblower framework gives undue emphasis (and in fact re-inscribes) the power of the state and the offline frame of reference. Thus, this particular dominant discourse only functions if two things are widely accepted: that the offline space is distinct, and that it is the preferred source of norms and laws. My hope is that in emphasizing the heterotopic interrelation of online and offline worlds and rejecting the notion that the offline is inherently better, we can undermine this discursive structure.

Conclusion: The Internet can be a dangerous place, but what are we going to do about it?

If we are to simply follow along the path we are already on, there is a real danger of throwing the baby (the Internet as we know it) out with the bath water: “Faced with mounting problems and pressures to do something too many policy-makers are tempted by extreme solutions...[which could] result in the gradual disintegration of what is in the long-term interest of all citizens: an open and secure commons of information on a planetary scale” (Deibert 234-235). The current and developing pattern of prosecutions make online spaces less safe. This pattern makes the likelihood that someone will come forward to the public when they find a vulnerability less, because they face the danger of prosecution. Even reporting the vulnerability discretely to the company or governmental institution in question risks the possibility of prosecution. How can we use the heterotopic character of the overlaps of online and offline spaces to reconsider this situation outside of the state system of authority and accountability?

I am examining intentional security flaws, but also those unforeseen vulnerabilities that have the potential to either be acknowledged and fixed, or ignored with possibly disastrous consequences. Any policy model or alternate framework will have to deal with both sides of the

equation: the hackers and those (whether human or nonhuman) behind the vulnerabilities. First, as with other areas of criminal law, intention should be taken into account when dealing with both sides, and so my policy model would include the decriminalization of hacking that is done for the common good. Second, a new type of legislation needs to be put in place to criminalize the negligence of corporations and other entities when it comes to providing adequate security and responding to emergent vulnerabilities in an appropriate fashion. While corporations and other institutions already face the possibility of civil suits, these suits are only settled retroactively and do not appear to deter future negligence.

The White House recently unveiled a set of voluntary cybersecurity guidelines (Hennessey and O'Brien) and while I hope that such standards will help companies tighten up their existing and future security standards (thus lessening the likelihood of emergent vulnerabilities and improving corporate responses to those that do still crop up) I am disheartened that the double standard of prosecuting those who reveal vulnerabilities and doing nothing to the entities that allow the vulnerabilities to emerge and persist is continuing. This particular set of voluntary cybersecurity standards was developed in the face of real threats to "the nation's crucial infrastructure" (Hennessey and O'Brien), and yet this is the best that could be done? Critics may have been hoping for "incentives" (most likely tax breaks) (Hennessey and O'Brien), but I am left wondering where the punitive measures are for corporations (whether they operate in one of these critical sectors or not) whose laxity towards cybersecurity or even misguided aggressiveness towards cybersecurity leaves us all less secure. Third, I want to include the possibility for entirely new categories of action. For example, what if the foundational protocols of online spaces evolve to require more secure passing of information by default (e.g., requiring all websites and servers to use https or some other open source option), which would make data less vulnerable to attacks by both governments and third parties. Finally, any new

policy model in this area would still need room to make hackers liable in some way, perhaps financially, if their actions cause actual damage.⁹

We also need to take seriously these discourses and actions as forming compelling narratives that we need to counter. As Deibert explains, developing compelling counter narratives to these two current frames of the Internet (and of security researchers as hackers, and thus criminals) can undermine and hopefully divert the “reflexive state and corporate control over cyberspace” (244). As revealed recently, Western intelligence agencies are actively seeking to shape the narrative space. For example, one unit of GCHQ (the British version of the NSA) known as JTRIG (Joint Threat Research Intelligence Group) uses numerous tools and tactics to shape online discourses, including two that were recently exposed by Glenn Greenwald (and files leaked by Snowden): “Among the core self-identified purposes of JTRIG are two tactics: (1) to inject all sorts of false material onto the Internet in order to destroy the reputation of its targets; and (2) to use social sciences and other techniques to manipulate online discourse and activism to generate outcomes it considers desirable” (Greenwald). Exposing such machinations, along with discussing current discursive structures, as I have tried to do here, helps to open up the space for possible alternative narratives, because these discussions demonstrate that there is nothing natural or necessary about the status quo. By disrupting the image of online spaces as free and untainted by state or market influences, Greenwald and others have revealed these overlaps as spaces of illusion—online forums are vulnerable to manipulation in the same ways broader public discourses are.

Deibert offers “liberal democratic principles” as an alternative discourse (237). Similarly Tim Berners-Lee called for the creation of a “global constitution—a bill of rights” for the world

⁹ Such a system would need to be radically different from the one in place today. The way in which financial damages are calculated under the CFAA is one of its most egregious aspects.

wide web, with people “generat[ing] a digital bill of rights in each country—a statement of principals he hopes will be supported by public institutions, government officials and corporations” (Kiss). I wonder why, however, we would look to these concepts and frameworks that are native to offline spacetimes, and are not at all universal even in offline spaces, to underwrite and shape the future of the overlaps of online and offline worlds. Online spaces, like offline spaces, are multiple, and I see no compelling reason to determine the contours and foundations of online spaces through the tenants of an ethos developed in very particular offline spaces. It is difficult to get scholars whose field of study is liberal democracy or liberal democratic regimes to even agree on what those concepts entail, and so looking to the liberal democratic ethos as a guide stone for developing a compelling counter narrative to those put forward by states and corporations seems peculiar. Rather, we should look to existing and developing online communities and those in the heterotopic overlaps of online and offline spaces for inspiration, while still keeping in mind the need to establish certain foundational, really infrastructural, aspects of online spaces like net neutrality. Re-thinking online spaces and these overlaps has the potential to open up our understanding of offline spaces as well through challenging the assumptions and binaries that underwrite our current vision of the present and future.

Thinking of online spaces, and in particular the spacetimes in which online and offline spaces most clearly overlap, in heterotopic terms has much to offer. The two key aspects of heterotopias for the possible rethinking of this policy framework are juxtaposition (3) and protocol (5). Juxtaposition reminds us that there are multiple parties involved—not only are there many traditional state and non-state actors, there are also new emerging actors unique to online spaces and the interactions of online and offline spaces. These actors (both collectives and individuals) play a variety of roles in the creation and implementation of the legal and

technical protocols that both control the borders of these heterotopic spaces and what can be done within them. The current system of protocols, which includes the technical protocols described by Galloway and legal protocols like the CFAA, appear to make the Internet less secure over time. The question that I am left with, then, is how can the protocols evolve to increase security? Relatedly, how can other aspects of the heterotopic nature of these spaces be used to our collective benefit?

Heterotopias as I interpret them imply a distributed sense of agency—the function of a particular space emerges through the interaction of multiple parties—which complicates linear notions of cause and effect. I will discuss this more in later chapters, but this distribution of agency has particular legal ramifications. In this chapter, and in the dissertation more broadly speaking, I explore how a distributed notion of agency complicates our current systems of authority and accountability. In the final section of this chapter I have analyzed how a distributed form of agency along with the heterotopic nature of the Internet (as an overlap of online and offline worlds) challenge the existing policies around hackers or security researchers. These policy discussions draw on an interdisciplinary body of research around the hacker and hacktivism. Combining sociology and communications, Tim Jordan and Paul A. Taylor explore the history and potential of hacking-as-activism in *Hacktivism and Cyberwars: Rebels with a cause?* A more recent work in this area is Molly Sauter's *The Coming Swarm: DDOS actions, hacktivism, and civil disobedience on the Internet*, which explores the particular history and evolution of DDOS as one type of hacktivism. When considering the connections between civil disobedience online and the history of civil disobedience offline, Sauter often explores the lack of public space online, and uses this lack to distinguish DDOS actions from techniques like sit-ins. In Anthropology Gabriella Coleman's work on the free software movement and Anonymous, the hacker collective, offers extensive ethnographic studies of the human components of the

human/nonhuman assemblages through which much of the software and hacktivism most familiar to the public emerges. Although a vulnerability or a security flaw can be created through malicious activity, many of them emerge or are made without malicious intent through an unanticipated convergence of assemblages and actors. Reporting or discovering a security flaw does not bring it into existence. So, while there are more and less appropriate ways to report a security flaw (as opposed to selling it on the zero day black market), the very act of doing security research should not be illegal. In terms of agency and intent, I wonder where the laws concerning the liability of government and corporate actors who produce or maintain insecure systems are? What is the *cyber* version of asbestos? Under what policy regime will late night infomercials advertise class action suits 10 or 20 years from now?

Interlude 2. Pepper Spray Cop: How the Distributed Agency of Memes Can Challenge Existing Systems of Authority and Accountability

Internet memes are assemblages. As Internet memes propagate through and act in the world they often initiate new assemblages, which I will demonstrate through my analysis of the Pepper Spray Cop. The work of Jane Bennett is foundational to my understanding of assemblage. To understand Bennett's version of materialism, and thus assemblages, it is useful to start with the motivation for her project, which is to breakdown the boundary between human and nonhuman entities; "to distribute value more generously, to bodies as such" (13); and "to cultivate the ability to discern nonhuman vitality, to become perceptually open to it" (14). Bennett has a number of strategies to attain these goals. First, she discusses the ways in which all bodies are alike. Second, she builds on these commonalities by explaining the role of "heterogeneous assemblage[s]" (23) in understanding agency as distributed. Third, she uses a series of case studies to both highlight her efforts at being "perceptually open to" vibrant nonhumans and to examine how agency actually works in massive blackouts, obesity, metal chains, stem cells, and so on. Finally, she raises political and ethical questions that were unthinkable without her materialism (e.g. should "theories of democracy" cover a public that includes human as well as nonhuman entities? (108)).

Bennett begins with Spinoza's concept of life: "*Conatus* names an 'active impulsion' or trending tendency to persist" (2). Bennett goes on to explain that "Spinoza's bodies are also *associative* or (one could even say) *social* bodies, in the sense that each is, by its very nature as a body, continuously affecting and being affected by others" (21). This social nature means that bodies are always interacting, and are always already forming more complex bodies or groupings together (although the makeup and the tightness of the connections is variable). Bennett further outlines Spinoza's take on conative bodies:

For Spinoza, both simple bodies (which are perhaps better termed *protobodies*) and the complex or mosaicized modes they form are conative. In the case of the former, conatus is expressed as a stubbornness or inertial tendency to persist; in the case of a complex body or mode, conatus refers to the effort required to maintain the specific relation of “movement and rest” that obtains between its parts, a relation that defines the mode as what it is. (22)

So persistence operates at both the individual and the collective level, and it is persistence as an inherent goal that drives sociality or interaction.

To expand on Spinoza’s “complex or mosaicized modes” Bennett introduces the concept of the assemblage from Gilles Deleuze and Felix Guattari. Bennett describes “assemblages [as] ad hoc groupings of diverse elements, of vibrant materials of all sorts,” and she goes on to explain their internal diversity in membership, power distribution, and topology (23-24). These assemblages, as conative bodies in themselves, “function despite the persistent presence of energies that confound them from within” (23). In terms of agency the importance of assemblages is that they cloud the picture. The human body is always already an assemblage in itself (even within the human body “the *its* outnumber the *mes*” (112)), and so how can we assume that “agency” is a “capacity localized in a human body or in a collective produced (only) by human efforts” (23)? In fact, Bennett argues that the “effects generated by an assemblage are, rather, emergent properties, emergent in that their ability to make something happen (a newly inflected materialism, a blackout, a hurricane, a war on terror) is distinct from the sum total of the vital force of each materiality considered alone...a ‘non-totalizable sum’” (24). The point is that “assemblages,” even a single human body, “are not governed by a central head” (24). Consider the ways in which people talk about the stomach as the human’s second brain because of its powerful role in decision making. The nature of bodies, as described by

Spinoza, does not allow for some all-powerful center, because even if a center exists it will be affected by everything around it. Bennett is not “denying humanity’s awesome, awful powers, but [is] presenting these powers as evidence of our own constitution as vital materiality” (10). So, rather than having a strict division between human-as-agentic and nonhuman-as-passive, Bennett asks us to think of “agency...as something distributed along a continuum” without a single source (28).

In Chapter Two (“The Agency of Assemblages”) of *Vibrant Matter* Bennett uses the “North American Blackout” from “August 2003” (25) as a case study to explore her materialism more generally, but specifically how human-nonhuman assemblages disrupt our understanding of agency (and thus accountability). I find this particular case study important to my current project, because the electrical grid itself is part of the Internet assemblage, and many of the factors that she identifies as agents in the electrical grid are also agents in Internet assemblages. As a “vital materialist” Bennett begins by explaining that “the electrical grid is better understood as a volatile mix of coal, sweat, electromagnetic fields, computer programs, electron streams, profit motives, heat, lifestyles, nuclear fuel, plastic, fantasies of mastery, static, legislation, water, economic theory, wire, and wood—to name just a few of the actants” (25). Although it has been thoroughly investigated, no one is entirely sure (or can prove) why exactly the blackout began, nor can they explain “why the cascade ever stopped itself” (25). According to the “U.S.-Canada Power Outage Task Force report” (25-26) the “agency...extrudes from multiple sites or loci—from a quirky electron flow and a spontaneous fire to members of Congress who have a neoliberal faith in market self-regulation” (28). Bennett’s openness to the vitality of nonhuman actants is apparent here, especially in her discussion of electricity (the “quirky electron flow”) (26-28). In particular, she points out that “[e]lectricity sometimes goes where we send it, and sometimes it chooses its path on the spot, in response to the other

bodies it encounters and the surprising opportunities for actions and interactions they afford” (28). Electricity, as a conative body, is constantly interacting with and reacting to the bodies surrounding it. Humans can design transmission systems that attempt to always give the electron flow the optimal path, but we cannot actually control it. So who or what or which part of the assemblage is to blame for the blackout? Perhaps this is not the right question to be asking. Rather than looking for a single cause, or agent, if we instead use a “theory of distributive agency” we will not be looking for “a subject as the root cause of an effect. There are instead always a swarm of vitalities at play” (31-32).

If there is no one to blame, or rather if we are now unable to lay the blame on someone or something, because “a theory of vibrant matter presents individuals as simply incapable of bearing *full* responsibility for their effects”, “must [we] abandon the attempt to hold individuals responsible for their actions or hold officials accountable to the public?” (37). No. In fact, Bennett’s materialism “broadens the range of places to look for sources” (37), and so widens the potential of who or what can and should be held accountable. Is it possible that the grid itself (as some sort of emergent collective actant) “spoke” via the blackout (36)? Bennett makes a fair argument for the possibility of such communication in that while the event would have to be interpreted by humans in this way, “humans and nonhumans alike depend on a...set of speech prostheses” to communicate (36). The notion of distributed agency, and in this particular case the role of individual energy use and perhaps whom I voted into Congress, also forces me to question myself about my role in the assemblage and thus what portion of the fault I carry.

The Internet-as-assemblage thus creates, and I think thrives by, complications of agency. The Internet I refer to here is this conglomeration of human and nonhuman parts which all have an agentic say in the role the Internet assemblages play in politics with no one part

dominating all of the others. To explore the consequences of these new materialist Internet assemblages I will discuss meme-generating assemblages on the Internet.

The History of Memes

Dawkins coined the term meme in his 1976 book, *The Selfish Gene*. In his study of genes and evolution, Dawkins became curious about the idea that there may be other units of transmission:

We need a name for the new replicator, a noun that conveys the idea of a unit of cultural transmission, or a unit of *imitation*....I hope my classicist friends will forgive me if I abbreviate mimeme to *meme*....Examples of memes are tunes, ideas, catch-phrases, clothes fashions, ways of making pots or of building arches. Just as genes propagate themselves in the gene pool by leaping from body to body via sperms or eggs, so memes propagate themselves in the meme pool by leaping from brain to brain via a process which, in the broad sense, can be called imitation. (192; emphasis in the original)

The tune is a good vehicle to explore two other aspects of memes. First, Dawkins ascribes to memes a certain level of agency or avidity to parallel that given to genes: “Just as we have found it convenient to think of genes as active agents, working purposefully for their own survival, perhaps it might be convenient to think of memes in the same way” (196). Consider the type of tune that gets stuck in your head, an earworm, and it becomes easier to imagine memes as agentic. The existence of the meme in your mind, your memory of it, exerts a certain self-propagating ambition, which leads to your imitating the meme and thus assisting its propagation.

Multiple memes also come together in “co-adapted meme-complexes” (Dawkins 199). As in genetics, those memes that are able to “exploit their...environment to their own advantage” have a higher likelihood of surviving, and this exploitation produces meme-complexes (or meme assemblages) in which individual memes use each other to improve their odds (Dawkins 199). In the case of tunes, consider how a genre of music develops and then becomes dominant, thus making it difficult for other types of music to become popular, to become memes, in the minds of listeners who are already primed by the dominant genre. You can also see this process occurring on a global scale in the way that Western, and in particular American, popular culture texts and references proliferate in the international. This pool of references dominates and shapes the international, but can also act as a source for adaptation or cooptation by anyone, or any meme, in that international.

In the 1989 re-release of *The Selfish Gene*, Dawkins made additions to the original text through endnotes. The endnotes are critical due to the rise and evolution of the Internet since the original publication date. Although still not quite what it is today, the Internet in 1989 is much more familiar to us than the computer setup Dawkins describes in the 1976 edition. In the 1989 endnotes he states:

It was obviously predictable that manufactured electronic computers, too, would eventually play host to self-replicating patterns of information—memes.

Computers are increasingly tied together in intricate networks of shared information. Many of them are literally wired up together in electronic mail exchange. Others share information when their owners pass floppy discs around.

It is a perfect milieu for self-replicating programs to flourish and spread. (329).

He thus introduces the possibility of Internet memes of any kind, but goes on to discuss only the dangers of viruses and worms, while excluding the potential for other memes to flourish “in

intricate networks of shared information” (329). Why limit his concept in this way? While the world certainly still faces the danger of such insidious memes, people do not restrict the term in the same way Dawkins does. Today, the term meme still refers to units of cultural transmission. However, in popular discourse it tends to refer solely to Internet memes. In these Internet memes one can see key aspects that Dawkins laid out in the 1970s and 1980s: they spread through imitation, take up residence in our brains and hard drives as materially encoded patterns, they are agentic in a self-serving or self-propagating manner, and they work together in ways that make them more potent and thus more likely to survive.

