

Critical Techno-dramaturgy:
Mobilizing Embodied Perception in Intermedial Performance

by

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ABSTRACT

This dissertation attends to the ways in which the deployment of technological devices in twenty-first-century intermedial performance might influence the audience members' perception of the relationship between humans and technology. Drawing upon the work of scholars in the fields of new media, performance studies, and the philosophy of technology, I argue that intermedial performance artists reinvigorate the role of the human body in performance by mobilizing embodiment as a *techno-dramaturgical* strategy for shaping the audience members' perception of human-machine interaction. Chapter One surveys the history of performance and technology from the ancient Greek theatre to twentieth-century performance, with particular emphasis on the conceptual significance of *techne* and *poiesis* in dramatic theatre. Chapter Two examines the theories of intermediality in performance as well as the co-evolutionary relationship between human beings and technicity in order to delineate the analytical and dramaturgical potential of an original conceptual framework known as *critical techno-dramaturgy*. Chapter Three explores the interplay between embodiment, technology, and space in intermedial performance and its effects on the audience members' awareness of their embodied existence as they navigate the cityscape with bicycles, handheld computers, and mobile phones. Chapter Four investigates the intersection of performance and techno-anxiety by looking at how intelligent machines that appear to perform autonomously might affect the audience members' perception of these anthropomorphic technological agents in relation to their own bodies. Chapter Five examines how the construction of the "cyborg" as both a conceptual metaphor for and a material instantiation of human-machine "fusion" could impact the prosthetic relations between persons with disabilities and the technological devices that they employ in intermedial performance. Finally, Chapter Six looks at my involvement in the production of an original creative project that uses *critical techno-dramaturgy* as a strategy for shaping the audience members' perception of the complicity between digital media (particularly video technology) and the mediation of death.

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Introduction

“There is nothing more illusory in performance than the illusion of the unmediated.”

- Herbert Blau, *The Eye of Prey*, 1987, p.164.

“To be a body, is to be tied to a certain world [...]; our body is not primarily in space: it is of it.”

- Maurice Merleau-Ponty, *Phenomenology of Perception*, 2002, p.171.

On a cool autumn day in October 2007, a group of cyclists rode across the city of London on bicycles that were outfitted with mobile computing devices. These cyclists were not preparing for a triathlon. Instead, they were the player-participants of *Rider Spoke*, a public performance event organized by the British theatre company, Blast Theory. In this intermedial performance, the cyclists rode across the busy city streets and dark alleyways of London in search of a number of chosen locations. At each location, they were asked to record personal and reflective audio messages in response to a set of predefined questions that appeared on the mobile devices. Moving out of the structural confines of the theatre and into the hustle and bustle of the urban landscape, *Rider Spoke* embodied what the creators call “a pervasive game,” in which the participating cyclists played the roles of performers and audience members.

By travelling from location to location within the city in order to listen to and record personal messages, the cyclists were engaging in a generative performance that affected their perception of space through the coupling of their bodies with such technological implements as the bicycle and the mobile device. Navigating the London cityscape as part of an intermedial performance that amalgamates the physical act of cycling, the use of mobile devices with locative

capabilities, and the poetic art of oral storytelling, this was an embodied experience that foregrounded the role of the body in the perception of physical and imaginative worlds. Such bodily self-awareness is predicated on the habit of movement (cycling in this case), which is especially salient in a public performance that involves a substantial amount of physical toil.

Habit involves the repeated performance of actions on a regular basis. More importantly, it is an embodied experience. The French philosopher Maurice Merleau-Ponty believes that “[h]abit expresses our power of dilating our being-in-the-world, or changing our existence by appropriating fresh instruments” (2002: 166). Citing the example of the typist who knows exactly which keys to press even without looking at them, Merleau-Ponty argues that habit is not a form of knowledge or an involuntary action. The typist does not perform the movements on a typewriter by positing the keys as objective locations in her mind. The positions of the keys are not concepts to be memorized. Instead, the typist learns to type by incorporating “the key-bank space into [his or her] bodily space” (2002: 167). Similarly, the cyclists in *Rider Spoke* incorporate the rotary space of the bicycle pedals into their bodily space as they cycle through London. What this means is that the habits of typing and cycling occur not in thought. Instead, both typing and cycling are habits of movement that occur in the body, which Merleau-Ponty characterizes as “our general medium for having a world” (2002: 169). In its role as a mediator of a world, the body is capable of learning about its embodied relationship with inorganic objects, as it adapts to (and extends its influence in) the world through the use of technological prostheses.