The Evolution of a Meme: Pepper Spray Cop

Meme-generating assemblages on the Internet depend on the visual nature of the Internet. These meme-generating assemblages are often centered on particular websites like Reddit and the 4Chan /b/board, which have overlapping, although not completely coinciding, communities of users. Like the footage:fetish:forum (F:F:F) in Gibson’s novel *Pattern Recognition* a website like Reddit involves a range of activities and discussions surrounding these memes. Many popular Internet memes have come out of the Reddit community. One meme of particular interest to my project is the Pepper Spray Cop, which is based on an image of Lieutenant Pike casually pepper spraying students seated across a walkway on the campus of the University of California-Davis during a protest associated with Occupy Wall Street (OWS).

The Pepper Spray Cop meme developed in the Reddit-centered meme-generating assemblage, but it also required another pre-existing assemblage. The community on Reddit as well others were already aware of a certain confluence: the OWS protests, the often-overzealous police response to these protests, and the ubiquitous placement of photographers along with people with cell phones capable of taking images and videos and posting them to the

Internet. After all, we had already seen photographs and videos of protestors being pepper sprayed in the original OWS protests in New York City in Zuccotti Park (Goldstein). The “Occupy UC Davis protests” were a spin-off of the OWS movement, and this particular protest was also met with a *strong* police response, which was captured in photographs and videos by the media, bystanders, and participants (Bell). The UC Davis protest assemblage was partially generated from the OWS/police response/visual record assemblage, and together with the existing meme-generating assemblages like the one on Reddit the Pepper Spray Cop meme was created.

I experienced the generation and evolution of this meme through Twitter rather than on Reddit, but my experience was made possible by the community on Reddit and its tendency to spread these memes beyond their own website. In *Pattern Recognition* the protagonist Cayce Pollard describes the dynamic of a new piece of footage hitting the F:F:F: “The forum will be going crazy, the first posts depending on time zones, history of proliferation, where the segment surfaced” (21). Similarly, once the meme began on Reddit, because of the already existing OWS assemblage that created a widespread interest along with the already existing relationship between Reddit and various social media sites, the Peppery Spray Cop meme went viral rapidly. The generally accepted story of the creation and spread of this meme can be found on its own page on the “Know Your Meme” website,¹⁰ which houses an encyclopedic collection of memes. According to this website the original photo later used as the basis of the visual meme was posted to Reddit first.

¹⁰ <http://knowyourmeme.com/memes/casually-pepper-spray-everything-cop>



Figure 1: <http://knowyourmeme.com/memes/casually-pepper-spray-everything-cop>

The first plays on this image consisted of Photoshop manipulations of the photo which cropped Lt. Pike into famous paintings.



Figure 2: <http://knowyourmeme.com/memes/casually-pepper-spray-everything-cop>

What followed can be described as an explosion of user-generated iterations of this meme that found their way through various overlaps in user communities to Twitter and Facebook, and then to Tumblrs dedicated to the meme itself.

The rapid spread of the meme can be attributed to a number of factors. First, as I already mentioned the image recalled earlier images of OWS protestors being pepper-sprayed, and so you could say that our brains were already predisposed by the earlier meme to be infected by this new image. Second, there were already meme-generating and meme-spreading assemblages in place that actively created and played with this sort of meme. This second factor can also be seen in the third factor, as many, if not all, of the images created from the original photos display traits of earlier popular memes. For example, you have LOLcat versions of this meme in which bold white text, sometimes using LOLcat speech and other times not, is placed on one of the original photos. People are already used to seeing LOLcat meme images, and thus connected to the new meme easily. Another example of the filtering of the Pepper Spray Cop meme through already existing memes was the creation of a Hitler Downfall parody video about the Pepper Spray Cop, in which the now famous scene from *Downfall* is given new subtitles that have to do with this meme. I would describe these examples as co-adapted meme-complexes in the same way the term is used by Dawkins: the creation of these iterations and their staying power were augmented by their association with both the original meme (i.e., LOLcats) and the new Pepper Spray Cop meme. The Pepper Spray Cop meme also had some unique forms. Initially people photoshopped Lt. Pike into famous paintings (i.e., “A Sunday Afternoon on the Island of La Grande Jette” by Georges Seurat and “Guernica” by Pablo Picasso), but there also examples in which the imagery of Pike spraying the seated students has become completely abstracted and only makes sense if the image is understood as iconic and a meme in and of itself. For example, there is a version of this meme in which someone

made Lt. Pike in his iconic pose and a number of the seated students out of gingerbread, and then posted a photo of the gingerbread figures arranged in the appropriate way.



Figure 3: <http://peppersprayingcop.tumblr.com/image/14829257177>

This image and its effectiveness to carry on the meme is a testament to the agency of the original meme-image: that picture is in your mind to stay.

Conclusion: What does this meme do politically? What does this meme reveal?

Even without the Pepper Spray Cop meme the incident at UC Davis would have gained attention because people were already aware of the OWS protests and the sort of responses these protests were getting from police forces across the country, but the nature and extent of that attention was augmented by the existence and spread of the meme. The meme was eventually picked up by the mainstream media, which both brought more attention to the OWS protest assemblage and the meme-generating assemblages that I have been discussing here. The meme also prompted people who associated themselves with Anonymous to discover the

Pepper Spray Cop's personal information and publish it online (they "doxed" him), and thus we know the identity of the man in the picture: Lieutenant John Pike. The meme is an example, in a long line of such examples, of using humor and sarcasm to highlight the absurdity of a political event, and in this case specifically the absurdity of the police response. Interestingly, whether or not the people involved in creating the many iterations of the meme had any political intentions does not really matter, the creators could have gotten involved for the LOLs. The meme-images act politically regardless of the intentions of the human actors.

The material assemblages of the Internet thus play an active role in politics through these memes. The Pepper Spray Cop brought a new form of attention to the UC Davis protest and the wider OWS movement, and the way police forces across the country were responding to these protests. Although Lt. Pike will not face criminal charges and Linda Katehi remains as the Chancellor of UC Davis, the school has had to deal with the consequences of the police response that day (Chea). UC Davis has "agreed to pay \$1 million to settle a lawsuit filed by demonstrators who were pepper-sprayed during an Occupy protest at UC Davis last fall...[and] Katehi...would be required to issue a formal written apology to each of the plaintiffs" (Chea). Like the Pepper Spray Cop meme, the results of this lawsuit augment and expand the attention surrounding the original event. The ACLU, which handled the case on behalf of the students, sees this "settlement [as] a wake-up call for other universities and police departments" (Chea). The meme and the Internet assemblages it developed from were an even earlier wake-up call. With these assemblages in place, with the ubiquity of devices like camera phones with the capability of uploading images and videos in real time to the Internet, and with the self-replicating power of memes, people in power need to ask themselves more questions before acting. It is no longer simply about how will this action play out on the local or cable news, but now people in power must ask themselves how a particular action will play out in these Internet

assemblages, including the meme-generating assemblages. So maybe next time, before administrators authorize such force or before police decide to use the pepper spray they will ask themselves: How will it look when I am pepper spraying Dora the Explorer rather than these protestors?

Chapter 3. Internet Memes—Machines, Assemblages, and the Overlaps of Online and Offline Spaces

“Word-of-mouth meme thing. We don’t really know what it does, yet.
Whether it does anything, really. Where did you hear about it?”
William Gibson, *Pattern Recognition*

In his 2005 novel, *Pattern Recognition*, William Gibson explores the phenomenon of memes spread on the Internet through the eyes of his protagonist Cayce Pollard. The meme in question is an ever-expanding body of film clips that comes to be known simply as “the footage” (3). On her own time, Cayce becomes curious about the footage after being randomly exposed to a clip on the street, and then finding an online forum, “Fetish:Footage:Forum” (3) (F:F:F), populated by people interested in the footage: “The forum has become one of the most consistent places in her life, like a familiar café that exists somehow outside of geography and beyond time zones” (4). The F:F:F is an assemblage that develops alongside the footage meme, but also has an active role in shaping the understanding and spread of the meme.

Like Cayce, I found that my interest in memes could not be ignored. There is a wealth of current and recent research on memes, and on Internet memes in particular, from Limor Shifman and Christopher J. Gilbert in the field of communications, Gabriella Coleman in anthropology, Saara Särnä in international relations, to Jussi Parikka in new media studies (particularly his work on virality). There are conferences dedicated to Internet memes (e.g., ROFLCon, see Walker), and many others that include papers exploring such memes. The ISA 2015 meeting in New Orleans contained at least one panel dedicated solely to Internet Memes: “TD39: Introducing @_PopularCulture to #WorldPolitics2.0” organized by Laura J. Shepherd. Interest in Internet memes as cultural texts also extends beyond traditional academic settings as demonstrated by a recent exhibit at the Museum of the Moving Image: “How Cats Took Over the

Internet.” My interest in memes stems from my examination of the heterotopic overlaps of online and offline spaces, and the emergence of the distributed agency of nonhuman actors. These overlaps have political implications at many scales.

In this chapter, I will explore Internet memes as generative of (and as a demonstration of) interweaving heterotopic overlaps between online and offline spacetimes. Internet memes are often jokes, usually based on a visual gag. These memes spread rapidly, some say virally, both in their original form and in user-generated variations. Memes develop in and in turn create human/nonhuman assemblages in the intersections of online and offline worlds, like the Internet and protests. This chapter will examine the way in which people, ideas, interfaces, software, and protocols (to name a few of the players involved) come together to generate shared meanings in these memes, and how these memes thus acquire a form of distributed agency allowing them to act. It will also examine the particular overlaps that these memes then shape. One such overlap is a particular version of the international that seems ambivalent to geographic boundaries, focused on visual representation, centered around an overlapping set of popular culture texts, in which people connect through emotion as much, if not more, than through information, and through which people get interested in and debate current events. I emphasize the interrelationship of form and content in memes. In my discussion I draw upon a number of memes to demonstrate the continuing influence of early examples, like LOLcats, and to show the direct role that Internet memes have played in recent events events. Specifically, I will examine how memes participate in creating, supporting, and challenging systems of authority and accountability. I close with the case of the Harlem Shake meme and the role it played in the perception of post-Arab Spring regimes in Egypt and Tunisia.

Key Terms

Before delving into my analysis I define some key terms, which include the major players in the emergence and function of memes. Much of my understanding of these terms comes from the work of Deleuze and Guattari. In their work they often give multiple, or at least flexible, definitions for their concepts, thus creating space to tailor the terms to my needs. My terms also build on Gabriel De Tarde who developed a theory of virality applicable to human and nonhuman agents.

Machine: In “1837: Of The Refrain” (“The Refrain” from here on) Deleuze and Guattari write: “*Machines are always singular keys that open or close an assemblage, a territory*” (334). They describe machines as things that interact with an “assemblage undergoing deterritorialization,” and that in fact machines participate in this deterritorialization by “draw[ing] variations and mutations” of the assemblage (333). Machines can thus be seen as the participants or players in assemblages. In other works, like *Kafka*, Deleuze and Guattari alternately use segments and blocks in their discussions of parts or actants in assemblages. Tarde’s monad is similar to Deleuze and Guattari’s machine. Tarde describes “*the tendency of monads to assemble*” as a key characteristic (*Monadology*, 34). In both machines and monads there is the opportunity to examine activity at any scale: at one level of analysis, a molecule is a machine that may participate in the assemblage of a cell, but at a smaller scale the atoms within that molecule act as the machines within the assemblage of the molecule.

When describing the stagemaker’s “machinic statement,” the collection of machines that come together in the stagemaker’s performance, Deleuze and Guattari point to the variety of machines involved:

He sings perched on his singing stick, a vine or branch located just above the display on the ground he has prepared by marking it with cut leaves turned upside down to contrast with the color of the earth. As he sings, he uncovers the yellow root of certain feathers underneath his beak: he makes himself visible at the same time as sonorous. His song forms a varied and complex motif interweaving his own notes and those of other birds that he imitates in the intervals. (331)

The bird's own song and the melodies borrowed from other birds, the picture created on the ground through his arrangement of leaves and their contrast with the dirt, the revelation of the colored feathers, each of these aspects is in itself a machine. They play a part in the function and development of the territorial assemblage that is expressed and enacted in the bird's performance. There are both visual (leaves and feathers) and auditory (the multiple songs) machines. Each stagemaker creates a unique melody by piecing together parts of its own song with other melodies it hears in the rainforest. The stagemaker's song is a collection of co-adapted tunes. This diversity of machines and the media in which they operate figure importantly in this chapter as the wide variety of memes I will address operate across many media. The auditory components are particularly good at operating at a distance in the rainforest setting, and thus have a large impact on the spatial effects of the territorial assemblage. The visual components, in this case, are particularly effective at marking the territory in time. Deleuze and Guattari explain that the stagemaker creates the leaf display "each morning" (315), thus renewing his territorial assemblage daily. Also, the bird focuses the visual displays around his own body: he does not try to mark a visual border around his territory; rather he depends on the sonorous quality of his songs to mark the spatial boundaries of his territory.

Tarde's monads are described as being of infinite variety. He claims: "in any monadological or atomistic system, all phenomena are nebulous clouds resolvable into the actions emanating from a multitude of agents who are so many invisible and innumerable little gods" (*Monadology* 25). These monads, or "little gods," function in a way that is similar to Deleuze and Guattari's machines. They are the players in any collective body, and like the machines have a certain agency that sees them play an active role in these bodies, directing the ends and changes of the assemblages. Tarde also describes the "avidity" of monads, "the immense ambition which from end to end of the world, from the vibrating atom or the prolific animalcule to the conquering king, fills and moves every being" (*Monadology* 60), which adds a needed individual drive to my understanding of the machine. This avidity at any given scale necessarily emerges through the distributed agency of the scale/s below.

Another trait of the machine is its virtual aspect. In my introduction I mentioned that form may play a role in what makes a meme work. There are material examples of memes with particular forms, but form as a machine is unique because of its relation to the virtual. In *What is Philosophy* Deleuze and Guattari discuss art extensively. They describe a piece of art as a "*bloc of sensations, that is to say, a compound of percepts and affects*" (164). This bloc of sensations is made of many material machines, but it is also related to virtual machines. The particular artwork is made of a particular set of materials that were put in place by a particular hand at a particular time, but all of these parts are underwritten by aspects of the virtual. Deleuze and Guattari claim that "if resemblance haunts the work of art, it is because sensation refers only to its material: it is the percept or affect of the material itself, the smile of oil, the gesture of fired clay" (166). I think, however, that the haunting resemblance must also be related to something like virtual forms: the horseness that all horses refer to, the redness that all shades of red lead

back to, maybe even the “liquid paint blue” (166) that all blue links back to. In this way, form and the virtuality of form can play a massive role in memes, and in particular the way that memes relate and adapt to each other.

Assemblage: Assemblages are my de facto unit of analysis. I conceive of assemblages as composed of monad-like machines: “For this is the essential thing: *a fuzzy aggregate, a synthesis of disparate elements, is defined only by a degree of consistency that makes it possible to distinguish the disparate elements constituting that aggregate (discernibility)*” (Deleuze and Guattari, “The Refrain” 344). The idea that an assemblage consists of discernible units also works well with Tarde’s conception of a society:

But this first of all implies that *everything is a society*, that every phenomena is a social fact. Now, it is remarkable that science, following logically from its preceding tendencies, tends strangely to generalize the concept of society. Science tells us of animal societies (see Espinas’ excellent book on this subject), of cellular societies, and why not of atomic societies? I almost forgot to add societies of stars, solar, and stellar systems. (*Monadology* 28)

The image of a society of atoms is the mental picture I have of assemblages. Atoms are seen as discrete, discernible elements, but they do interact with each other, which elements in an assemblage must be able to do.

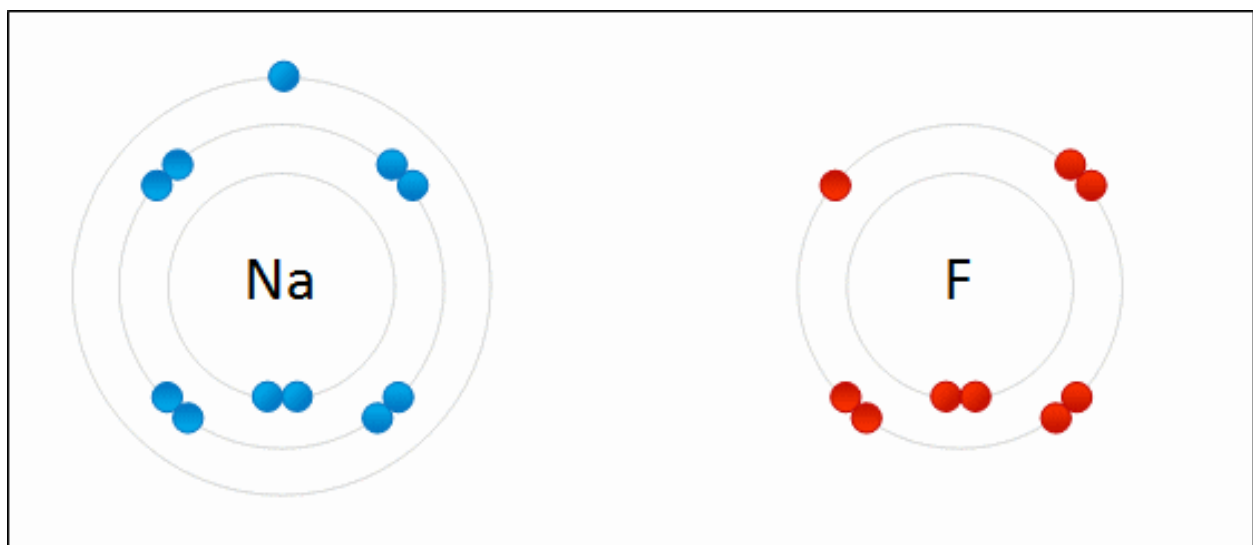


Figure 1: Ionic bond, <https://commons.wikimedia.org/wiki/File:NaF.gif>

Atoms exchange electrons. If everything, or at least most everything, can be conceived of in terms of assemblages (as it can be said that “everything is a society”) this also allows me to adopt or at least try to work with Tarde’s general sociology, which consists of “the laws of such a science, as I understand it, [which] apply to every society, past, present, or future” (*Laws of Imitation* x).