Writing in 1945, Merleau-Ponty asserts that technology affects our embodied perception of the world and the bodies and objects that we encounter in daily life. Almost two decades later, in 1964, Marshall McLuhan would argue in his monumental book, *Understanding Media*, that technology has the capacity to alter the “sense ratios or patterns of perception” in the embodied human (1994: 31). But how does embodiment work? And how does the body exist? “To be a

body,” Merleau-Ponty contends, “is to be tied to a certain world” (2002: 171). The body does not simply exist in space. Rather, the body modulates space, and such an embodied modulation in turn influences our perception of that space. In order for us to experience the world, the external instruments that extend our senses have to be incorporated into the body as part of its embodiment. In *Rider Spoke*, the participants’ perception of space is modulated through their embodiment with such technological implements as the bicycle and the mobile computing device. Whether it is the physical act of cycling across London or the oral recording of personal narratives on a digital device at different locations within the city, the human body features prominently in this intermedial performance.

The interplay between embodiment, technology, and space in Blast Theory’s *Rider Spoke* foregrounds the need to interrogate the role that the body plays in the production and experience of intermedial performance. The aim here is to understand how the audience members perceive their embodiment with various forms of technology, be they digital or otherwise. As such, this dissertation attends to the interface between performance and technology in intermedial performance. Specifically, the project analyzes the ways in which intermedial performance artists incorporate the audience members into the creative process in order to influence their perception of the relationship between humans and technology. But before we set out to interrogate the mobilization of embodied perception in intermedial performance, let us reflect on the theoretical debates concerning the notion of “liveness” and how it influences our understanding of theatre and performance. What has been dubbed the “liveness debate” in theatre studies has influenced the intellectual discourse on intermedial performance in the first decade of the twenty-first century, particularly in relation to the ways in which the theatrical medium distinguishes itself from other forms of media on the basis of its seemingly ephemeral qualities. Much of the tension surrounding the need to differentiate between the “live” and the “mediated” in performance has

since been defused, as such intermedial performance scholars as Maaïke Bleeker, Robin Nelson, and Andy Lavender have moved the discussion beyond the notion of “liveness” as the definitive ontology of the theatrical experience. But for the benefit of readers who may not be familiar with the “liveness debate” of the 1990s, or with theatre and performance studies in general, the next section will consider the possibility of moving beyond “liveness” as we investigate the perceptual effects of intermedial performance. Subsequently, in the latter part of this introduction, I will offer an overview of the main thesis in this dissertation, as well as a summary of the key topics that will be examined in each of the six chapters.

Beyond “Liveness”

Over the past two decades, theatre researchers have been intrigued by the interface between performance and technology. From Brenda Laurel’s investigation into the relationship between dramatic performance and human-computer interaction to the debates between Peggy Phelan and Philip Auslander on the question of “liveness” in what the latter calls “mediatized performances,” as well as recent efforts by Sarah Bay-Cheng, Chiel Kattenbelt, Andy Lavender, and Robin Nelson in mapping and theorizing the phenomenon of what they term “intermediality in performance,” much of the scholarship on the conjunction between performance and technology has been focused on identifying the unique features of this evolving aesthetic paradigm and defining such key concepts as “embodiment” and “interactivity”. According to Kattenbelt, intermediality in the context of theatre and performance assumes a co-relation between different media that results in what he characterizes as a “mutual affect” between them. As a result, he purports that previously existing medium-specific conventions are challenged and altered during the course of intermedial performance, thus resulting in new critical dimensions of perception and experience of the various media that perform alongside the human actors.

In the edited volume, *Intermediality in Theatre and Performance*, Freda Chapple and Chiel Kattenbelt describe intermedial performance as “a space where the boundaries soften – and we are in-between and within a mixing of spaces, media, and realities” (2006: 12). For Chapple and Kattenbelt, intermedial performances hold much potential for perceptual training and cognitive adaptation. Such performances, they contend, can become the site where both actors and audiences learn to navigate new technological developments in society, albeit within the boundaries of a self-contained space that constitutes the theatrical milieu. But the intermedial performance environment, I would argue, is more than just a perceptual proving ground where audience members strive to familiarize themselves with the functional capabilities of new technologies. Instead, the intermedial stage is an interstitial space where the traditional distinction between performers and audience recedes, as they participate in a performative coupling with technological devices, an act that allows them to reflect on how the use of these devices in everyday life might affect the human condition. But while researchers such as Chapple and Kattenbelt seek to understand the perceptual effects of the interface between performance and technology, it might be worth exploring some of the lessons that have emerged from the “liveness” debates between theatre scholars, Peggy Phelan and Philip Auslander, in the 1990s.

The debate between Phelan and Auslander converged on the notion of “liveness” and whether it should be considered the definitive ontological quality of theatre. Through the course of their dialectical exchanges, Phelan held what was arguably the traditional perspective of theatre as “live” performance by real, presumably human, actors. Such a view of performance is marked by the immediacy and ephemerality of the action on the stage or play area. For Phelan, the “liveness” of performance is marked by its non-reproducibility. Performance occurs in the immediacy of the moment. In other words, it lives only in the present. “Performance,” as Phelan asserts, “cannot be saved, recorded, documented, or otherwise participate in the circulation of

representations of representations: once it does so, it becomes something other than performance” (1993: 146). By emphasizing what she believes to be the non-reproducibility of the performance event, Phelan advances the claim that performance “becomes itself through disappearance” (1993: 146). In this sense, an *original* performance does not exist, as there can never be a copy of it. Following Phelan’s logic, the performance disappears once it has ended. It may continue to exist in the individual memories of the audience members, but in the physical sense, it is no longer present.

There is an apparent privileging of presence in Phelan’s theorization of performance, particularly the presence of tangible objects and bodies in a physical space. The reality of the performance is contingent on the presence of the visible and audible entities that participate in the action of that performance. “Performance,” Phelan argues, “implicates the real through the presence of living bodies [...] Without a copy, live performance plunges into visibility – in a maniacally charged present – and disappears into memory, in the realm of invisibility where it eludes regulation and control” (Phelan 1993: 148). The phrase “regulation and control” is noteworthy, as it is indicative of a directorial view of performance, whereby the artistic vision of the director is expressed in the action that transpires among the actors on the stage. Through the deployment of dramaturgical design, the director regulates and controls the ways in which actors, dialogue, props, set, lighting, and sound are mobilized in the performance. In turn, what the audience experiences would be the regulated and controlled rendering of this performance. But if it is true that the disappearance of performance into memory does eschew the regime of “regulation and control,” a scenario that could potentially alter the director’s artistic vision, then how should we regard the “disappearance” of the performance into such memory devices as video recordings?

For Phelan, a performance that is mediated by technological implements no longer exists as “live” performance (1993: 148). Like the performance that “disappears into memory,” or what Phelan calls “the realm of invisibility,” mediated performance is not physically present and visible to a “live” audience. Philip Auslander takes issue with this dichotomy between the “live” and the “mediated” in the theorization of performance. Auslander believes that as theatre and performance artists begin to incorporate a myriad of technological devices and media into their work, an observable blurring of the boundaries between the “live” and the “mediated” also begins to emerge. As Auslander explains, “[t]he result of this implosion [of the dichotomy] is that a seemingly secure opposition is now a site of anxiety, the anxiety that underlies many performance theorists’ desires to reassert the integrity of the live and the corrupt, co-opted nature of the mediatized” (1999: 39). The mediated environment of the contemporary performance stage has become a site of contention between those performance theorists who regard “liveness” as the natural condition for performance and those who seek to challenge this assumption.

Refusing to privilege “liveness” as the definitive ontological quality of theatre and performance, Auslander contends that the notion of “liveness” in the context of performance is “a cultural construct, not an ontological condition” (1999: 2). “Liveness,” he reminds us, “is historically conditioned” (1999: 2). For Auslander, the cultural meaning of “liveness” is influenced by changes in the historical conditions as well as the technological affordances of the period in which a particular performance occurs:

The live is, in a sense, only the secondary effect of mediating technologies. Prior to the advent of those technologies, e.g. photography, telegraphy, phonography, there was no such thing as the ‘live,’ for that category has meaning only in relation to an opposing possibility. Ancient Greek theatre, for example, was not live because there was no possibility of recording it. (1999: 51)

Auslander's point about the impossibility of making records of performances in the ancient Greek theatre requires further explication. Besides writing down the dialogue in the play and making notes about the position of actors on the stage, the ancient Greeks could not record their theatre performances as moving images. Such a recording technology would only emerge some two and a half millennia later, with the invention of the first motion picture camera in the nineteenth century. But despite the lack of a technology for recording moving images, the memory of ancient Greek theatre performances would have been etched in the minds of the actors and audience members who participated in these productions. Outside of human memory, however, there was no possibility of making a *direct copy* of the performances that transpired on the stage. As such, there was no such thing as a "live" performance in ancient Greek theatre, as the physical dramatic action performed by the actors was the only form of performance that the audience members had known and witnessed. This is why Auslander is convinced that the notion of "liveness" appears to have emerged as a result of technological mediation, which raised the spectre of duplicating what was previously perceived to be a strictly temporal and ephemeral phenomenon – that is, the performance that happens in the here and now. In this sense, the existence of "live" performance is contingent on the potential existence of its mediated double that archives the original event for posterity. But what might happen to the notion of "liveness" when such mediating technologies as videography participate in the actual rendering of the performance, rather than simply recording it as a digital copy? How might the real-time projection of digital video footage – which can usually be replayed without corruption – serve to complement the embodied performances of human actors on the stage?