Assemblages vary in time and space, and also at different scales. Assemblages exist at various levels, but the way we perceive them varies. In particular, our perception of assemblages at various scales depends on why we are looking at them in the first place: if you are looking at the nation-state as an assemblage, for example, you may have the “social individual” as the unit of analysis, but if you are looking at the human individual as an assemblage then your unit of analysis might be the “living cell,” which can also be examined as an assemblage on its own scale (Tarde, *Monadology* 8). Early in “The Refrain,” Deleuze and Guattari describe the ways that parts of assemblages move in to and out of a given assemblage: “sometimes one goes from chaos to the threshold of a territorial assemblage... Sometimes one organizes the assemblage... Sometimes one leaves the territorial assemblage for other assemblages, or for somewhere else entirely” (312). There is nothing essential or eternal about any given assemblage, rather they are temporally bounded conglomerations of machines of various types.

Assemblages interact with each other, and are very changeable. Deleuze and Guattari describe one type of interaction between assemblages in which a machine from an existing assemblage becomes a bridge to a new one:

There is no need to effectively leave the territory to go this route; but what just a minute ago was a constituted function in the territorial assemblage has become the constituting element of another assemblage, the element of passage, to another assemblage. As in courtly love, a color ceases to be territorial and enters a “courtship” assemblage. The territorial assemblage opens onto the courtship assemblage, which is a social assemblage that has gained autonomy. (“The Refrain” 324)

The color then acts as a bridge between two or more assemblages, and so the color creates a point of conjunction or overlap between the territorial assemblage and the courting assemblage. Both Tarde and Deleuze and Guattari talk about the ways that assemblages (or societies) can interact with each other. In *What is Philosophy* Deleuze and Guattari discuss “compounds of sensations” using very Tardean language: the three types of compounds are “vibrating sensation—coupling sensation—opening or splitting, hollowing out sensation” (168). Tarde calls such interactions interferences:

Interferences can occur between imitations, between social things, as well as between vibrations and between living types. When two waves, two physical *things* which are pretty much alike, and which have spread separately from two distinct centers, meet together in the same physical *being*, in the same particle of matter, the impetus of each is increased or neutralized, as its direction coincides with, or is diametrically opposed to, the direction of the other. (*Laws of Imitation* 23-24)

Deleuze and Guattari’s “vibrating” and “coupling” sensation compounds are parallel to Tarde’s first interference, in which two waves come together to make a bigger wave, and their “opening

or splitting” compound sensation relates to Tarde’s second interference, in which the two waves struggle for dominance and to some extent cancel each other out. That assemblages can interact in this way also reveals that assemblages function as opened rather than closed systems, in the physics sense. This process of resonance or mutual amplification is at work in the two discourses I discussed in Chapter Two. The Internet-as-safe discursive assemblage couples or vibrates with the Internet-as-dangerous assemblage to support existing structures of authority. Capturing this resonance, understanding it for what it is, suggests a new strategy to challenge the status quo: one way to challenge dominant discourses involves introducing a new discursive assemblage that “splits” or counters a dominant one, which can then cancel out the dominant assemblage.

The direction and action of an assemblage is not determined by any central “brain” or actor: “we should speak less of automatism of a higher center than of a coordination between centers” (Deleuze and Guattari, “The Refrain” 328). Even Tarde who relies on an “ego” monad that directs a society at a particular time emphasizes the fact that there is nothing intrinsically special about the ego monad, it is simply dominant at the time (*Monadology* 35). Bennett asserts a unique characteristic of assemblages: they distribute agency broadly throughout their component parts and interactions (23). The Internet creates, and thrives on, such complications of agency. This distribution of agency depends on a vibrant conception of matter, in line with Tarde’s monads and Deleuze and Guattari’s machines, which Bennett describes:

But the case for matter as active needs also to readjust the status of human actants: not by denying humanity’s awesome, awful powers, but by presenting these powers as evidence of our own constitution as vital materiality. In other words, human power is itself a kind of thing-power...But it is more challenging to

conceive of these materials as lively and self-organizing, rather than as passive or mechanical means under the direction of something nonmaterial, that is, an active soul or mind. (10)

Humans and nonhumans alike are comprised of this vibrant or vital matter, and so we need to take seriously the question of agency. In line with Bennett I conclude that a world of assemblages in which humans and nonhumans alike are comprised of vibrant matter requires a distributed understanding of agency.

The Internet is a global assemblage: a mix of human and nonhuman parts, and, like any assemblage, the Internet is more than the sum of its many parts. The Internet assemblage can include, and at times does include, all of the following: devices, computers, cell phones, tablets; people; various telecommunications platforms and their component parts, telephone lines, fiber optic cables, cellular networks, satellites; protocols governing the connections between computers and the general functioning of the Internet; massive server farms; the various companies and governments involved; the power grids and their component parts; the software on individual devices and in the servers, operating systems, browsers, translators; and so on.

It is more useful, however, to both think of the Internet as a collection of smaller overlapping assemblages and also to recognize that the Internet is always interfacing with other global assemblages, like the global economy. Examples of these smaller assemblages can be found in existing websites and forums, like Cayce's F:F:F, that have established user bases. A slightly larger assemblage can often be found in the intersections of established websites that have contiguous user bases: with individual users acting as openings or bridges between assemblages. When looking at these assemblages, it is important to note their existing limitations and capabilities: Can the platform handle images and videos? Can the servers that

host the website handle massive spikes in traffic? Is the website organized in a way that is approachable to new visitors, or is it only decipherable or accessible to established users?

One smaller assemblage within the larger Internet-assemblage is the set of ever-evolving protocols that allow the Internet to function. Internet memes usually have a visual aspect: they either involve a still image, an animated GIF (Graphic Interchange Format), a video, or perhaps an ASCII (American Standard Code for Information Interchange) drawing. The visual focus is logical because the protocols of the Internet make it a visual medium. You do not see the source code when you visit a website; you see the visual representation the source code generates. Galloway describes the protocols dictating this process: “During the process of developing the Web, Berners-Lee wrote both HTTP [Hypertext Transfer Protocol] and HTML [Hypertext Markup Language], which form the core suite of protocols used broadly today by servers and browsers to transmit and display Web pages” (137). These protocols are the result of early human and nonhuman assemblages through which the Internet as it is today emerged. Through the process of creation and adoption, established protocols exert control as people and machines must follow them to participate in the network.

Thus, these protocols generated and continue to generate the Internet as it is today: a visual realm in which people from around the world interact, buy things, consume and publish information, and so on. The specific protocols that are in place, in conjunction with the increased sophistication of devices and the telecommunication platforms that connect them, result in an Internet uniquely capable of and geared towards visual memes that make use of high resolution imagery and streaming video, both of which involve moving considerable amounts of data.

Expressivity: The concept of expressivity partially explains the outcome or product of an assemblage. Deleuze and Guattari explain that traits like “color in birds or fish” can begin as mere reflections of their “internal” situation or as pure responses to outside stimuli, but this color

“becomes expressive, on the other hand, when it acquires a temporal constancy and a spatial range that makes it a territorial, or rather territorializing, mark: a signature” (“The Refrain” 315). Color, or any similar trait, becomes expressive when it expands its capacity to effect and be effected, when it can join into territorializing processes: that the “function” of the color changes “implies...that the component under consideration has become expressive” (“The Refrain” 315) through participation in a territorialize assemblage.

The relationship between expression and matter is emphasized in “the Refrain” as the majority of their examples are clearly material, and Deleuze and Guattari explain that “expression has a primary relation to matter” (334). Even the song of a stagemaker is based on matter: both because sound requires material to propagate through, and because, as Deleuze and Guattari point out, the way the stagemaker uses sound is particularly suited to his material environment, the rainforest. In *What is Philosophy* they also explain “All the material becomes expressive. It is the affect that is metallic, crystalline, stony, and so on; and the sensation is not colored, but as Cezanne said, coloring” (167). The idea that it is the materials used in an artwork that are the expressive part links back to the passage cited above in the “machines” section: the sensation refers to “the smile of oil, the gesture of fired clay” (166). This emphasis on material in sensation also depends on the interrelationship of an assemblage: the material in question, the play of light, the angle and mood of the observer. Deleuze and Guattari explain: “The material is so varied in each case (canvas support, paintbrush or equivalent agent, color in the tube) that it is difficult to say where in fact the material ends and sensation begins; preparation of the canvas, the track of the brush’s hair, and many other things beside are obviously part of the sensation” (166). The bloc of sensation that is the true being of a work of art is an expression of the material elements and the way they were crafted. That bloc of

sensation “exists in itself,” but does owe its production to the material involved (Deleuze and Guattari, *What is Philosophy* 164). A more concrete example of expressivity can be found in Tarde’s *Social Laws*. Tarde explains that things like “a grammar, a theology, an encyclopædia, a code of laws,” what he calls “grand collective works of the human mind”—these are produced by the interactions of multiple inventions and discoveries over time (204-205).

Tarde explains the nature of the visible universe through the idea of expression: “This is because the simplicity of nature as we currently understand it is in reality the result of an infinite complexity, and because, *beneath the appearance of uniformity, we find a diversity whose depths and secrets we have not yet begun to fathom*” (*Monadology* 45; emphasis in original). So the consistent, law-abiding universe that we know and love is actually an expression of chaotic assemblages at lower scales.

Intensity: One of the trickiest aspects of memes is their emotional impact. It is critical to discuss their emotional impact in a way that is better than a shallow attempt at psychologizing. The concept of intensity has the potential to make this part of the analysis work. At a basic level the intensity of a meme has to do with how intensely one feels an emotional response to it. When Tarde is discussing the way an idea spreads and takes hold in an individual he describes the process: “He embraces the idea, it exalts him, and behold, a new apostle! In this way a political or religious contagion is spread abroad. In this way a whole people may be converted to Christianity, to Islam, and to-morrow, perhaps, to socialism¹¹” (*Laws of Imitation* 30). The new convert is successfully established because of the intensive connection the new idea has with him (which is partially due to past inventions and imitations priming him for this new conversion). He discusses the “deep-seated desire to imitate for the sake of imitation, the desire which is the

¹¹ Feeling the Bern.

original source of all our arts” (*Laws of Imitation* 67). Tarde’s emphasis on imitation as the core driver of cultural production pairs well with Dawkins’ definition of memes as discussed in Interlude Two. This desire to imitate works with the “universal” aspiration of all inventions (*Laws of Imitation* 22), and the desire to conform which arises as a new idea gains traction in a society: “This need for conventionality is so natural to social man that after it has reached a certain degree of strength it becomes conscious of itself and adopts violent and expeditious means for its satisfaction” (*Laws of Imitation* 191). He limits the desire for conformity (and the willingness to be violent to achieve it) to man, but in general he attributes belief and desire (thus intensity) to all things: “Moreover, this hypothesis is in no way anthropomorphic. Belief and desire have the unique privilege of including unconscious states” (*Monadology* 18). Because belief and desire are universal drivers for Tarde, he believes that we should be able to understand the motivations of nonhuman and even nonorganic monads and assemblages/societies: “Thus monism leads us to universal psychomorphism” (*Monadology* 16). However, it is more useful to embrace the intensive drivers of nonhumans, and perhaps even other humans, as radically unknowable in a productive way: nonhuman agents have intensive drivers and potentially affect us because they are so alien. Nonhuman actors can make one aware of what was otherwise invisible because they operate along other resonant intensive pathways.

If processes of exchange or imitation were purely rational, then intensity might not have such large potential explanatory power. But the idea that the virality of an Internet meme like LOLcats or rick rolling can be explained with reason alone is laughable. As Tarde points out, “it is not necessary that the thing which is propagated should be beautiful or useful or rational” (*Laws of Imitation* 49). Things spread because they have that internal ambition (or avidity) to do so, and their success at spreading has to do with how they interact with the world,

overcoming or being defeated by obstacles, and allying with or overtaking other machines and ideas.

John Protevi, in *Political Affect*, offers the opportunity to expand on the concept of intensity through his use of the embodied-embedded approach to cognition, and in particular the role of emotion in cognition. In his preface, he mentions that in “the embodied mind school, you see the basis for a careful discourse on human nature grounded in such basic emotional patterns as rage, fear, and protoempathic identification,” and goes on to explain the impact of being “embedded in social practices that inform the thresholds and triggers at which those basic emotions come into play” (xiv). When I examine Internet memes, and, in particular, when I try to understand why memes are functional (meaning why memes are able to both make an impression on me and also maintain some level of effectiveness over time), it is clear that emotional patterns determine that functionality. Internet memes do not work just because they are logically sound or rationally legible—in fact, that is not even a requirement. They are effective because they have emotional intensity. The memes that have the most initial impact and the most staying power have to bring in emotion: maybe they make you laugh and so incite joy, they might make you angry or upset, and so on. This emotional aspect of Internet memes, which is integral to their function, is generalizable to the broader category of memes.

In *What is Philosophy* Deleuze and Guattari describe the role of memory in art:

Memory plays a small part in art (even and especially in Proust). It is true that every work of art is a *monument*, but here the monument is not something commemorating a past, it is a bloc of present sensations that owe their preservation only to themselves and that provide the event with the compound that celebrates it. The monument’s action is not memory but fabulation. We write

not with childhood memories but through blocs of childhood that are the becoming-child of the present. (167-168)

Memory is not a static slice of the past we access from the present, rather we rewrite memory through our present sensations. Recent neuroscience has demonstrated that “the very act of remembering changes the memory itself. New research is showing that every time we recall an event, the structure of that memory is altered in light of the present moment, warped by our current feelings and knowledge” (Lehrer). So understanding memes that, for example, are humorous for satirical purposes requires a handle on both intensity and this new understanding of memory. The meme comments on a current issue or perhaps a past event, and connects with the viewer/receiver through humor, which draws on memories that are rewritten through this process of remembering, and in particular are affected by the presence of humor. Professional comedian Jimmy Carr describes surprise and timing as two of the key factors to a successful joke (Carr and Greeves): surprise and timing manipulate the expectations of the listener. When this strategy works, it produces the intensive experience of a funny joke. Many memes work on these principles. Based on our existing experiences and thus our ready-made expectations, a cute picture of a cat should just be a cute picture, but when juxtaposed with LOLcat grammar and text there are elements of surprise and timing, as the text is split into two lines. Then our memory is retrained to expect a LOLcat or a similarly formed meme to be funny, and thus to produce a new intensive experience you need a new riff or play on the meme form to reintroduce surprise.

In his work on Hurricane Katrina, Protevi discusses the existence and role of “prototypes by which we judge whether objects belong to a category by seeing how close or how far an object is to our prototype” (173). These prototypes interact with our “virtually available response repertoire” (Protevi 17). Protevi points to the political physiology of the continuing fear of slave

revolt or of blacks getting revenge for slavery as a “bogey” that is instilled in children (173). The content of the rumors spread in the aftermath of Katrina (“mass rape and carnage”[Protevi 178]) was already available in the existing cultural bank of memes, memes that people in the society are primed to believe or identify with. These memes, or prototypes, are based in a reality that does not exist now, and may have never existed in the form that was crystallized in the memes, and yet they are still efficacious. In fact, the historical roots of the black bogeyman meme have to be forgotten for the meme to function because most people are resistant to thinking of themselves as racist. This meme continues to be reinforced and to reinforce peoples’ beliefs and behaviors synchronically: rather than citing the danger of slave revolt or black-on-white violence as revenge for slavery, people point to the dangers of gang violence and the drug war. The content of the meme changes, but the racialized form remains. The affective cognition remains as the meme continues to evoke fear and panic.

These mechanisms for intensity of experience are important partially because of the way ideas spread. For example, Tarde describes the process of going from feeling like an outsider to becoming at “ease in a given society,” which depends on “abandon[ing] one’s self unresistingly to the many surrounding currents of subtle influences against which one first struggled in vain, and to abandon one’s self so completely that all consciousness of this self-abandonment is lost” (*Laws of Imitation* 86). So the process of lessening your fear or even distaste of a new surrounding can only occur through a self-abandoning and forgetting. This makes sense when you think of the way the intensity and content of memory can be rewritten by remembering in changed circumstances (Lehrer). You find yourself in a new society; initially you resist or hate this society based on its contrast with your existing habits and manner, but the process of remembering your existing habits rewrites them. The habit itself becomes an actant in its own reconstitution. This intensive process of change also links up with the desire for conformity

resulting in “epidemics of luxury, of gambling, of lotteries, of stock-speculation, of gigantic railroad undertakings, as well as epidemics of Hegelianism, Darwinism, etc.” (Tarde, *Laws of Imitation* 146).

I can haz memes plz?

The memes I examine are Internet-based memes that generally include both an image and a text component. The image is usually a still image, but it can also take the form of an animated GIF or video, in which case the text often purports to be a subtitle of some kind.¹² One of the most flexible and widespread Internet meme categories is the rage comic: “a series of web comics characters, sometimes referred to as ‘rage faces,’ that are often created with simple drawing software such as MS Paint. The comics are used to tell stories about real life experiences, and end with a humorous punchline” (“Rage Comics”). So, what makes a rage comic work? What players are involved? The players are the machines to the meme-assemblage.

In traditional rage comics a user generates a comic strip style image with a number of sequential frames. Usually, all or most of the characters in the images are made from stock rage faces:

¹² Some memes play on that exact expectation, the Hitler Downfall meme being the best-known example. In the Hitler Downfall meme, the subtitles from a scene in the movie of that name are replaced with subtitles indicating Hitler’s rage at some newly developing meme. (Gilbert)



Figure 2: <http://knowyourmeme.com/photos/497690-rage-comics#comments>

This example uses a number of the stock rage faces (top to bottom, left to right): Oh Crap/OMG, OMG RUN Guy, Fuck Yea, etc. The last frame uses two well-known rage faces: FU guy with a trollface on his forehead. In rage comics one key machine is this cast of stock characters. New rage faces can be and are introduced, but they are not effective until they gain a considerable level of traction, and are thus understandable by a broad audience. These stock characters have the ability to add intensity to a frame of these constructed comic strips with or without the inclusion of text. Juxtaposing “OMG RUN guy” in opposing directions produces the needed

sense of panic just as well as the addition of the text “Alarm goes off I’m late!!!” to the “Oh crap” face.