Perhaps the dichotomy between the "live" and the mediated would only makes sense if we can firmly establish that an unmediated form of performance exists. Indeed, such a postulation would further complicate the distinction between "liveness" and "mediation" in

theatre and performance. Is the presence of media technologies the sole determining factor that distinguishes a mediated performance from a “live” performance? Does “liveness” necessarily connote an unmediated form of performance? The theatre scholar Herbert Blau is wary of the assumption that performance can be devoid of any trace of mediation. For Blau, “[t]here is nothing more illusory in performance than the illusion of the unmediated” (1987: 164). Since the times of the ancient Greek theatre, dramatists have sought to create performances that hide the means of their production in order to sustain the illusion of immediacy. Nevertheless, as Blau reminds us, this unmediated appearance “can be a very powerful illusion in the theater, but it is theater, and it is theater, the truth of illusion, which haunts all performance whether or not it occurs in the theater, where it is more than doubled over” (1987: 165). If theatre is indeed the site where the truth of illusion is “more than doubled over,” especially through the deployment of mediating technologies that contribute to the spectacular rendering of that illusion in performance, then maybe we should not be obsessed with making rigid distinctions between so-called “live” and mediated performances. Moving beyond “liveness”, I believe that we would do well to look at how media technologies operate in theatre performances, and how performers and audience members might be embodied with these technologies. In doing so, we can examine the ways in which the interface between these technologies and the embodied performances of the human actors might affect the audience members’ perception of human-machine interaction.

A brief survey of the history of theatre and performance would reveal that the artistic practice is not inherently opposed to technology. Theatre has always incorporated technological devices into its performance in order to create new aesthetic spectacles that influence the perception of the audience. From the use of masks and mechanical cranes (as embodied by the *deus-ex-machina*) in ancient Greek theatre to the employment of electric lights and sophisticated computing technologies in contemporary performances, technology serves to condition the

perceptual frames that audience members adopt in their experience of intermediality – the interaction between different media elements – in theatre and performance. But rather than treating “liveness” as the definitive ontological condition of theatre, this dissertation examines the role that the body plays in the perception of the intermedial performance event. Specifically, my project aims to discover how embodiment relates to perception in the audience members’ experience of intermedial performance, and how such a relationship might influence their understanding of the interactions between humans and technology.

Critical Techno-Dramaturgy: Proposing a Conceptual Framework

In his compendious volume, *Entangled: Technology and the Transformation of Performance*, intermedial researcher and theorist Chris Salter asks what differentiates the use of technology in artistic creation from the same practice in everyday life? Salter’s question seeks to establish the purpose of artistic performance (particularly those that incorporate new technology) in a world where “everyday life becomes a media spectacle” that takes the form of “an ongoing ludic artifice, all made possible through technical beings” (2010: 352). In light of the rising number of online media content produced by amateurs with no professional training in art or videography, Salter notes a significant shift in the creative power to transform the everyday into the fantastic from the domain of artists to that of ordinary people:

[T]he estrangement of daily life’s routines that long was the territory of artists is now in the hands of everyday people who, in their attempt to elevate the workday to the status of the fantastic, upload videos of their daily cooking and cleaning rituals, going to church and taking out the trash on YouTube, like so many home movies, hoping to achieve the millisecond attention of our increasingly saturated eyes. (2010: 352)

As the lives of ordinary people become increasingly entwined – or, as Salter puts it, “entangled” – with a myriad of advanced media technologies, it becomes possible to produce fascinating audio-visual spectacles with minimal effort, time, and money. Alluding to the extraordinariness of performance, Salter wonders if anything could counteract this pervasive cultural transformation of the mundane rituals of daily life into mediatized spectacles that can be rapidly disseminated across the world via the Internet. But rather than infusing the discourse on intermedial performance with yet another dichotomy that pits professional artists against amateurs who crave attention online, my aim is to understand how intermedial performance can encourage ordinary people to reflect on their relationship with technology, be it within an artistic context or in everyday life. For this reason, I seek to devise a conceptual framework that explores the ways in which intermedial performance artists employ technology in their work and how the audience might be affected by the creation of such an intermedial experience. In addition, this conceptual framework also functions as a dramaturgical method that resists the instrumentalist approach towards the incorporation of technology into intermedial performance. Indeed, the deployment of technological implements into the *mise-en-scène* of the performance should open up the possibility for critical reflection on the relationship between humans and technology.

While theatre scholar Meike Wagner has argued for “a critical approach to the mediality of theatre as a performative and communicative space,” especially as it foregrounds the phenomenological character of intermedial performance and “the corporeality of the theatre spectator,” it might be tempting to situate the critic as an external observer of the performance event rather than an active participant within it (2006: 127). Perhaps one way to counter this tendency would be to incorporate the potential for critical analysis into the intermedial performance event. But how would such a self-reflexive critical technique work? This is a question that Susan Broadhurst addresses in her experimental performances by focusing on the

interactions between human actors and a myriad of new media technologies ranging from virtual reality to artificial intelligence. According to Broadhurst, new modes of perception and consciousness are achieved through what she calls “the imperceptible intensities” that the audience members experience during an intermedial performance, where “various intensities are at play” (2006: 148). But instead of subscribing to a disembodied view of intermedial performance, she believes that “technology’s most important contribution to art is the enhancement and reconfiguration of an aesthetic creative potential which consists of interacting with and reacting to a physical body, not an abandonment of that body” (2006: 149). For Broadhurst, the coupling of the performing body with a variety of technological devices within the “tension-filled liminal spaces of physical and virtual interface” presents interesting opportunities to develop “new experimental forms and practices” in the theatre (2006: 149). In light of these dramaturgical opportunities, I suggest that what we need is a conceptual and dramaturgical framework that not only facilitates the design of an intermedial performance event, but also critically analyzes how intermedial performances can affect the audience’s perception of human-machine relations. I call this framework “critical techno-dramaturgy”.

In the course of developing this conceptual framework, I will examine a selection of seven intermedial performances that were produced in the early-twenty-first century. Appearing at the dawn of a new century that witnessed the rapid development of digital media and other new technologies that significantly altered how people work, create art, and communicate with one another, these intermedial performances problematized the interactions between the human body and such new media technologies as the Global Positioning System (GPS), digital video, robotics, artificial intelligence, and email. Through the creative engagements between the performers, the audience, and various new media devices within a single performance event, intermedial performance artists are able to disorient the audience members by challenging their

perception of how these technologies relate to their own bodies and the surrounding world. In order to investigate the ways in which intermedial performance affects the audience's perception of the relationship between humans and technology, my analysis of the seven performance projects featured in this study will focus on addressing the following issues: the interplay between embodiment, technology, and space, the intersection of performance and techno-anxiety, as well as the influence of the transhumanist rhetoric of disembodiment on cyborg performance and the staging of disability.

I should note that the three issues that I plan to explore are by no means an exhaustive list of the substantive and stylistic qualities of intermedial performance in the early-twenty-first century. While each issue will be thoroughly examined within a specific chapter in this dissertation, the factor that unifies them is the primacy of the body in the audience's perception of the interactions between the human participants (which includes both performers and audience members) and the technological devices featured in the intermedial performance event. The body, as Merleau-Ponty elucidates, is the subject of perception, and thus to perceive is to render oneself present to the world through the body (2002: 239). Whether it is the spatial exploration of the city with the aid of GPS (as seen in Blast Theory's *Rider Spoke*), the techno-anxiety of confronting machines that perform autonomously, or even the uncanny encounter with cyborg performances that consist of able-bodied and disabled performers, the audience members' experience of intermedial performance is characterized by their embodied perception of the conjunction between the human body in performance and a variety of technological prostheses that may or may not be digital. Taken together, the three main issues explored in this study serve to inform the central thesis of this project, which contends that intermedial performance artists deploy what I call "critical techno-dramaturgy" as a strategy for influencing the audience's perception of the interface between humans and technology across space and time.

“Working on the dramaturgy,” as the Italian director Eugenio Barba explains, “does not only involve the text or the story that we want to tell and make visible to the spectators” (2000: 60). Instead, it also involves the structuring of scenic, technical, and performative elements in order to produce a complete dramatic spectacle. In an era where the convergence between performance and media culture has proliferated across theatres throughout the world, there appears to be a shift in the way theatre communicates with the audience. Hans-Thies Lehmann describes this shift as the “post-dramatic theatre,” which emphasizes the movement from the closed world of the traditional stage to a communicative style that directly engages with the audience’s thoughts and perceptions of the performance that transpires before them. Expanding on Lehmann’s idea of the “post-dramatic theatre,” the Dutch performance theorist Maaïke Bleeker contends that this change in the communicative style of contemporary theatre has significant impacts on dramaturgy, particularly in the context of intermedial performance. Resisting the closed and internally coherent systems of the traditional proscenium-based performance, Bleeker presents her notion of “media dramaturgies” as forms of expression that “directly engage with the modes of perceiving and thinking of the audience” (2012: 62). Inspired by the work of Barba and Bleeker on dramaturgy and its effects on visuality and perception, my concept of critical techno-dramaturgy aims to create a spectacle that challenges the audience’s perception of how humans relate to technology. In other words, critical techno-dramaturgy entails the deliberate structuring of the interplay between the human participants and the new media technologies featured on the intermedial stage in ways that destabilize the audience’s relationship with these technologies.