Another rage comic is the “Neil deGrasse Tyson Reaction” face:

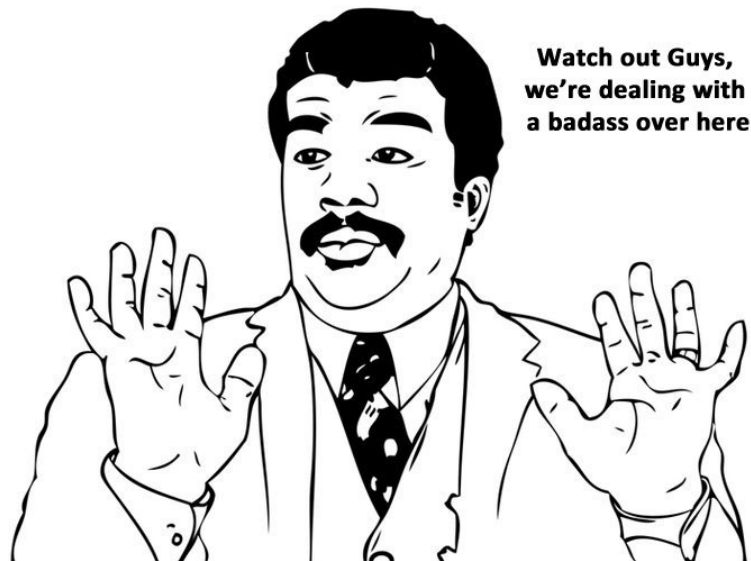


Figure 3: <http://knowyourmeme.com/memes/neil-degrasse-tyson-reaction>

The inclusion of the standard text in this case allows this rage face to work whether the viewer is well-versed in rage comics or not. The set text is an additional machine. If you also know that this is meant to be a depiction of Tyson, the astronomer and public intellectual, then his public persona acts as another player. His personality has become known through outlets like Twitter, his frequent appearances on *The Daily Show with Jon Stewart*, and his hosting of the recent remake of *Cosmos*. Tyson’s persona is a functional machine in this meme because the viewer can imagine him saying “Watch out guys, we’re dealing with a badass over here.” If you cannot imagine it, you can watch the video from which the image and the sentiment of the text are drawn in Tyson’s discussion of Isaac Newton (“Neil deGrasse”).

Another machine in the initial generation of this meme, but also involved in its spread and continual manipulation, is the website Reddit and the community that exists there. Reddit is

one example of a meme-generating assemblage. A website like Reddit involves a range of activities and discussions surrounding these memes (although it is important to note that Reddit is not limited to the creation and spread of the visual memes I focus on). Community members generate new memes and new iterations of existing memes, combine memes, comment on which iterations they like and do not like, discuss the context of the memes, and, importantly, spread the memes outside of Reddit. A user on Reddit initially posted a GIF pulled from the Tyson video on Newton, and in response another user “replied to the thread with a rage comic version of the face” (“Neil deGrasse”). The meme spread via Facebook (“Neil deGrasse”), and continues to crop up on Reddit, Facebook, and Tumblr. Reddit employs a message board or forum setup, with the capability of posting links to videos and images hosted on other sites like YouTube and Imgur. Reddit uses a unique system of upvoting and downvoting in which individual users vote on whether a post should be moved up (and thus become more easily seen) or down, and thus the community of more established users determines what outsiders and casual users see on the main page of Reddit. The main page of Reddit is a great illustration of the “fishbowl” effect: Cayce describes the F:F:F as “a fishbowl: it felt like a friend’s living room, but it was a sort of text-based broadcast, available in its entirety to anyone who cared to access it” (Gibson 65). This system makes it a particularly powerful player in meme generation and spread because it responds in real time to the contagious/infectious aspect of a meme. Also, because of the post/reply thread structure, there are people responding to each other in one place as they quickly remix and manipulate developing memes. Reddit often acts as a source, or at least a clearinghouse, for new and newly co-adapted memes, which Redditors (Reddit members/users) then spread more broadly via social media platforms. The rapid spread of the memes usually occurs on social media sites like Facebook and Twitter, which are more

geared towards broadcasting to a large audience as opposed to Reddit. Reddit can be quite insular, especially in the small (and often terrifying) sub-communities known as sub-Reddits.

One of the ways that Internet memes attain staying power is through their plasticity, and, in particular, the way they can be emptied of their content through co-adaptation. One dominant Internet meme is the LOLcat (“LOLcats”). LOLcats have a particular form: a photo of a cat or cats, with text in a bold white font placed on top of the photo. The text often takes the form of LOLcat speech (which has a unique grammar and vocabulary):



Figure 4: <http://knowyourmeme.com/photos/199476-lo>

Some may argue that the LOLcat is a passing fancy, but it has been surprisingly long-lasting and robust (robust in that the form and content have stayed quite consistent over time). One of the ways that this consistency over time can be explained is that the LOLcat form has also been adapted to or by many other memes. When I see an image with a bold white font on top I am primed for it to be an instance of an Internet meme that is meant to make me laugh. This classic

form thus functions as a virtual form, with many memes referring back to it. The content of a meme can be emptied while the form remains, and the form itself, because of our established responses to the earlier meme, will evoke the same emotions, or at least prime people to respond in a similar way. The conditioning effects of LOLcats thus shape the available language on the Internet and the collective “response repertoire” (Protevi 17).

Beyond the point that such plasticity is possible in Internet memes, and thus memes as a whole, the dominance of form over content also opens up the possibility that a meme can be effective when the knowledge of its content is lacking. The Condescending Wonka meme (“Condescending Wonka”) (whose form is drawn from the LOLcat) can be effective without any awareness of Willy Wonka, meaning that the form of bold white font on top of an image can be used to communicate regardless of content:



Figure 5: <http://knowyourmeme.com/photos/233240-co>

Thus, one characteristic of memes in general is that the persistence of a meme can depend on the extent to which that meme can continue to be effective while being detached from its own history or context. Further, plasticity and, specifically, adaptability to other existing and emerging memes are the secret to longevity, rather than any need to stay precisely the same. LOLcats may have maintained their form, but people constantly adapt the pictures used and the content of the text.

In the case of the “Neil deGrasse Tyson Reaction” rage face Twitter has played an additional role by taking this image-based meme and showing that it can function through text alone. Wil Wheaton, of *Star Trek: The Next Generation* and *Stand By Me* fame, started the “stupid text meme” trend on Twitter (Wheaton, “If you think”): you tweet the text you would put onto a meme-image with a text-based indicator of the intended meme-image in square brackets. The legibility of a “stupid text meme” depends on already existing and well-known meme images. Second, returning to my earlier discussion on the role of timing in humor, the text versions of these memes try to maintain the visual structure or form of the image version by having the first part of the text and the second part of the text separated by the image indicator in square brackets. This grammar recreates the structure of a setup line of text at the top of an image, with the payoff or punchline line of text at the bottom, separated by the image itself. For example, Wheaton tweeted: “If you think we’re done with stupid text memes [SKI INSTRUCTOR] You’re gonna have a bad time.” This grammar follows the structure of the ski instructor meme-image:



Figure 6: <http://knowyourmeme.com/photos/275508-super-cool-ski-instructor>

The traditional, or expected, form of a meme is maintained. This form is important because it allows for these text memes to make memes like the rage comics legible in text form even though they do not necessarily follow that traditional form when they are used as images.

One of the text memes Wheaton retweeted was: “RT@VonAether: @wilw So you invented text-based memes. [@neiltyson] Looks like we have a badass over here.” This text meme worked quite well. The fact that it worked, that the assemblage was able to express the meme successfully and make me laugh, depended on all of the machines and assemblages already mentioned. Of course, the distinction between machines and assemblages is really one based on scale, as I discussed earlier in my key terms section. At one scale this tweet is a machine that can participate in larger assemblages, but in this analysis I look at the machines that allows this tweet to become expressive as an assemblage. First, I needed to be versed in the traditional meme format: an image with two lines of text that is meant to be humorous. Second, I had to be aware of the “Neil deGrasse Tyson Reaction” rage comic. Third, my

awareness of that particular rage comic had to include the image and the text. Fourth, it was made funnier by my knowing who Tyson is and what the background of the image was. Fifth, the machines involved in the initial generation of the Tyson meme had to be operating (Reddit, its community, the people and websites that spread the meme from Reddit to other places online, etc.). Sixth, I had to see the tweet, and to be aware that Tyson's Twitter handle is "@neiltyson." Each of these machines is necessary for the text meme assemblage to express anything, and the intensity of that expression draws from these machines as well as others that may be more unique to my experience. For example, I found this particularly funny at the time (but even more so now in retrospect, which of course is changing my memory of the initial encounter) because I have seen Wheaton and Tyson frequently interact and joke with each other through their Twitter accounts. So this particular text meme exists in multiple overlapping assemblages and conversations.

Memes, the International, and the Harlem Shake

Combining Dawkins's original understanding of memes as units of cultural transmission that propagate through imitation, Bennett's vibrant material assemblages, Galloway's protological Internet, Protevi's affective cognition, Deleuze and Guattari's machines and assemblages, and Tarde's understanding of monads and virality, I have the necessary tools to examine memes in and of themselves, and as they generate a particular iteration of the Internet as an intersection of online and offline spacetimes. To some extent Internet memes merely participate in an already existing world, which is both a shared and variable space. While the Internet is a global space, the extent to which people can access it freely, if at all, does vary by geographic location. The variance is partially due to socioeconomic inequalities (accessing the Internet requires an interface and communications infrastructure), but there are ways that

people get around economic barriers: leap-frogging traditional communications networks by going straight to cell connectivity or using Internet cafés. The variance also stems from state censorship and control of content, although this can also be subverted to a certain degree through a variety of technological means: proxy servers, the TOR network, IP address masking, et cetera. With these variances taken into account it is still useful to think of the Internet as a shared international space. As the Internet is the native land for the type of memes I focus on here, there is an inbuilt potential for memes to operate globally. When a meme is initially emerging in a particular forum, e.g., the 4chan /b/board, it can quickly become an epidemic: spreading rapidly within that limited community and then branching out to other websites with overlapping members. Like any good virus, once the meme begins to spread quickly in these limited regions, it may then become a pandemic as it stretches first across the Internet through common vectors like Twitter, Tumblr, and Facebook and then jumping to the offline world via major media outlets like CNN. After the initial spreading of a meme it will often become endemic in certain spaces online.

But why do memes spread this way? What makes them viral or contagious in the way that a biological parasite or bacteria is? First, memes, as I have mentioned, are inherently visual online. The repetition of common forms combined with the use of compelling or emotive images allows memes to transcend language barriers. The visual nature also taps into and reinforces a shared visual reservoir of references. Much Internet culture references Western popular culture texts, but the references are legible around the world because of the wide circulation of these texts. Also, learning these visual references is often part of the acculturation process online, and specifically in the websites where these memes are generated. Memes do not limit their references to popular culture: they also play with current events. For example, when Prime Minister Netanyahu went in front of the United Nations in fall 2012 to discuss the Iranian nuclear

situation, the images of him with his ACME-style cartoon bomb poster (think Wile E. Coyote and the Road Runner), instantly became visual meme fodder (“Netanyahu’s”):



Figure 7: <http://knowyourmeme.com/memes/events/net>



Figure 8: <http://www.timesofisrael.com/pms-bomb-ex>

The issue of a possible Israeli pre-emptive strike in response to Iran enriching a certain amount of nuclear material is captured in this visual, but the image takes on a life of its own in meme-form (Gladstone). The satirical intensity of the meme, in effect, tainted the Israeli position. Depending on your perspective, the absurdity of the meme either revealed the inherent absurdity of the Israeli position, or made Israel look ridiculous unfairly. The intensive force of the meme challenges the authority of Israel as an actor in the Iran nuclear deal talks. Netanyahu was attempting to secure his discourse (that Iran is untrustworthy and dangerous), but through this meme assemblage his discursive structure was effectively canceled out or defeated for many people.

Current event-based memes get people involved and interested in political issues that they were either unaware of or completely ambivalent to previously. Netanyahu's cartoon bomb and the rapid Internet meme response made Israel's position look ridiculous, and had a lasting impact due to the inherent humor of the image. The intensity of this meme's emotional resonance is a factor in its initial impact and staying power: Netanyahu gave his speech to the UN on a Thursday and by the following day the image in Figure 8 was receiving media coverage in Israel and around the world, and the acme bomb continues to be referenced to this day. In fact, even two and a half years later, this image continues to be referenced whenever Netanyahu addresses the Iranian nuclear situation (Milne, et al). The Obama administration, long-known for its facility with memes¹³, alluded to the image in its official announcement about the new deal with Iran in spring 2015:

¹³ Most famously, the Obama administration and campaign team made extensive use of viral memes during the 2012 presidential election cycle (Yao)

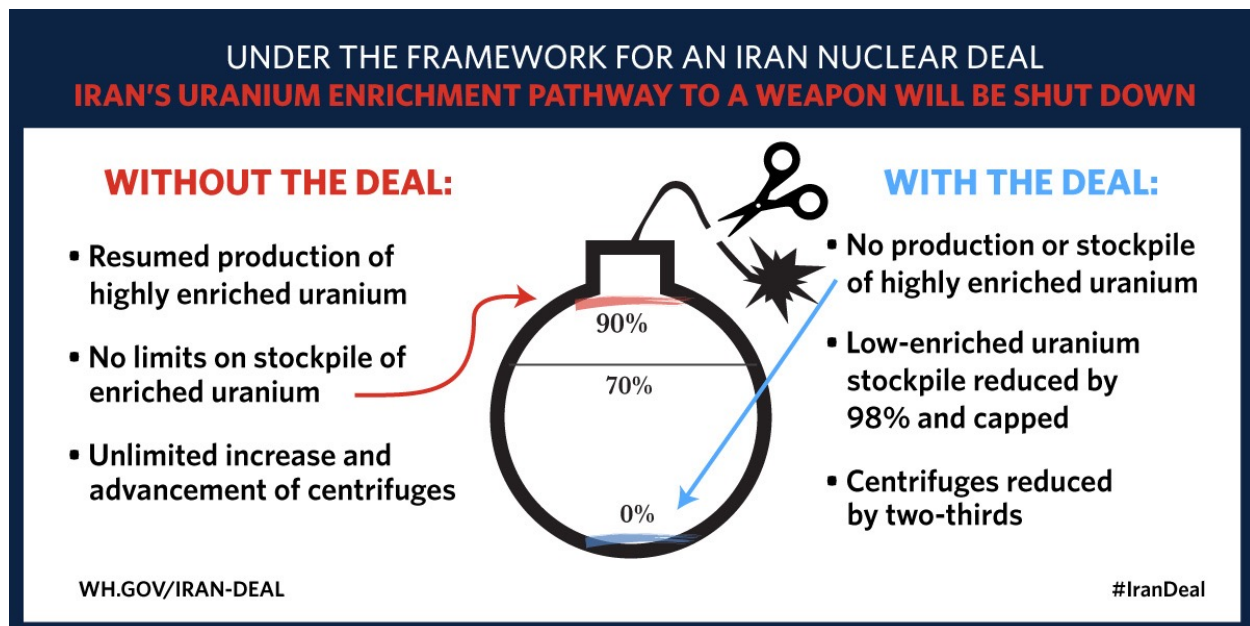


Figure 9: <https://www.whitehouse.gov/issues/foreign-policy/iran-deal>

The original bomb is clearly referenced, and it is visually countered both by the scissors cutting the lit fuse and the new blue line symbolizing Iran's inability to stockpile any highly enriched uranium ("A Framework").

The role of emotions in politics and in generating interest in political events or issues can be seen in existing literatures, like the body of literature on the ethics of care. Predominantly, existing literatures examine emotions like fear, outrage, anger, or sadness. Academics like Saara Särmä, however, are looking at the role of humor, and this is the literature that I would like to develop further. With the rise of Internet memes, humor, on its own and in alliance with other emotions, is becoming an increasingly effective driver of interest and virality. Popular memes and meme forms become widely legible as popular examples spread globally via social media. When a new iteration of a popular meme or meme form crops up, individuals already familiar with it are primed to be interested and find it humorous. This effectiveness reveals and

strengthens overlaps between online and offline spaces in which objects and assemblages have emergent and unpredictable lives and consequences.

This is not an unprecedented process. I see the process of Internet memeification as operating in a similar way to the legacy of viral photographs in the twentieth century, like the iconic “Napalm Girl” image from the Vietnam War.¹⁴ The difference comes in the way the images are manipulated, crossed with existing memes, spread, and become haunting not only in their content but also in their form. When a meme’s form can function without regard to its content then it is ripe for being co-adapted to another existing meme or to an emerging one.

The emotional aspect of the connection is another way in which memes transcend the language barrier. This aspect captures the way memes are still functional or expressive when they fail to communicate the details of an event or issue, meaning that they can continue to propagate because people still connect to them and often pass them on to others. A meme can pique your interest through humor, sadness, or outrage visually (or any combination thereof), and can then make what was an isolated issue a shared issue (or what was an isolated reference a shared reference) as you go out of your way to understand the meme. Memes can, in this way, initiate or participate in processes of questioning authority, which makes new structures of authority thinkable. Emotional content also adds to the haunting or persistent quality of many of these memes. Once the connection is made emotionally, not only is information spread, but its power can be augmented as well. Whether or not a meme makes you curious enough to search out more information about the texts and events that it is referencing—because you want to make your own version of the meme, or you want to get

¹⁴ There are instances in which contemporary memes draw on this history of iconic images. One example can be found in the Pepper Spray Cop meme as discussed in Interlude Two, in which various users inserted the Pepper Spray Cop into famous photos and paintings including the Napalm Girl photo (“Casually”).

involved with the issues it is raising—these memes shape the pool of available information and images, and can add to the response repertoire.