Drawing upon the theoretical perspectives espoused by scholars working in the fields of new media, performance studies, and the philosophy of technology, the central argument of this dissertation holds that intermedial performance artists reinvigorate the role of the human body by

deploying a critical techno-dramaturgy that mobilizes embodiment as a strategy for shaping the audience members' perception of how humans relate to technology in both the theatrical context and the social reality of quotidian life. Given that most of the intermedial performances that I will be looking at in this dissertation do explicitly incorporate the audience members as participants who contribute to the creative process (especially through their interactions with the digital and analogue technologies featured in the performance event), I will further contend that the deployment of critical techno-dramaturgy frustrates the audience members' familiarity with how they might be embodied with these technological devices. Such a de-familiarizing effect could serve to encourage the audience members to critically reflect on the ways in which new technologies, such as wireless mobile computers and artificial intelligence, might influence their embodied perception of the relationship between machines and the human being.

Apart from serving as a dramaturgical strategy for mobilizing the audience as embodied participants in intermedial performance, the concept of critical techno-dramaturgy is also an analytical tool for investigating how each of the six intermedial performances examined in this dissertation triggers a particular experience of embodied perception among the audience members. These experiences of embodied perception may range from the awareness of one's body through the interplay between embodiment, technology, and space to the fear of being supplanted by technologies that appear to perform autonomously. Moreover, the spectre of cyborgian fusion in the cyborg performances by such new media artists as Stelarc, whose body is artificially sutured to various technological prostheses and computer systems, may evoke a feeling of the uncanny among the audience members.

Besides analyzing how embodied perception operates in the six intermedial performances, I will also examine a creative performance project that directly applies the theoretical questions posed in this dissertation. Directed by Andrew Houston of the University of Waterloo Drama

Department, the creative performance project was devised as an artistic interpretation of a real-life incident of juvenile detention that resulted in the suicide of a young woman inside her prison cell. The prison guards who were monitoring the young woman by way of video surveillance cameras did not intervene, even as they saw her tying cloth ligatures around her neck. As an external collaborator on this creative performance project, I was interested in exploring the relationship between video technology and death through the creation of an intermedial performance that attempts to shed light on the circumstances that led to the tragic demise of a young woman in a tiny prison cell. Moreover, this performance serves as an example of how critical techno-dramaturgy can be applied in the production of new creative performance projects featuring a myriad of technological devices, both digital and non-digital. I will discuss the research findings from the project in the final chapter of this dissertation. My hope is that the analysis of this original performance in the final chapter will complement the main topic of this study, which focuses on the mobilization of embodied perception in intermedial performance. What follows is an overview of the key topics that will be examined in this dissertation.

Chapter Summaries

Chapter 1 surveys the history of, and the theoretical concerns pertaining to, intermediality in theatre and performance, beginning with the theoretical foundations laid down by Aristotle in his analysis of Greek drama. Aristotle theorized that the basis of drama is action, which is an imitation of life through mimesis. Drawing on Augusto Boal's re-interpretation of the Aristotelian concept of mimesis, I will examine why the mimetic action in intermedial performance does not entail a straightforward imitation of things that exist, but rather the re-creation of what Boal calls "the creative principle of created things" (1995: 1). Instead of imitating an action as it is observed in reality, Boal contends that mimesis in drama involves the

re-creation of the creative principle that brings things into being in the world. By rehabilitating the meaning of mimesis, Boal's "generative mimesis" appears to resonate with Aristotle's theorization of drama as a *poiesis*, a generative concept that describes how something passes from nonbeing into existence. This notion of *poiesis* also features prominently in Martin Heidegger's philosophy of technology. Heidegger conceptualized the essence of technology as *Gestell*, or the "enframing" of the world as "standing-reserve," which is the challenging forth of the human to reveal or "disconceal" the "truth" through the gathering together of things that would facilitate such a revelation. In elucidating the meaning of *techne*, the root word from which the modern term "technology" is derived, Heidegger explains that in ancient Greece, *techne* referred to both the skill of the craftsman and the *poiesis* of the fine arts. Therefore, he contends that art, as *techne*, involves the bringing-forth of the "truth". In contrast to the dangers of "enframing," *poiesis* does not seek to put the world on "standing reserve". Instead, it participates in a process of revealing towards the true forms of the world. For this reason, Heidegger believes that *poiesis* is fundamental to the critical reflection upon technology, as it allows us (as beings for whom being matters) to question the instrumentality of *techne* through art. In light of the role of *poiesis* in Heidegger's concept of technology, I compare his theorization of *poiesis* vis-à-vis *techne* with Aristotle's characterization of dramatic performance as a *poiesis* that is mimetic in terms of its creative imitation of reality.