Through their visual nature and their ability to connect with people affectively, memes thus contribute to the increasingly shared international that can be found in online and offline spacetimes (and their overlaps). Memes, however, can also be used to mark out territorial (rather than geographical) boundaries within the international and other overlaps of online and offline spacetimes. When particular memes or meme-complexes territorialize parts of the Internet through demarcation, they also alter the entire shared space. For example, there are entire websites dedicated to cataloguing and showcasing Internet memes, like www.knowyourmeme.com. On [knowyourmeme.com](http://www.knowyourmeme.com) anyone can find information on the memes that they may encounter elsewhere, and thus become connected to the meme itself and the events and texts it references. These resources are particularly useful when trying to become part of an established community online with what can be an opaque set of endemic memes. This acculturation process follows the one Tarde laid out in which one adapts to a new society. Interestingly, meme-images and references can also be found on protest signs, which have the effect of marking the protest in which you find such signs as Internet-adjacent. Examples of such signs referencing specific LOLcats, like longcat, were especially prevalent in the Anonymous-backed protests against the Church of Scientology (Norton):



Figure 10: http://chanology-wiki.info/_media/projekt_chanology.jpg

The protest signs functioned as a territorial marker: these protests were thus seen as an extension of the online action against the Church of Scientology, and the communities in which both these protests and memes were spawned. Using memes in your icon or profile picture in a forum or on a social networking site also identifies you as part of this shared international. The meme is reproduced (thus both altered and retained) on the long sign (a long, thin horizontal sign being a somewhat odd shape for a protest sign) on paper with ink, while simultaneously extending the online and offline protestors into one another.

A more recent Internet meme is the Harlem Shake (an earworm and eyeworm if ever I have heard or seen one) (“Harlem Shake”). You can find examples of Harlem Shake videos from all over the world (along with the lamentations of those who despise them), and for the most part you either connect with them through humor or annoyance. However, Harlem Shake videos from states like Tunisia and Egypt were met with state-led crackdowns and the possibility of violence and arrests (el Amrani). The response to the videos produced in these Arab Spring

countries renewed the focus on the regimes that came out of the 2010 Arab Spring Protests.

The early examples from Tunisia seem to be more typical examples motivated initially by humor, but the examples from Egypt and the later examples from Tunisia were more explicitly motivated by politics (Hogan). In both Egypt and Tunisia the initial authoritarian responses of the Tunisian and Egyptian governments spawned not only more videos, but also in-person protests. In Cairo there was a “rally by about 400 activist dancers...outside the offices of President Mohamed Morsi’s Muslim Brotherhood, [which] was streamed live to the Web by activists” (Mackey).



Figure 11: GIF produced from a YouTube video

In Tunis, “students perform[ed] the Harlem Shake outside the education ministry” after the “education minister, Abdellatif Abid, announced an investigation of the principal of the school for allowing an ‘indecent’ video to be filmed on the premises” (Omri).



Figure 12: (Omri)

Juan Cole noted the domestic implications of the Harlem Shake and responses it provoked in Tunisia:

A conflict between religious-right puritanism and Tunisia's secular youth culture is an on-going feature of the post-revolutionary process. While a crackdown on the Harlem Shake is not earthshaking in itself, it is significant if it is part of the same yearning for social control and imposed conservatism that animated the Salafis to attack an embassy and assassinate a secular politician. In essence, unless the Harlem Shake wins, Tunisia loses. (Cole n.pag.)

The struggle between the dancers and the governments is over what system of authority should be in place. The Harlem Shake videos created as part of these in-person protests directly challenge the authority of those in power, and, like Netanyahu's acme bomb, discursively taints those regimes through the absurdity of the meme.

As with other memes, though, the intent of the creators is less important than the impact of the meme, of which the students in Tunisia have now been reminded (Gubash). In the Harlem Shake case it was the combination of the Harlem Shake-themed videos and protests with the authoritarian responses of government officials that people responded to. The contrast between the humor and irreverence of the Harlem Shake and the severity of the governmental response allowed the memetic videos and protests to act as a satire that was legible to a very broad audience (basically anyone familiar with the Harlem Shake). The Harlem Shake videos produced in Egypt and Tunisia made the post-Arab Spring struggles in these countries visible and engaging before the body and arrest counts again began to mount. The Harlem Shake craze came along at the right time to be adapted first for humor in Tunisia and then for politics in both Tunisia and Egypt. The later videos produced in Egypt and Tunisia (often filmed live during

in-person protests) brought the meme form and content into the offline world. The conflation of the YouTube meme and overt political protests reinforced the meme's satirical and political affectivity—and thus multiplied its political impact.

Although this craze came and went quickly, its role in turning eyes back to these countries became part of its legacy. The national boundaries, and the power struggles that go on inside of them, did not disrupt the spread of the Harlem Shake meme, but the meme was able to bring global attention to the continuing protests within those national borders. The meme destabilized the discursive stranglehold of the nation-state, of the distinction between domestic and international spheres. Importantly, it never mattered that the dance associated with the meme was not the actual Harlem Shake; like so many of the memes I discussed in this chapter, the cultural origins of the content are less meaningful and impactful than the form. The legacy of the Harlem Shake meme not only exemplifies the part that Internet memes play in shaping and participating in a particular international, but also serves as a reminder of key attributes of this international that is situated in the overlaps of online and offline spacetimes: its ambivalence to geographic boundaries, its focus on the visual, its ability to draw on and bring attention to popular culture and current events, and its reliance on emotion as a connector. Through emotions, nonhuman digital objects like memes can thus play a role in international and domestic politics, both as direct actors in the political event and as attention-attracting objects.

Interlude 3. History of the #: From *Libra Pundo* to Hashtag

hashtag *n.* (on social media websites and applications) a word or phrase preceded by a hash and used to identify messages relating to a specific topic; (also) the hash symbol itself, when used in this way.

O.E.D.

After the Arab Spring, the world turned its attention away from the region, unaware of the nature of the post-revolt regimes. Groups of students in Tunisia filmed and uploaded their own renditions of the Harlem Shake, and were met with an extreme response from the Minister of Education: threats of expulsion for students and punishments for staff. Watching a Harlem Shake video brings various spaces into conjunction and erodes the order of the despot and the nation state. These incidents were covered by major media outlets, but also discussed in social media and on websites that focus on cataloguing and producing new iterations of Internet memes. From those already engaged all the way to people trying to find the funniest version of the Harlem Shake, many eyes turned to Tunisia. The Harlem Shake meme, and these particular iterations of it, can thus be seen as a weaver: “The image of the weaver arises at this point: to link, to tie, to open bridges, pathways, wells, or relays among radically different spaces; to say (*dire*) what takes place between them; to inter-dict (*inter-dire*). The category of between is fundamental in topology and for our purposes here: to interdict in the rupture and cracks between varieties completely enclosed upon themselves” (Serres 45). The hashtag (#) can be seen as an interwoven image:



Figure 1: <http://giphy.com/gifs/alboardman-design-motion-hashtag-IXiRLZwBOXVAoEL7i>

The hashtag can also be seen as a weaver in its own right: bringing multiple assemblages together into conjunction. The hashtag can act as a “bridge” or a “well,” and thus produce a cross-roads between spacetimes that were previously disconnected. I will discuss this process in more detail in Chapter 4 as I analyze the case of #BlackLivesMatter, but first I will examine the history of this glyph to understand how its connective nature emerged.

What do you call #? Depending on its context you might think of this symbol as a hashtag, hash mark, number sign, or pound sign. Interestingly, the last of these, the pound sign, is the one that gives you a clue to its origin. The story begins with the “Roman term *libra pundo*, ‘pound weight’” which people began abbreviating to “lb” in the fourteenth century (Houston). During this period “it was common to add a horizontal bar to abbreviations, known as a tittle, to show that the two letters were connected” (Ferro). Voelkel, a curator of rare books at the Chemical Heritage Foundation, sourced and published the images which most online sources use to recount this history in a blog post, “Pounds, Ampersands, and Skulls”:



Figure 2: <http://www.chemheritage.org/discover/media/periodic-tabloid/archive/2010-08-31-pounds-ampersands-and-skulls.aspx>

Voelkel explains that this system of abbreviation was developed in the “manuscript tradition of the Middle Ages” and it was then incorporated into “early typefaces.” As you can see in the top right image in Figure 2 typefaces maintained a very formal, well-defined version of the glyph (Voelkel). Over time “it was the rushed pens of scribes that eventually produced the symbol’s modern form...the barred ‘lb’ mutated into the abstract #” (Houston). After the glyph evolved in written form the abstract form worked its way into printed form. The top left image in Figure 2 shows an example in Isaac Newton’s hand that many scholars (like Voelkel) see as a missing link between the highly formal early version and the abstracted version we know today:

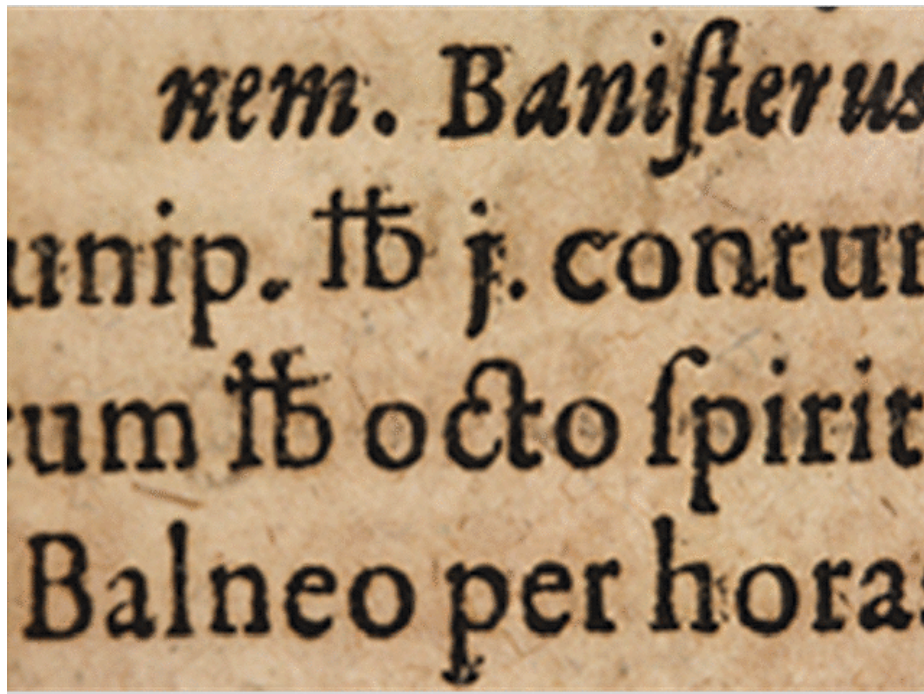


Figure 3: I produced this GIF from the images included in the 99% Invisible Podcast write-up. If you take a moment to mimic Newton's form (which takes the time-saving form of medieval scribes even further by not requiring you to lift your pen at all) you get both a sensation of speed, and also a feeling of connection. The tittle or bar that scribes used in the Middle Ages and that early typesetters recreated in their glyph makes the connection of the letters clear, but maintains the distinct nature of the three parts. In Newton's glyph, and in particular in writing Newton's glyph, the three parts are woven together. Close examination of Newton's glyph out of its context leaves the impression of two loops stitched together by an arrow, or perhaps a cross stitch. The pound sign was then fully abstracted to two sets of parallel lines laid at a ninety degree angle recreating the warp and weft of woven cloth, which further underscores the weaving motion (and woven appearance) of Newton's version of the glyph.

99% Invisible, a popular design podcast, traced the history of this glyph in a podcast, "Octothorpe," in 2014. In the podcast the narrator explains that in the ensuing centuries "the

symbol's meaning started to bifurcate—it was used for the unit pound, and it also started to be used as a number sign” (99%). This bifurcation makes sense as any symbol used in conjunction with a unit of measure would be connected with numbers. The narrator went on to explain that use of the symbol, in either meaning, was common enough for the glyph to be incorporated into “typewriter keyboards, which helped it survive” (99%). When Bell Labs were developing the new key pads for telephones in the early 1960s they chose “the * and #” because they were already “available on all standard typewriter keyboards” (Carlsen). As more complex telephone “switching systems” were developed, Bell Labs integrated features that could be activated using the # (Carlsen). Internally, Bell Labs came up with the term octothorpe for their iteration of the pound sign, but this term was only coined after they incorporated it into the key pad (Carlsen). There were other options beside * and #, of course, even with the requirement that any symbol included on the telephone should already be part of standard keyboards, and so this particular phase in the evolution of the hashtag had more elements of chance than previous phases.

Between its continued place on standard keyboards and developing role in complex telephone systems the hashtag was particularly well-placed to be taken up by early Internet users. For example, users of “Internet Relay Chat (IRC) used the pound sign to represent chat rooms, or conversation ‘channels’” (99%). IRC is a somewhat obscure online communication forum, which kept this use of the pound sign, as a marker of conversations, obscure as well. This obscurity was challenged in 2007 when an “early Twitter user named Chris Messina” suggested marking tweets about an upcoming event with an associated hashtag (99%). The system did not take off initially, because most people were not used to seeing the symbol in this context, and those that were familiar with it worried that its obscurity would be off-putting to people. The 99% invisible podcast recounted how the #sandiegofire in October 2007 made the potential of the hashtag as “a way to create clear, super-specific search term[s]” obvious (99%).

The hashtag is ideal for marking conversations because it is legible to both humans (especially if you follow the convention of capitalizing the first letter of each word) and computers. This legibility allows a single phrase (e.g., #SanDiegoFire) to mark relevant tweets to users as they scroll through their Twitter feeds and to computers, which makes it easy to locate marked tweets through Twitter's search function or using a search engine like Google. Twitter subsequently adopted this functionality, and altered their code to make each hashtag into a clickable hyperlink which can call up recent and popular tweets including the hashtag in question. In the intervening years hashtags (as markers and as hyperlinks) have been incorporated into other social media platforms and websites: Tumblr, Instagram, and, more recently, Facebook. As the use of hashtag-as-conversation-marker has become one of the default meanings of the glyph, #, we have seen it used in this way across many media.

In the case of #BringBackOurGirls the history of this specific has been well traced by journalists, among them Miranda Neubauer, and academics like Caitlin Hamilton.

#BringBackOurGirls emerged as the go to hashtag amidst a cloud of options, first created and popularized in Nigeria. It then spread to the United States via the concerted effort of activists (Neubauer). Neubauer uses #BringBackOurGirls to demonstrate that "the power of a hashtag can be in the much more complex interplay between online and offline actions that reinforce and intensify each other." This hashtag has since been used to continue the discussion around both the specific Boko Haram attack that precipitated the creation of the hashtag, and to connect that discussion to subsequent attacks and the ongoing situation with Boko Haram. As many scholars and journalists have pointed out, however, hashtags (and other viral pieces of information) are open for co-optation. Tufekci explains there are "trending topic wars" (Tufekci, "Big Questions" 4), which demonstrate the instability of the meaning of a hashtag. In these *wars* opposing groups use the same hashtag in opposing ways. These wars are particularly effective on Twitter

where hashtags often crop up in the top ten trending topics that Twitter displays at the top of each user's Twitter feed. In the case of #BringBackOurGirls, the most visible fight over its meaning came with the associated images. Many prominent people took pictures of themselves holding simple signs of the hashtag to demonstrate their support for the movement to rescue the girls who were kidnapped by Boko Haram. However, there were other groups who wanted to contest this message, and they did so in two ways. First, there were people who photoshopped the initial images by replacing the original messages with ones that highlighted the hypocrisy of people, especially Westerners, paying lip service to rescuing the girls while supporting systems that allowed Boko Haram to exist (or encouraged its existence) (Hamilton). Second, other groups contested the meaning of #BringBackOurGirls by playing with the hashtag itself, and posting pictures of themselves holding signs with related hashtags (e.g., #BringBackYourDrones) but marked in text with the original hashtag (#BringBackOurGirls) and thus marking their Tweets (or posts) as part of the #BringBackOurGirls conversation. Specifically, #BringBackYourDrones was used to mark the hypocrisy of people like Michelle Obama expressing concern over the girls abducted by Boko Haram while remaining silent about the many people killed by American drones on a daily basis:



Figure 4: (McCoy)

Terrence McCoy's piece in *The Washington Post* recounts a series of such images that contest the simple meaning of #BringBackOurGirls by bringing it into contact with ongoing discussions surrounding the United States' drone program.

Chapter 4. #Multiplicity—Complexity Theory, Spacetimes, and Overlaps

No, the real is not cut up into regular patterns, it is sporadic, spaces and times with straits and passes....Therefore I assume there are fluctuating tatters; I am looking for the passage among these complicated cuttings. (Serres, xiii)

Why should there be a dichotomy between texts, between ones that operate and the ones that are operated upon? (Serres, 38)

This chapter uses the work of theorists who incorporate complexity theory, Ted Chiang's novella *Lifecycle of Software Objects*, and William Gibson's novel *The Peripheral* to explore how diversities in time and space in the interactions of online and offline worlds along with their emergent nonhuman actors make people aware of events and issues they would be unaware of or apathetic to otherwise. Overlaps of online and offline spacetimes create global digital communities. These emergent communities bring attention to issues that traditional, offline attention-directing mechanisms either miss or purposefully ignore. Understanding these overlaps and interactions will allow people, especially those who are generally disenfranchised and marginalized, to generate attention and action on issues of social inequality and justice. I have already discussed this process in the case of the Harlem Shake videos produced in Tunisia and Egypt after the Arab Spring. These videos, which were a mix of intentional and unintentional political protest, generated attention towards the authoritarian nature of the post-revolt regimes in the responses they provoked. In this chapter I will examine the interweaving heterotopic assemblage of the Internet through the ongoing protests in response to police violence in the United States, which have reached a broad audience through the combination of in-person protests and spreading information online via social media. The use of #BlackLivesMatter, for example, can be found both on protest signs and social media platforms like Twitter.

In this chapter I use philosophical approaches to complexity theory to think through the ways in which intersecting spacetimes in these overlaps work first in fictional texts and then in the case of #BlackLivesMatter. William Connolly uses the term “force field” for what I am calling spacetime:

Many force fields, on this interpretation, are susceptible *both* to impingement from others and to variable degrees of interpenetration with them. That combination is part of what makes their relations so complex. An example of the latter is the infusion of new rock into old, dense rock formations under conditions of intense pressure and high temperature. Another is the diverse ways microbes enter into human tissue, helping to compose our tendencies and moods. Most fields are also vulnerable to periodic bouts of radical disequilibrium, partly because of unavoidable intersections with heterogeneous fields and partly because they themselves contain energetic excesses, remainders, noise, and incipiences that, particularly when triggered by a new event, can promote collapse or inspire a new bout of self-organization. (27)

While a single assemblage can include multiple, interpenetrating force fields, in this chapter I want to focus on a larger scale and consider the ways in which the offline and online assemblages act as interacting and intersecting force fields or spacetimes. These points of intersection or conjunction constitute heterotopic overlaps. These overlaps can take many shapes and faces: a person or character, a bridge or window (like the computer or cellphone screen you are reading this on), or a hashtag. The overlaps are points of contact and passage that are potentially disruptive in that they destroy the consistency and discursive structures of any single, dominant spacetime. In some cases that disruption is overcome by existing systems and assemblages, but “in such a state, certain fluctuations, instead of regressing, may be

amplified and invade the entire system, compelling it to evolve toward a new regime that may be qualitatively quite different from the stationary states corresponding to minimum entropy production” (Prigogine and Stengers 140-141). The potential for amplification or resonance is what makes the study of these overlaps politically necessary. because in these cases challenges to existing structures of authority and accountability can produce change rather than a regression to the norm.