Even though the Aristotelian emphasis on mimesis continues to inform contemporary performance practices, dramatists over the past two centuries have experimented with techniques that aim to either reinforce or subvert the verisimilitude of the dramatic spectacle. These techniques included the use of electric lighting and mechanically rotated cycloramas for the rendering of an immersive theatrical experience, as well as film and sound recordings that interrupt the audience's willing suspension of disbelief. In exploring the history of the

intersection of performance and technology, I examine Richard Wagner's *Gesamtkunstwerk*, or "Total Artwork," an aesthetic concept that celebrates the synthesis of different art forms to create a multimedia spectacle that immerses the audience in the mimetic world of the performance. I aim to demonstrate that while Wagner's nineteenth-century idea was innovative in terms of its fusion of visual art, mechanical technology, and architecture, his idea was an extension of Aristotle's theorization of the dramatic spectacle, which foregrounds the interplay between music, performativity, language, and the mechanical technology employed by stage machinists in the rendering of the dramatic spectacle. Despite Wagner's fidelity to the Aristotelian emphasis on mimesis, many avant-garde theatre artists of the early-twentieth century such as the early-Twentieth-century German dramatist Bertolt Brecht aimed to tear down the imaginary "fourth wall" that sustained the mimetic illusion of the dramatic phenomenon. Brecht's development of the *Verfremdungseffekt* ("Alienation effect") in his creation of "Epic Theatre" radically subverted the mimetic character of Aristotelian drama by performing the gathering of such media technologies as film and voice recordings for the purpose of generating critical ideas about society. By using technology to distance the audience members from the representational context of the performance, Brecht sought to compel them to take political action to improve the social conditions of their own lives. Building on the work of Brecht and Wagner as early exemplars of intermedial performance, the next chapter will define a conceptual framework and dramaturgical method that questions the relationship between humans and technology. I will refer to this framework as "critical techno-dramaturgy".

In delineating the analytical and dramaturgical potential of critical techno-dramaturgy, **Chapter 2** explores the co-determining relationship between human beings and technicity, as well as the development of intermedial performance. I will begin with an examination of the co-evolution of technology and humans through the thinking of such intellectual intercessors as

David Wills, Bernard Stiegler, and Gilbert Simondon. Upon establishing an understanding of the co-evolutionary relations between technics and the human, as well as Gilbert Simondon's philosophy of technology and its impact on psychic and collective individuation, I proceed to compare the theories of intermediality in performance offered by such theatre scholars and media philosophers as Freda Chapple, Chiel Kattenbelt, and Henk Oosterling with new media theorist Brenda Laurel's conceptualization of human-computer interactions through the framework of dramatic theatre. Finally, the concluding section of this chapter develops what I call "Critical Techno-dramaturgy," which is a conceptual framework that analyzes the ways in which the dramaturgical strategies employed by intermedial performance artists might affect the audience's embodied perception of human-machine interactions.

Drawing on the conceptual framework developed in the previous chapter, **Chapter 3** will explore the interplay between embodiment, technology, and space in intermedial performance and its effects on the audience's awareness of their embodied existence as they navigate the cityscape with bicycles, handheld computers, and mobile phones. Seeking inspiration from the work of Guy Debord, Michel de Certeau, and Bruno Latour, I demonstrate that the interface between new media technologies and the embodied performance of the human participants within an urban landscape underscores the heterogeneous character of intermedial performance, as every element – be they human or nonhuman – is equally important to the operation of the intermedial network. Since the turn of the century, handheld computers, mobile phones, and other locative media technologies equipped with Global Positioning System (GPS) and Radio-Frequency Identification (RFID) capabilities have transformed the way in which we perceive and interact with the city. As such, this chapter will examine the interplay between embodiment, technology, and urban space in intermedial performance and its effects on the audience's embodied perception of space as they move across the cityscape with mobile phones, iPods, and mobile

computers. The chapter also examines how critical techno-dramaturgy can be deployed as a strategy for designing and analyzing the performativity of navigating and discovering the different facets of the cityscape. Drawing on Guy Debord's urban theory, Michel de Certeau's exposition on the embodied act of pedestrianism, and Bruno Latour's Actor-Network Theory (ANT), I will explore the combinatory use of bicycles and mobile computers in Blast Theory's *Rider Spoke* (2007), as well as the production of social space through mobile text messaging in Dustin Harvey and Adrienne Wong's *Landline: Halifax to Vancouver* (2013).