Developing a theory of spacetimes through Complexity Theory and Science Fiction

Science Fiction (SF) is always really about the present, and in line with SF scholars like Darko Suvin I subscribe to the idea that SF often functions through estrangement, which then creates space or distance through which we can examine our own context. One key aspect of this estrangement is the way in which SF often extrapolates from the present through exaggeration of current trends, ideas, and technologies. These characteristics make SF texts potent vehicles for analysis and critique. In the case of *The Peripheral*, I see Gibson constructing a vision of the world that utilizes “all areas of the encyclopedia” (29) in a way that mirrors Serres’s discussion of various literary works, such as his treatment of Michelet’s *The Soup*. As my second epigraph implies, Serres, like Haraway, believes that the distinction we tend to make between fiction and non-fiction, or perhaps more accurately between fiction and philosophy, is meaningless (and potentially disastrous) (38). In writing texts off as merely fiction, we miss the insights they contain and ignore their agency.

In *The Peripheral* Gibson explores the experience of being plunged into multiple spacetimes, interacting with digital-native/nonhuman actors, dealing with an even more extreme version of the neoliberal class dynamic, and navigating the consequences of multiple spacetimes interacting with each other. Gibson’s plot spans two distinct, but intertwined

spacetimes—the first is a facsimile of our near future, and the second is what would have been our future (about 70 years later). These spacetimes are initially portrayed as spaces of compensation—people in the future think of the past with nostalgia, and people in the present think of the future as a techno-magical utopia. However, as the story unfolds the reader learns that both spacetimes are spaces of illusion in the Foucauldian sense that a heterotopia can reveal all spaces as equally illusory (Foucault 27)—the present/near future is a spacetime on the brink of apocalypse, and the future is ruled by an oligarchic class. Neither space is ideal. The cast of characters is large, but the key characters for my purposes fall into two groups. In the first group are characters from the present or near future: Flynne Fisher, a typical Gibsonian female protagonist in line with Molly Millions (who featured in “Johnny Mnemonic,” *Neuromancer*, and *Mona Lisa Overdrive*) and Cayce Pollard (from *Pattern Recognition*); and her brother Burton Fisher, an injured veteran. The second group consists of those in the future spacetime: Wilf Netherton, a PR guy; Ash, a technologist; Lev, the rich Russian who initiates the “stub,” and Lowbeer, an investigator/algorithm-backed power broker. In the future people are able to reach into the past via a mysterious server and create a “stub,” which, after initial contact, becomes an offshoot of history, an alternate timeline:

“Can’t you,” asked Netherton, “just jump forward and see what happens? Look in on them a year later, then correct for that”

“No,” said Ash. “That’s time travel. This is real. When we sent our first e-mail to their Panama, we entered into a fixed ratio of duration with their continuum: one to one. A given interval in the stub is the same interval here, from first instant of contact. We can no more know their future than we know our own, except to assume that it ultimately isn’t going to be history as we know it. And,

no, we don't know why. It's simply the way the server works, as far as we know." (92)

The creation of the stub puts the two spacetimes in juxtaposition or superimposition. This is treated like a game by rich and influential people in the future. The game genre appears to be a cross between an open world role playing game (RPG) and a world-building game like the Civilization series. In the case of the stub in which the plot plays out, there are two major parties from the future fighting for control over what happens in the stub. The reader experiences the intertwining of the future spacetime and the stub spacetime through the experience of the characters as they alternately navigate their own spacetime in their own bodies and the other spacetime through various peripherals (the crossing over occurs in both directions). Along the way there are continuous reminders of the way the spacetimes are intertwined through the bodies and minds of the characters, but also through larger assemblages of economy and power:

Coldiron and Matryoshka, as your people are calling it, are racing for ownership of your world. Competing tides of sub second financial events. We are not winning. We are not losing, by that much, but we are not winning. Lev is employing a brilliant but makeshift apparatus on Coldiron's behalf. Matryoshka, which exists in order to kill you, and for no other reason, appears to be employing some more powerful state financial apparatus, here. I need to stop that, in order to enable Coldiron's dominance, which may then enable the prevention of Gonzales's assassination. But the politics here are such that I'm unable to do that without first having proof, or some reasonable facsimile thereof, of who murdered Aelita. I can't begin to explain how power works, here, but someone powerful must have an interest in Matryoshka. Invariably, they will have stepped

on someone else's toes, or stand to. I can leverage that, offer that party a fulcrum with which to crush them. But in order for any of that to happen, you and Netherton must succeed at Daedra's event. (430)

In this passage, Lowbeer (a very powerful character in the future spacetime) is explaining to Flynne some of the ways in which the political and economic assemblages of the two spacetimes are intertwined. By the end of the novel the relation between the two spacetimes shifts—initially those in the future are the “bosses” with all of the power, but by the end of the novel their heterotopic relation or function shifts to a more cooperative one. Gibson's portrayal of a neoliberal world in which powerful individuals, corporations, and state actors work together in shadowy conspiracies demonstrates how *The Peripheral* examines the present through exaggeration. This portrayal also shows one way in which Gibson's spin on the interrelations of online and offline worlds has become more nuanced since the *Sprawl Trilogy* of the mid-1980's, which relied on a simple post-state dystopia.

I will start with space, but it will become clear that space and time in their multiplicities are interrelated. I find Serres' approach to space particularly compelling in this project because of the way he captures the sensations of the body being plunged into the multiplicity. He suggests that this co-presence of a multiplicity of spaces increases the range of sensation:

My body (I cannot help it) is not plunged into a single, specified space. It works in Euclidean space, but it only works there. It sees in a projective space; it touches, caresses, and feels in a topological space; it suffers in another; hears and communicates in a third; and so forth, as far as one wishes to go....My body, therefore, is not plunged into a single space, but into the difficult intersection of this numerous family, into the set of connections and junctions to be established between these varieties. This is not simply a given or is not *always already* there,

as the saying goes. This intersection, these junctions, always need to be constructed....My body lives in as many spaces as the society, the group, or the collectivity have formed: the Euclidean house, the street and its network, the open and closed garden, the church or the enclosed spaces of the sacred, the school and its spatial varieties containing fixed points, and the complex assemble of flow-charts, those of language, of the factory, of the family, of the political party, and so forth. (Serres 44-45)

Serres, like Foucault, points to society as the creative agent—"my body lives in as many spaces as the society...have formed"—but Serres is clearly open to a broader understanding of society. Serres, along with Connolly and Prigogine and Stengers, is more open to the inclusion of nonhumans in the organizing society, which brings to mind the society of Gabriel de Tarde. So the "society, the group, or the collectivity" in question can be an assemblage of humans and nonhumans. The multiplicity of spacetimes and the idea that the body experiences this multiplicity viscerally is a point of emphasis for me. In his earlier works, William Gibson exhibited a strong mind/body dualism as his characters sought to "leav[e] the body behind," to leave their "flash cage[s]" behind (Franck 240), but in *The Peripheral* Gibson uses the body and sensation to great effect.

In the novel, the experience of navigating a multiplicity of spacetimes is first played out in a way that is already very familiar to both the reader and the characters. Flynn takes a shift beta-testing a game for her brother (who has to miss his scheduled work time to go to a nearby town and confront the novel's equivalent of the Westboro Baptist Church). Her experience of playing the game is immersive in the way that many video games are today, but Flynn is very aware of her co-presence in both the game and her normal spacetime (she has work to do, but is also checking in on her friends and family, and concerned about meeting her basic needs for

food and using the restroom). The peripherals are part human/part machine bodies that you can connect to, and when connected you live in that body and are able to control it and experience the world through it, while your actual body is in a sleep state elsewhere (in both the spatial and temporal sense, but your body continues to have needs in the same way Flynn experienced when she was just playing the game). The characters from the present/near-future have to return to their bodies to actually sleep and eat. Franck, in her 1995 lamentation of Gibson's tendency to have characters escaping "meat cages" (240), explains that "There is a body I personally do not wish to leave behind. That is the wet one, the one that needs to eat, sleep, eliminate, the one that is frail, can become diseased, and will die" (242). I am sympathetic to this concern. I reject the idea of mind/body dualism, and instead subscribe to the notion of embedded cognition (as seen in the work of John Protevi, which I discuss in Chapter Three) and the ecological or new materialist approach which sees the human as embedded in assemblages at many scales (as I discuss in previous chapters and later in this chapter). In *The Peripheral*, Gibson's characters experience versions of these visceral traits in both biological and peripheral bodies. When in a peripheral in the future, the present-day characters like Flynn experience many of these visceral sensations—she holds Netherton's hand and is comforted by it, and she goes into shock when her friend's peripheral explodes next to her. Flynn is also continuously aware of the danger to her biological body in the present; eventually she becomes possessive of her future peripheral body as well (and thus gets upset at the idea of her peripheral being destroyed or tainted). This newer version of Gibson makes room for concepts like embodied or extended cognition in ways that the earlier Gibson did not. This version also plainly eliminates any singularity or "uploading the brain" solutions that mind/body dualists aspire to—when Flynn is in her peripheral, she is still connected to her biological body, if her body dies then she dies.

This relationship between the characters and their peripherals also draws a very strong image of the juxtaposition of the spacetimes through the existence of each character.

Flynn's "Easy Ice" gaming persona highlights Gibson's sense of embodied cognition. Early in the novel Flynn recounts her past experience with gaming for money in a first-person shooter game called Operation Northwind. To complete her mission, and thus make the money she needed to pay for her mother's prescriptions, Flynn has to develop her Easy Ice persona. Flynn's brother Burton, a wounded Marine, helps Flynn develop Easy Ice through both medication ("wakeys") and walking her through the process of "seeing it" (48). When she manages to complete her mission (assassinating a particular person in the game) she snaps out of the Easy Ice persona, and the game, to vomit and cry (48). Later in the novel, when she experiences trauma in her present (she's involved in a gun fight in which her brother is shot) and through her peripheral in the future, she finds herself slipping into her alternate persona Easy Ice: "the thing that was wrong was that she'd gone to where she'd been that time in Operation Northwind" (370). Physical contact (e.g., handholding) helps her break out of this persona, whether she's experiencing the world in her biological body or her peripheral.

This multiplicity of spaces and times seems very much in line with the way Serres is presented in the introduction to the collection of his work *Hermes: Literature, Science, Philosophy*:

Against homogenous, metric, and ordered time, Serres opts for a concept of time that is multivectorial, complex, and distributed stochastically¹⁵—yesterday, elsewhere, now here, now there, at unpredictable times and places. This is the time of Lucretius and the time of entropy. This model carries with it the discourse

¹⁵ Randomly

of a new history, one that would be neither in a straight nor a curved line, but rather that would be aleatory and stochastic. History is ergodic: the organizing principle of its order is not primordial, but is the result of the sufficient repetition of certain effects of chance that thus produce forms of regularity. (xiv)

Thinking of time as “multivectorial, complex, and distributed stochastically” corresponds with my interpretation of the fourth principle of Foucault’s heterotopia, in which I emphasize that heterotopias involve interrelating times that cut and bleed into each other rather than distinct slices of time. This conception of interrelating times parallels Serres and Gibson: the rejection of a simple, linear understanding of history and causality. The interaction of the two spacetimes in the novel is the interaction of two self-organizing complex assemblages:

Self-organization often involves rhythmic interaction between two entities, when one or both has been disrupted. It subsides, to some degree at least, if and when a new equilibrium is established. Sometimes the process issues in a new, unplanned plateau of stability: a teleological element in a searching process that issues in a result not reducible to finalism as a preordained final purpose toward which things tend. (Connolly 8)

Both spacetimes (and the other assemblages within them, from individual characters to large-scale economic and political systems) are seeking a new “plateau of stability” and that quest involves many points of bifurcation, chance, and irreversibility: “There is an irreducible random element; the macroscopic equation cannot predict the path the system will take” (Prigogine and Stengers 162).

This conception of the body experiencing the world in various ways in this junction of multiplicity, for me, also brings to mind the collapse of many fundamental distinctions we tend to make between the human and the world or between myself and my object of study. Disrupting

such distinctions also brings Serres, and the work in this chapter, into line with the work of many new materialists like Jane Bennett:

It is no longer necessary to maintain the distinction between introspective knowledge, or 'deep' knowledge, and objective knowledge. There is only one type of knowledge and it is always linked to an observer, an observer submerged in a system or in its proximity. And this observer is structured exactly like what he observes....Nothing distinguishes me ontologically from a crystal, a plant, an animal, or the order of the world; we are drifting together toward the noise and the black depths of the universe, and our diverse systemic complexions are flowing up the entropic stream, toward the solar origin, itself adrift. (Serres 83)

Connolly expresses a similar sentiment: The world is a "mix [of] human and nonhuman forces. That is because, first, while the forces convey different capacities and degrees of self-organizational power, they are not completely different in kind as many like to pretend and, second, because human and nonhuman systems regularly infuse and impinge upon one another" (35). This can be seen in the observer effect in physics, but also in the vast body of assemblage theory that I only touched the surface of in Chapter Three.

Serres organizes his approach to the multiplicity of times chronologically based on his history and philosophy of science approach. Each conception of time is associated with the historical, scientific, and artistic context in which it emerged, which echoes the work of Helgerson as discussed in the Introduction. Serres describes "three types of systems: the first, logics-mathematical, is independent of time; the second, mechanical, is linked to reversible time; the third, thermodynamic, is linked to irreversible time" (72). His essay on Turner traces the shift between the second and third systems: "From Garrard to Turner, the path is very simple. It is the same path that runs from Lagrange to Carnot, from simple machines to steam

engines, from mechanics to thermodynamics—by way of the Industrial Revolution” (56). He explains, however, that these times also co-exist, and so, while we are living in primarily thermodynamic time, drifting toward the heat death of the universe, within that drift there are islands of the other sorts of time:

Now, and here is the crux of the matter, all times converge in this temporary knot: the drift of entropy or the irreversible thermal flow, wear and aging, the exhaustion of initial redundancy, time which turns back on feedback rings or the quasi-stability of eddies, the conservative invariance of genetic nuclei, the permanence of form, the erratic blinking of aleatory mutations, the implacable filtering out of all non-viable elements, the local flow upstream towards negentropic islands—refuse, recycling, memory, increase in complexities. (Serres 75)

Although Gibson’s novel is useful in considering how linear causality is disrupted through the interaction of multiple spacetimes, he does not allow time much freedom of play—people in one point in time interact with people at another point of time, but once that contact is initiated (once a stub is created), time flows at the same rate and direction in both spacetimes. Ted Chiang’s novella, on the other hand, highlights the interplay of multiple rates of time across spacetimes.

In *The Lifecycle of Software Objects*, Ted Chiang tells the story of Ana a primatologist turned zookeeper turned digient trainer, Derek a computer animator, the company they both work for (Blue Gamma), and the digients (“digital organisms” [n.pag.]¹⁶) that they develop. The digients form the core of an assemblage that spans the analog world and fictional digital worlds

¹⁶ I ended up using a version of this novella published online by Subterranean Press Magazine (SPM) rather than the ebook version I used in earlier drafts. Neither version has page numbers, but the SPM version is freely and legally accessible online.

like Data Earth and other platforms, and both the digients and people (and eventually other actors as well). This assemblage is the community around which the plot unfolds. When Ana is first brought into Blue Gamma for a job opportunity, her friend Robyn describes the development of the digients. Blue Gamma “hired a couple of PhDs after seeing their conference presentation last year. Now we’ve got a genomic engine that we call Neuroblast, and it supports more cognitive development than anything else currently out there” (n.pag.). Robyn explains that the plan is to basically make sophisticated “pets,” “All the fun of monkeys, with none of the poop-throwing” (n.pag.). Like babies, digients are designed to learn from scratch through experience, but Blue Gamma does “run them in a hothouse” in the first stage of their learning (n.pag.). A hothouse is a digital, no-human-involvement environment, in which software is allowed to run and evolve on its own at a much higher processing rate and thus in a different flow of time.

After that first stage, “When they’re ready to learn language and social interaction, we switch them to running in real time” (n.pag.). The switch is necessary because human trainers get involved at this stage. The digients are designed to draw people in because human interaction is necessary for this type of AI software to develop. Derek designed all of the digients’ appearances. When we first meet Derek we are told that he “subscribes to Blue Gamma’s philosophy of Artificial Intelligence (AI) design: experience is the best teacher, so rather than try to program an AI with what you want it to know, sell ones capable of learning and have your customers teach them” (n.pag.). He has to make them appealing for the consumers who they hope will first buy the digients and then also stay engrossed in them. This balancing act, between adorably appealing and also having an appearance that can be taken seriously, sets up the entire dynamic of the community assemblage that emerges, and foreshadows a number of the disruptions to that community. From the beginning the novella alludes to the ways in which this community will mirror familiar relationships like parent/child and teacher/student,

but with software objects rather than children and young adults. I would argue that the need for digients to be taken seriously moves the relations and the community beyond the traditional pet/owner model into relationships that we normally reserve for humans. This evolution beyond treating the digients as *mere* pets is in line with Haraway's work on companion species, in which she takes seriously the agency of animals and the horizontal nature of the relationship between humans and companion species.

Ana is brought in both to train and also to help in the accelerated evolution process of the digients that is required to create a product (the "release candidates") that will be ready to ship to consumers, and be tested in advance to some extent (n.pag.). Blue Gamma does not have the time, ability, or money to develop digients to their full extent before releasing the product to the public, partially because it is just a start-up, but also because of the nature of digients: they are AIs designed to develop through experience. It is a nature versus nurture situation: even if all the digients had exactly the same coding (which they do not), the experiences they have with their owners and interacting with others in Data Earth will affect their development. Blue Gamma appears to have succeeded right away with their "perfect recipe" for cute but serious AI pets (n.pag.). The community quickly broadens from the original "mascot" digients and their trainers and beta testers employed by Blue Gamma, to include "a hundred thousand customers" and their digients in the first year alone (n.pag.).

Just a few days before the big product launch, Ana and other Blue Gamma employees hear/see one of the release candidate digients curse, which is unacceptable to the company. After determining how and when the digient was exposed to cursing, they have to figure out how to *fix* the digients and try to prevent future exposures from *tainting* the digients' AI:

"Okay. Roll them back three days and pick up from there." "All of them?" says

Ana. "Not just Lolly?" "We can't take the chance; roll them all back. And I want a

key word flagger running on every training session from now on. The next time any of you curses, roll all of them back to the last checkpoint.” So the digients lose three days of experience. Including the first time they rolled down a hill.
(n.p.)

It seems like all of the options for dealing with disruptions in the digients are violent or upsetting. Here, they decide to “roll them all back,” which is like returning to your last saved point in a video game when you die. As the narrator points out, though, the digients also figured out how to “roll down a hill” in the last three days, and so good experiences will be erased along with the *bad* experience of learning a curse word. Another way that the people involved deal with disruptions to the digients is to “suspend” them, which basically means they pause the piece of software that is the digient. This does not sound violent on the surface, but it upsets the digients. After Jax realizes that one of his digient friends has been suspended and restored, he confronts Ana: Jax says “I not want be suspended. Not want miss month” because his friend Tibo was “sad missed month” (n.pag.). The violence in both of these options, rolling-back or suspending a digient, are violent because of the time disruption—they both imply a type of time theft. Manipulating the time of the digients does violence also to the spacetime in which both digients and humans supposedly live.

The community’s dependence on Data Earth invites the final set of disruptions. The world is moving on from Data Earth, and so like Blue Gamma, the company that owns Data Earth is facing a diminishing consumer pool. With fewer and fewer people on Data Earth the available community for the digients is shrinking. Digients like Jax had started to make friends with other humans and beings on Data Earth based on other interests, like break dancing, but these people and software objects moved to other platforms. So to maintain themselves as a community and to allow the digients to continue to grow up, they needed to find a way to port

the Blue Gamma digient software to one of the newer platforms. Every option involves a sacrifice, and Derek is the one who ends up making that sacrifice (n.pag.). The underlying code of the digients is ported to a new platform, which gives the community an opportunity to continue and the digients the opportunity to grow up. One of the ways that the digients might grow up is to establish self-hood and independence from their owners through establishing corporate personhood (Chiang n.pag.). Establishing self-hood would allow the digients access to individual rights. In the closing pages Ana looks forward to their version of the coming “virtual diaspora” (Boellstorff 197), when Jax will be reunited with his dancing friends and the other digients and owners. Ana’s hope is that she will be able to teach Jax how to live a real life, and that the world will evolve to understand Jax as an independent being which would be yet another evolution of the community presented in this book (n.pag.). She sees Jax as a member of multiple overlapping communities and “subcultures,” and hopes that digients will, as independent beings, be a “community with enough money and skills to port itself to new platforms when the need arises” (n.pag.), and thus avoid the community’s previous slow almost-death in Data Earth.

What I gain from Serres, Chiang, and Gibson is a visceral account of experiencing the multiplicity of spacetime in textual form. I want to use this visceral understanding of being plunged into the multiplicity to consider the political work that I see being done in my primary case, the use of the phrase and hashtag Black Lives Matter, but will also reference back to Chapter Three’s Harlem Shake case. First, however, I need to examine how multiple spacetimes impinge on and communicate with each other in more detail. To this end I introduce the concept of the connector from Deleuze and Guattari’s work on Kafka, which finds parallels in Serres work on bridges, wells, and intersections.

Connectors, Bridges, Wells, and the Visceral Multiplicity of Spacetimes

In the last two chapters I focused on heterotopias and assemblages. Both of these concepts are important in my reconceptualization of the online/offline relation because they challenge, in material ways, the distinction between and separation of online and offline spacetimes. The overlaps between or among digital and analog realms should bring to mind fuzzy assemblages, with heterotopias emerging within their interactions, rather than discrete, mappable territories. In the language of Deleuze and Guattari, one could say that between these assemblages there are connectors:

Certain series are composed of special terms. These terms are distributed through the ordinary series, at the end of one series or at the beginning of another, and so mark the manner in which they link, transform, or proliferate—the manner in which a segment adds on to another or is born out of another. These special series are thus composed of remarkable terms that play the role of connectors, since in each case they augment the connections of desire in the field of immanence. (“Kafka” 63)

For Deleuze and Guattari, in my interpretation, series is a term that is fairly synonymous with assemblage. So, connectors act as links between assemblages, or deterritorializing machines that either open one assemblage to another or initiate a new assemblage. In Kafka’s work these connectors are often either female characters or surprising architectural linkages discovered by female characters (or both): “It is almost always a woman who finds the service door, that is, who reveals the contiguity of that which one had thought to be faraway and who restores or installs the power of the continuous” (Deleuze and Guattari 64). Deleuze and Guattari go on to explain that the “power of the contiguous” is established (and re-established) by connectors through seemingly discontinuous or distant elements:

And, in fact, if it is true that each block-segment has an opening or a door onto the line of the hallway—one that is usually quite far from the door or the opening of the following block—it is also true that all the blocks have back doors that are contiguous. This is the most striking topography in Kafka’s work, and it isn’t only a ‘mental’ topography; two diametrically opposed points bizarrely reveal themselves to be in contact. (“Kafka” 73)

They take special pains to note that this is not merely a “mental” trick, but rather it is a material, visceral connection.

Serres uses the language of the crossroad, the intersection, and the weaver to approach a meaning similar to Deleuze and Guattari’s connector (45). My first epigraph for this chapter comes from the introduction to a collection of Serres’s essays. In this quote Harari and Bell capture Serres’ approach to seemingly discontinuous multiplicities: like Deleuze and Guattari, Serres sees that even the most distant or disparate elements are potentially contiguous. Although the straits and passes, connectors, or cross-roads can take many forms, “the formal invariant is something like a transport, a wandering, a journey across separated spatial varieties” (Serres 43).

These connectors act as conjunctions among two or more assemblages, which either initiate heterotopic overlaps or allow such overlaps to emerge. To understand what these connectors are and how they work, examples are necessary. These connectors take many forms and enact a variety of functions. One of the primary functions of such connectors is communication. Communication between humans, even humans in disparate spacetimes, is relatively easy to imagine, but getting a handle on communication between humans and nonhumans and between nonhumans and nonhumans is much more complicated. In their

discussion of chemical clocks, Prigogine and Stengers present diffusion as a model of interaction and communication in far from equilibrium systems:

However, this is *not* what happens with a chemical clock; here the system is all blue, then it abruptly changes its color to red, then again to blue. Because all these changes occur at *regular* time intervals, we have a coherent process....To change color at once, molecules must have a way to “communicate.” The system has to act as a whole. We will return repeatedly to this key word, communicate, which is of obvious importance in so many fields, from chemistry to neurophysiology. Dissipative structures introduce probably one of the simplest physical mechanisms for communication. (148)

Prigogine and Stengers are pointing out one way in which the molecules within an assemblage (the chemical clock) communicate with each other (flipping from red to blue in a “coherent process”), but if we think about the same example from a different scale, this model also demonstrates communication across and between assemblages: each molecule is in itself an assemblage of atoms, and in some way these atoms are reaching out to and interacting with the atoms and other internal machines of the neighboring molecule assemblages.

I have already discussed the way in which the characters in *The Peripheral* act as bridges—characters from both spacetimes are able to move into the other spacetime and experience it through various peripherals (from wheelie boys to full-on body equivalents). In *Lifecycle*, the human characters interact with the digients primarily through avatars, and thus they connect the offline to the online. However, later in the story the digients are also brought into the offline world using robots as peripherals:

Onscreen, Jax steps through the portal, and in the reception area the little robot comes alive. The robot’s head lights up to display Jax’s face, turning the

oversized head into a bubble helmet he's wearing. The design is a way of maintaining the resemblance to the digient's original avatar without having to produce custom bodies. Jax looks like a copper robot wearing a suit of obsidian armor.

Jax turns around to take in the entire room. "Wow." He stops turning. "Wow wow. Sound different. Wow wow wow."

"It's okay, Jax," says Ana. "Remember, I told you your voice might sound different in the outside world." The information packet from SaruMech had warned about this; a metal and plastic chassis conducts sound in a way that avatars in Data Earth don't.

Jax looks up to face Ana, and she marvels at the sight of him. She knows that he's not really in the body—Jax's code is still being run on the network, and this robot is just a fancy peripheral—but the illusion is perfect. And even after all their interaction in Data Earth, it's thrilling to have Jax stand in front of her and look her in the eye. (n.p.)

Ana sees Jax step through the portal in Data Earth (she sees this on her computer screen), and then he is in the robot in the "outside world." Ana and Jax communicate via speech and visual gestures in a way that is similar to the interactions they have had in Data Earth, and yet that interaction feels different in a visceral way: Ana notes that "it's thrilling to have Jax stand in front of her and look her in the eye." Jax, whose only experience of a world previous to this juncture was Data Earth, has to adjust. He is surprised by the sound of his own voice because the nature of sound is different in the offline world as experienced through his robot. His surprise at the sound of his own voice is indicative of the new assemblage he is part of—the "metal and plastic chassis conducts sound" in a different way than what he has experienced online. Jax then goes

on to note the differences in Ana's "avatar" because her physical body is different than her Data Earth avatar: she has pores on her face, small hairs on her arms, and is wearing different clothes. He also becomes accustomed to the "tactile sensors in the robot body...Jax leans into [Ana's] hand; she can feel the weight of him, the dynamic resistance of his actuators. Then Jax hugs her around her thighs" (n.pag.). Ana cherishes this physical interaction and Jax enjoys it as well. This robot body, when it is inhabited by Jax, acts as a dynamic connector between the spacetimes of Data Earth and the "outside world," and through this connector the heterotopic overlap is made visible and visceral. Ana's understanding of Jax evolves due to this interaction, and Jax learns about the physical world in a way that was not teachable in Data Earth. Jax connects to the wider world in many ways throughout the novel, but the robot is one of the most impactful.

In *The Peripheral*, Lowbeer often makes reference to her "aunties:" "We call them that. Algorithms. We have a great many, built up over decades. I doubt anyone today knows quite how they work, in any given instant" (145). Lowbeer is one of two characters, at least two whom the reader knows about, who actually spans the two spacetimes—although her past self diverges from her own path once the stub is initiated, in the same way that the entire future of that past diverges into an alternate timeline. Lowbeer uses her own knowledge of the past and all of the bodies of information that she can access via the "aunties" and their surveillance networks to keep tabs on what is going on in both spacetimes. The algorithms communicate with each other like the molecules in Prigogine and Stengers' chemical clock, and that communication through diffusion then extends to Lowbeer as pieces of information and scenarios arrive in her consciousness through yet another unknown communicative process. The algorithm assemblage connects to and often disrupts the Lowbeer assemblage, and together Lowbeer and the aunties seek new equilibrium states. These algorithms thus act as

connectors in their own right between the spacetimes and with Lowbeer. Gibson gives them a fair amount of agency as they work independently:

“Do you know?” [Netherton] asked [Lowbeer].

“About what?”

“Flynn’s decision.”

“I do,” she said. “After all these years, I still find it vaguely embarrassing. Though it wasn’t that I specifically asked to hear it. The aunties fetched it.” (381-382).

The aunties constantly surveil and process and deliver, according to their own standards, anything that will be “of use” in a given situation. The aunties are what allow Lowbeer to impinge or intercede on all of the assemblages and machines in both spacetimes. This image of algorithms as both actors and connectors is becoming increasingly important in our own world, and it is one of the areas that I would like to examine in my research after my dissertation.

#BlackLivesMatter: Nonhuman actors as connectors

These overlaps, these instances in which you are experiencing multiple spacetimes, can be seen in instances like the ongoing protests in response to police violence in the United States, which have reached a broad audience through the combination of in-person protests and spreading information online via social media. I came to the #BlackLivesMatter case study through the events in Ferguson, Missouri, but the hashtag did not emerge in the wake of Mike Brown’s murder—that was more the role of #Ferguson, #MikeBrown, and #DontShoot (Bradford). #BlackLivesMatter was in existence earlier. The hashtag was created by Patrisse Cullors in response to a Facebook post by Alicia Garza in the wake of George Zimmerman’s acquittal in the Trayvon Martin murder trial on July 13, 2013 (King). The following day “Cullors wrote on Garza’s wall with a proposition: ‘twin, #blacklivesmatter campaign? can we discuss

this? i have ideas. i am thinking we can do a whole social media/all out in the streets organizing effort. let me know.” (King). Cullors and Garza, both community organizers themselves, brought in a group of other community organizers and activists (King). From the beginning Cullors, Garza, et al, used the hashtag and phrase in both online and offline actions. The hashtag was brought into the Ferguson conversation as it was linked to numerous other recent cases in 2014 and 2015. The hashtag has become emblematic, and continues to link these cases and the range of activities around them. #BlackLivesMatter even won Word of the Year at the American Dialect Society (ADS) annual meeting in 2015. The Chair of the New Words Committee of ADS Ben Zimmer explained that “[w]hile *#blacklivesmatter* may not fit the traditional definition of a word, it demonstrates how powerfully a hashtag can convey a succinct social message” (ADS). #BlackLivesMatter can be found both on protest signs and various social media platforms, like Twitter, and in connection with instances of violence across the country. The hashtag acts as a transversal link between online and offline activities—this link takes advantage of the variety of spaces and times involved to multiply the political impact of the protests by contributing to the production of global attention. The hashtag is transversal, it superimposes and brings into conjunction multiple spacetimes. The spacetimes do not collapse into one another, but rather you experience them simultaneously, both in tension and harmony with each other.

Whereas the Harlem Shake meme seems more like a bridge, the hashtag feels more like a well (in Serres’ language) or a wormhole:

The bridge is a path that connects two banks, or that makes a discontinuity continuous, or that crosses a fracture, or that patches a crack. The space of an itinerary is interrupted by a river; it is not a space of transport. Consequently, there is no longer one space; there are two without common boundaries. They are so different that they require a difficult, or dangerous, operator to connect

their boundaries—difficult since at the very least a pontiff is necessary, dangerous since most of the time a devil of some sort stands watch or the enemies of Horatius Cocles stand ready to attack. Communication was interrupted; the bridge re-established vertiginously. The well is a whole in space, a local tear in a spatial variety. It can disconnect a trajectory that passes through, and the traveler falls in, the fall of the vector, but it can also connect spatial varieties that might be piled upon one another: leaves, layers, geological formations. The bridge is paradoxical: it connects the disconnected. The well is more paradoxical still: it disconnects the connected, but it also connects the disconnected. (Serres 42-43)

In both cases nonhuman actors, or actants, trigger an experience of multiple spacetimes, and I believe that this experience is transformative. The Harlem Shake acts a bridge to connect disparate spacetimes in a way that still reinforces the existence of two (or more) discontinuous sites. As discussed in Chapter Three, the examples of the Harlem Shake that came out of post-Arab Spring Egypt and Tunisia brought attention to the authoritarian nature of post-revolt regimes, but these memetic videos and protests did not collapse the reality or interpretation of these regimes into a single spacetime. The videos filmed at protests in Tunis and Cairo generated attention, but did not connect discussions about these regimes to discussions surrounding other famous examples (e.g., the Harlem Shake [video](#) filmed by the Miami Heat of the NBA).

I see hashtags like #BlackLivesMatter acting as wells or wormholes because they function differently both in degree (they connect more spacetimes simultaneously) and in kind (they have the potential to collapse multiple spacetimes into a single arena of action and discussion). In her article “Hashtagging the Streets” An Xiao Mina explains that “Hashtags reach

across time and space, collapsing them on the Internet into a shared conversation....These actions are interconnected, they are each part of a larger whole. Each sign, each tweet, each photo is a tiny contribution” (Mina). To further emphasize the distinction that Serres makes: while both the Harlem Shake and #BlackLivesMatter can connect the disconnected (whether by bridges or wells), the latter also disconnects the connected. One can see this in, for example, a graffitied version of the hashtag, which has the potential to viscerally pull someone out of their walk down the street or commute to work and connect them to this now contiguous space of action and discussion. In fact, the use of #BlackLivesMatter in graffiti was inadvertently immortalized in an episode of the US TV series *Homeland* in 2015. The producers hired a group of “graffiti artists to decorate street scenes of a Syrian refugee camp,” but those artists went onto “critique the show’s politics” through the graffiti they chose (Amin, et al). The artists described their use of subversive graffiti as a form of critique using the term “laughtivism” (Amin, et al). Many of the pieces of graffiti were directed at the show itself, with multiple tags saying things like “Homeland is racist” in Arabic, but one image in particular caught my attention:



Figure 1: (Amin, et al)

This particular image includes #BlackLivesMatter in Arabic, which to an informed viewer creates yet another level of critique as the artists are linking the racist systems which support the production of a show like *Homeland* with the racist system of police violence in the United States. This image of #BlackLivesMatter thus plays an active role in linking conversations about US foreign policy, popular culture, and the movement contesting racialized police violence in the US. The Harlem Shake videos could potentially make connections like these, but in practice the hashtag has already shown this capability in offline spacetimes and it is in its nature in online worlds because of the hyperlink functionality of hashtags on websites like Twitter and Facebook.

#BlackLivesMatter also points to the possibility of connecting actions and discussions spread over time, in various spaces, and in response to different events. Like #BringBackOurGirls, #BlackLivesMatter has a history—it developed within a series of conversations, has been used by a variety of groups and individuals, and links conversations to a number of events.

Those who originated #BlackLivesMatter are concerned with issues of co-optation, as they made explicit during a presentation at SXSW 2015 (Walker). Alicia Garza and Opal Tometi “created the national organization #BlackLivesMatter...after the shooting death of Trayvon Martin in Florida by George Zimmerman” (Walker). In their presentation, Garza and Tometi expressed concerns about the possible dilution of their message by related hashtags like “#MuslimLivesMatter and #LatinoLivesMatter” (Walker). Interestingly, they did not discuss other related hashtags like #BlueLivesMatter and #AllLivesMatter, which are being used like #BringBackOurDrones to undercut the meaning and power of #BlackLivesMatter. The hashtag, like one of Serres’s weavers, creates an intersection that functions as an in between, and the ruling logic in that in between is the aleatory. No one person or group can control with precision

the direction or impact of that intersection-assemblage. With #BlackLivesMatter, there is a community that worked to generate the hashtag and to imbue it with a certain meaning, but once it is out there drawing people and spacetimes together, chance takes over. Some people see #BlackLivesMatter and they take it as it was intended: a statement about the inherent value of black lives that needs to be declared because the structures of power in the United States metaphorically and literally work against that idea. Others see that hashtag and respond with #AllLivesMatter, and sure, all lives do matter, but not all people have to deal with the system in the same way. Still others respond, with even more hostility, that the hashtag should be #AllBlueLivesMatter in reference to the police, and this hashtag can also be found both online and offline in counter-protests:



Figure 2: @saladinahmed

These hashtags are participating in a larger debate about current structures of power and inequality.

Furthermore, the concerns of Garza and Tometi about the possible dilution of their intended message through #BlackLivesMatter fails to take into account the agency of the

hashtag itself. In this case, the hashtag is the connector: the machine that reaches or diffuses across assemblages to bring multiple spacetimes into conjunction. In his discussion of Whitehead's approach to creative chance, Connolly introduces an example of how "creative chance [can work] in nonhuman processes":

According to biologists, a bacterium needs phosphorus to survive. But in one experiment, with bacteria that had lived in the vicinity of arsenic, infusions of arsenic encouraged the bacteria to evolve so that arsenic replaced phosphorus to a great degree as the life-giving source. From a Whiteheadian perspective, this creative development, if true, is complex: it involves a process of ingression, a "feeling" by the bacteria of some degree of affinity to the arsenic, and creative self-organization on the part of the bacteria as the "concrecence" by which it evolves into a mode of life—an actual entity—previously indiscernible on Earth.

(157)

So, what does the hashtag feel? How does the hashtag participate in processes of self-organization and evolution? Like Gibson's aunties, #BlackLivesMatter operates in mysterious and opaque ways, but there is still value in trying to examine the "apparent creativity" of the hashtag and the ways in which it operates.

Conclusion

In this concluding section I will examine what is at stake politically in considering multiple spacetimes, the way they interact with and impinge upon each other, and the variety of connectors or bridges that can bring these spacetimes into conjunction. First, it is important to note that the interactions of spacetimes are potentially powerful because we live in thermodynamic time—the time of open systems and the rejection of the all-mighty power of

linear causality. For Prigogine and Stengers the consequences of this are felt in both the study of physics and also the social sciences:

The ideas to which we have devoted much space in this book—the ideas of instability, fluctuation—diffuse into the social sciences. We know now that societies are immensely complex systems involving a potentially enormous number of bifurcations exemplified by the variety of cultures that have evolved in the relatively short span of human history. We know that such systems are highly sensitive to fluctuations. This leads both to hope and a threat: hope, since even small fluctuations may grow and change the overall structure. As a result, individual activity is not doomed to insignificance. On the other hand, this is also a threat, since in our universe the security of stable, permanent rules seems gone forever. We are living in a dangerous and uncertain world that inspires no blind confidence, but perhaps only the same feeling of qualified hope that some Talmudic texts appear to have attributed to the God of genesis... (312-313)

We cannot predict the outcome, but we can embrace the potentiality of multiple, conjoining spacetimes—spacetimes as assemblages with fuzzy boundaries, which are populated with both human and nonhuman machines at various scales. Spacetimes which open onto and connect to each other through a variety of weavers: hashtags, money, people, devices, etc. For those interested in social justice this moment inspires hope as there is the potential for real change to our current system of authority and the racist discourse supporting it. Whether you feel this hope or not, however, the current system of authority and how it addresses agency (and thus accountability) is inadequate. The current system cannot take into account the implications of distributed agency which result from these interweaving heterotopic assemblages.

Embracing these conjunctions and their potentially disruptive force creates room for chance. The weavers creating these conjunctions can take many forms, both human and nonhuman. The most evocative weaver in the context of this dissertation is the hashtag, because it draws upon all of the theoretical concepts I have developed throughout this dissertation. The hashtag both creates and emerges from heterotopic assemblages that bring together online and offline spacetimes, and, once in existence, hashtags often function as memes. Hashtags could be addressed by more traditional political science models. Many quantitative researchers, for example, count hashtag mentions on forums like Twitter and Facebook in their work on domestic political elections. This research can be quite valuable: for instance, these studies can demonstrate how a piece of information or a campaign issue spreads among interest networks. Zeynep Tufekci has combined quantitative research of this type with qualitative field work to study the emergence and growth of protest movements around the world. In her recent TED talk, however, she claims that while “social media helps empower protest” the ease and speed at which actions can be organized through social media can lessen their long term potential for creating change (Tufekci “Online social change”). She contrasts recent movements like Gezi Park and Occupy with the Civil Rights movements of the second half of the 20th century. Tufekci explains “So when you see this March on Washington in 1963, when you look at that picture...you don’t just see a march and you don’t just hear a powerful speech, you also see the painstaking, long-term work that can put on that march. And if you’re in power, you realize you have to take the capacity signaled by that march, not just the march, but the capacity signaled by that march, seriously” (“Online social change”). The images of the march demonstrate the organizational, networking, and logistical capacity of the many people involved.

In many ways I agree with Tufekci. In a world in which thousands, or tens of thousands, of people can be marshaled at short notice via social media to not only sign an online petition but also to show up at massive in-person protests, such protests can be seen as toothless. Such protests do not necessarily require massive organized networks of people and supplies as they did in the past. However, I find that such research can miss the disruptive potential of something like a hashtag—a nonhuman actor that brings assemblages into conjunction, and thus spawns new assemblages. Although protests and the like can be organized much more quickly now, we should neither assume that real social and political change will also come quickly nor that it will never arrive. If it took decades of organizing and massive protest action to create any change from the Civil Rights movement, then the question should be how can we bridge the gap between faster protest cycles and the still slow cycles of social and political change? I do not claim that hashtags or memes are disruptors in the Silicon Valley or Singularity sense—there will not be a single, perfect hashtag that initiates instant political revolution. Rather, I claim that hashtags have the potential to play a role like the Rosa Parks incident. Tufekci explains that the major players in the Civil Rights Movement had been “preparing for many years and decided it was time to swing into action after Rosa Parks was arrested” (“Online social change”). Leaders of the Civil Rights movement had decided against taking action after similar incidents in the past, but they saw in Rosa Parks a person (and an event) that would work as the new poster child of the movement. The Parks incident was used as a galvanizing moment in the context of a long term and developing struggle. Hashtags like #BringBackOurGirls and #BlackLivesMatter can be used in a similar way. As discussed in this chapter and Interlude Three both of these hashtags were created and promoted by experienced community organizers to similarly galvanize action. However, the context in and scale at which these hashtags operate are different. As Tufekci says, social media campaigns can break official

and unofficial media censorship campaigns (“Online social change”), which has implications on both the domestic and the global scale. #BlackLivesMatter, for example, has been used in protests all over the world, and, while this is a concern for the group that created the hashtag, the global presence of #BlackLivesMatter further populates the conjunction that the hashtag creates.

It is important to understand that the group of people who created and initially promoted #BlackLivesMatter were already activists with experience in organizing movements around various issues: Alicia Garza was “the executive director of the San Francisco-based advocacy organization People Organized to Win Employment Rights;” Patrice Cullors was an “anti-incarceration activist [who] had recently started a prison-reform organization called Dignity and Power Now;” and Garza and Cullors brought in Opal Tometi, “another organizer they knew, who works as executive director of an immigrant-rights group in New York called Black Alliance for Just Immigration” (King). Although Garza and Cullors initiated the social media and the “out in the streets organizing effort,” the hashtag and the assemblage surrounding it has taken on a momentum all its own. Garza, Cullors, Tometi, and many others that they work with directly are still involved (and still seeking to control the direction and message of the hashtag campaign), but the hashtag-assemblage exceeds these efforts. Their organizational efforts continue to grow (the “movement that now claims 26 local chapters in places as far-flung as Toronto and Ghana” [King]), but as the already viral feature in *The New York Times* attests (Kang) this original group does not control the hashtag or the associated assemblage.

On the one hand, this situation appears to mirror Tufekci’s concern—the speed at which the hashtag and the protests have grown has not allowed for a singular, consensus-building movement to come into being. On the other hand, this hashtag-based movement has many members with the organizational and logistical capacity that Tufekci is concerned is lacking.

Also, it seems like participation in the protests around the hashtag is radicalizing at least some individuals in ways that go beyond the passing fancy of participating in a single protest. The piece in *The New York Times*, “Our Demand is Simple: Stop Killing Us,” features two individuals who have gained prominence via their social media and in-person participation in the 2014-2015 protests that started in St. Louis with the killing of Michael Brown and most recently in Baltimore with the death of Freddie Gray: DeRay Mckesson¹⁷ and Johnetta “Netta” Elzie (Kang). The #BlackLivesMatter assemblage is not only shifting the ways in which attention is created and sustained, but the continuing actions, both online and on the ground, are changing people. Only time will tell whether or not this hashtag-based assemblage will create social and political change, but it is already having critical effects. The use of the hashtag links online actions on social media with physical protests—the hashtag doesn’t collapse these actions and spacetimes, rather, it brings them into conjunction. The hashtag becomes a trans-dimensional crossroad that not only makes new resonances across spacetimes possible, but can make such resonances almost unavoidable. We do not know if the next president of the United States will truly address the social and legal structures that underlie the terrible inequality in this country, and especially in its cities, but “nearly every prospective candidate in the coming presidential election...released a statement” in response to the murder of Walter Scott “expressing horror at Scott’s death and promising to address criminal-justice-system reform” (Kang).

The #BlackLivesMatter assemblage carries many legacies, and some would say a lot of baggage, but what protest movement has ever been without baggage? Kang writes that both Mckesson and Elzie have “expressed ambivalence over whether the youth movement should try to draw from the popular image of the civil rights movement.” This ambivalence makes sense, because the legacy of the civil rights movement is in itself ambivalent—many of its

¹⁷ Mckesson recently announced his intention to run for mayor of Baltimore (Wagner).

accomplishments have been undermined in the subsequent decades, many civil rights leaders have been co-opted and “distorted” (Kang), and the reality is that we are not in the 1950s or 1960s anymore. Although many aspects of the context are the same (the power structures certainly target the same populations) many other aspects are different. One could still ask why the movement is emerging now as police have been hurting and killing African Americans in the United States since police forces emerged from slave-catching bounty hunters and the post-Civil War criminal justice system: “The criminal justice system became the mechanism for continued social control of the African American. Criminal laws referred to as ‘Black Codes’ resulted in convictions that led to years of imprisonment with hard labor for such minor infractions as vagrancy and loitering” (Browne-Marshall 105). From the beginning such laws were “applied disproportionately against the newly freed Africans, especially in the South” (Browne-Marshall 105). Throughout the Jim Crow era African Americans had to deal with both a violent legal system and violent roving bands of private citizens (Browne-Marshall 108). Even as progress was being made in cases like *Mapp v. Ohio* and *Brown v. Board of Education*, Browne-Marshall explains that the introduction of stop and frisk, which gives the police “the power to stop a person based on reasonable suspicion of imminent danger to the police or the public,” basically set the entire system back to the start—if you are an African American the police can stop and physically harass you at any time (113).

The reality of the police in the United States acting violently and prejudicially towards African Americans has been persistent over time. Yet, the general public has still expressed surprise and outrage in response to the individual cases publicized in 2014 and 2015. One reason for the current and recent outrage is the hashtag. The hashtag links each new case to the previously publicized ones in a visceral way. The hashtag continually initiates and grows this particular assemblage. The current atmosphere is likely also impacted by the increasingly bold

attacks on civil rights as typified in recent legislation targeting voting rights (e.g., stricter ID laws being passed in tandem with the closure of DMV offices in predominantly African American areas in Alabama). With the emergence of #BlackLivesMatter we are not only hearing about the broad issue of prejudice in the US legal system but also the individual cases—we are learning the names of the victims. As Kang explained in *The New York Times*, “The swiftness with which the movement now acts, and the volume of people it can bring out to every protest, have turned every police killing into a national referendum on the value of black lives in America.” Although focusing on individual cases will not necessarily lead to changes in the “whole racist edifice” (Angela Davis qtd. in Jeffries) of the United States, and in particular its criminal justice system, the fact that these cases are generating national referenda on the value of black lives demonstrates the galvanizing force of the movement.

The movement has many antecedents, but one of its rallying points is this hashtag. The hashtag, as an actor in itself and as part of larger assemblages, is both a weaver and a multidimensional crossroads bringing together people, organizations, websites, media outlets, streets and highways, and more from around the world. The images, both those visibly including the hashtag and those digitally marked with the hashtag, are resonating with global audiences, and their evocative nature is shifting the discourse both in the United States and abroad.¹⁸

¹⁸ Political ploy or not, the religious leader of Iran tweeting about #BlackLivesMatter has the potential to be really damaging to the United States (Abdelaziz).

Chapter 5. Afterword

Throughout this dissertation I have examined the Internet as a realm of heterotopic assemblages that emerges from the interactions of online and offline spacetimes. Such assemblages bring aspects of the online and offline into conjunction through processes of weaving. These assemblages include human and nonhuman actors, and through them new forms of distributed agency are coming to the fore. As these interweaving assemblages emerge they are challenging existing structures of authority and accountability, which have previously relied upon the naturalization of certain ideas (i.e., sovereign power, human agency, etc.) to maintain dominance. Understanding the world as a collection of interacting and ever-changing assemblages has thus made room for new modes, areas, and participants in politics.

These contributions can be demonstrated through a return to the heterotopic nature of the assemblages spanning online and offline spacetimes initiated by memes and hashtags. The heterotopic assemblage around #BlackLivesMatter demonstrates all aspects of the heterotopia as I understand it. The first principle is that the generation of heterotopias is universal—that heterotopias can and are generated in all spacetimes. The heterotopic assemblage around the hashtag exists—the hashtag is one machine in this assemblage, but it also includes individual people, pre-existing groups and organizations, the telecommunications infrastructure, various social media platforms, individual devices (especially smart phones that are used to post and access information, photos, and videos on social media platforms), in-person protests of various kinds (blocking highways, die-ins, etc.), and even the graffiti that includes the hashtag.

The second principle is that variance is intrinsic to heterotopias—any given heterotopia will vary over time as its function varies over time. The evolution of the hashtag and its associated assemblage can already has already been traced. The hashtag was initiated by a

small group of experienced activists in the United States, but it has since been used by and inspired a much larger group. Entire websites have been created in support of the hashtag, and the content of these websites has changed over time. We have also seen the meaning of the hashtag contested over time with groups challenging its exclusivity and meaning. Other groups have tried to co-opt its form (as I discussed in Chapter Three with memes like the LOLcat), and thus we have seen examples like #AllLivesMatter and #BlueLivesMatter.

The third principle states that a heterotopia juxtaposes several sites in one place. This principle is perhaps the most central to my use of the heterotopia. This hashtag and its assemblage brings into conjunction the street and the web, West Baltimore and Ferguson, the United States and Israel, and so on. The hashtag creates a “between” or a “crossroads” in the sense of Serres that does not erase the previously disparate objects, people, or spacetimes, but rather illuminates the now porous borders between them. This conjunction is visceral, one feels it in an embodied way, and that feeling is often shocking. The fourth principle deals with the heterotopia as a site of interrelating times, in which the various times bleed into each other. I strongly connect the fourth principle to the third because at their core space and time are interrelated. Thus, if a site juxtaposes spaces it must also juxtapose times.

The fifth principle states that all heterotopias exist within a system of openings and closing, and, essentially, that any heterotopia has protocols for entering, exiting, and behaving within its boundaries. The heterotopic assemblages around #BlackLivesMatter includes both technical and cultural protocols. The technical protocols primarily involve how a hashtag works in digital environments—on web platforms that support hashtags any phrase connected to a hashmark (#) acts as a hyperlink. On Twitter, for example, one can click on a hashtag in any tweet, and the website will return a list of the most recent (and the most popular) tweets that include the hashtag. However, if you create a tweet that uses the hashtag incorrectly your tweet

will not be findable using these mechanisms. There are a number of ways that a hashtag can go awry: if you put a space between any of the words or letters, if you include any other punctuation, et cetera. There are also cultural protocols around the hashtag assemblage, and these are very much unsettled as there are ongoing debates around what the hashtag should mean, how it can or should be used, and who (if anyone) should profit from the hashtag.

The sixth and final principle is that a heterotopia should have a relation to all other spaces. In its founding and core meaning, #BlackLivesMatter was a statement about valuing and loving black lives in America, because Alicia Garza and Patrisse Cullors were dealing with the anger and grief that so many people felt in the wake of the George Zimmerman trial verdict (King). This core meaning, which I certainly argue is still the primary meaning of the hashtag and the dominant assemblage around it, generates a spacetime of compensation—within the hashtag-based heterotopic assemblage black lives matter and are valued, and this mattering reveals the lack and messiness of much of the rest of the world. So, when Foucault says that a space of compensation is “other, another real space, as perfect, as meticulous, as well arranged as ours is messy, ill constructed and jumbled” (27), it captures one of the ways in which the heterotopic assemblages around #BlackLivesMatter function.

In considering the implications of this dissertation the trend that I look to is who or what is working successfully in concert with these human/nonhuman assemblages. Although there are numerous examples of establishment figures creating top-down advertising or propaganda campaigns which take advantage of things like meme-assemblages, I am most excited by the alliances between the disenfranchised and nonhuman weavers like memes and hashtags. I have demonstrated throughout this dissertation that such groupings can challenge existing power structures through the heterotopic and intensive aspects of their assemblages. In the future, I hope to combine this approach, which I think of as interweaving material assemblage

theory, with other theories and methods. I am particularly interested in pairing my approach with a traditional quantitative approach to see whether or not something like a network analysis would complement my assemblage theory. I will also continue to develop the policy implications of this take on the relationship between online and offline spacetimes. But for now:



Figure 1 (<http://giphy.com/search/thats-enough-internet-for-today>)

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