Moving from the open spaces of the city and into the intimacy of the black-box theatre, **Chapter 4** interrogates the intersection of performance and techno-anxiety by looking at how intelligent machines that appear to perform autonomously might affect the audience members' perception of these anthropomorphic technological agents in relation to their own bodies. Situating the cultural effects of robotics within the theatrical context, this chapter explores the intersection of intermedial performance and techno-anxiety by looking at how intelligent machines that appear to perform autonomously might affect the audience members' perception of these anthropomorphic technological agents in relation to their own bodies. By drawing on the thinking of Ernest Becker, Søren Kierkegaard, and N. Katherine Hayles on the topics of death and anxiety as well as the "boundary dispute" that pervades human-machine interaction, I will examine the techno-anxiety that impinges on the embodied encounters between the audience members and such performing machines as the Artificial Intelligence (AI) avatar, Jeremiah, in Susan Broadhurst's *Blue Bloodshot Flowers* (2001), and the autonomous robotic dancers in French-Canadian artist Louis-Philippe Demers's *Tiller Girls* (2010). In light of the manifestation of anxiety-inducing phenomena in these intermedial performances, I argue that the audience members' perception of autonomous performing machines involves a negotiation between a secure sense of human agency and the fear of being supplanted by machine actors. My contention

is that the autonomy that the performing machines in *Blue Bloodshot Flowers* and *Tiller Girls* exhibit serves to remind the audience members of their existential finitude, an experience that reinforces their feeling of techno-anxiety over the perceived threat that autonomous machines pose to the human condition.

Building on the investigation of techno-anxiety in the previous chapter, **Chapter 5** examines how the construction of the “cyborg” as both a conceptual metaphor for and a material instantiation of human-machine “fusion” in intermedial performance could impact the prosthetic relations between persons with disability and the technological devices that they employ. As scientists and engineers such as Kevin Warwick, Hans Moravec, and Raymond Kurzweil begin to espouse a rhetoric of disembodiment that emphasizes the obsolescence of the biological body in favour of a “fusion” between the human brain and information technology (i.e., to become a “cyborg”), it seems easy to forget that for persons with disabilities, the integration of their bodies with various technological implements is not always a matter of choice. Anyone with a physical or cognitive disability would probably be aware that such technological extensions as close captioning, hearing aids, and prosthetic limbs are oftentimes a necessity rather than a choice. Furthermore, the suggestion that “cyborgian fusion” makes it possible to leave one’s biological body behind in order to exist in a disembodied union with computers tends to overlook, perhaps unwittingly, the struggles that persons with physical or psychological disabilities have to grapple with on a daily basis. In response to the rhetoric of disembodiment that informs the thinking of such prominent futurists as Kurzweil and Moravec, my contention is that cyborg performance is neither a fusion of body and technology nor a denial of the existence of the body. Instead, it resists – sometimes unwittingly so – the transhumanist rhetoric of bodily obsolescence and challenges the normative image of the ideal body (especially one without physical and cognitive defects). Reading Maurice Merleau-Ponty’s phenomenological philosophy of perception

alongside Cary Wolfe's interpretation of posthumanism, which opposes the neo-humanist fantasies of a disembodied and autonomous, even transcendental, way of being, I will investigate the ways in which embodied perception is mobilized in intermedial performance. Wolfe's rethinking of the relations between the human and the nonhuman, a perspective that considers the fundamental prostheticity of the human in its co-evolution with various forms of technicity and materiality that are radically "not-human," is pertinent to our understanding of embodied perception and the treatment of nonhuman entities in intermedial performances. In addition, the rejection of an anthropocentric view of human-machine relations would also open up the possibility of considering how "able-bodied" spectators perceive performers with disabilities in an intermedial performance setting. Looking closely at Stelarc's cyborgian experiment with the actuation of physical performance through an virtual avatar in *MOVATAR* (2000) and Petra Kupperts' production of *Cripple Poetics: A Love Story* (2010), in which two performers with disabilities draw upon the affordances of 3D tele-immersion technology in order to articulate their embodied existence as cyborgs on the intermedial stage, I will explore the ways in which able-bodied and disabled cyborg bodies are equally capable of frustrating the embodied perception of the audience members in cyborg performance.

Finally, **Chapter 6** is devoted to the discussion of a creative project that uses critical techno-dramaturgy as a strategy for shaping the perception of the audience members. This is my own project that directly applies the theoretical questions posed in this dissertation in order to examine the complicity between digital media (particularly video technology) and the mediation of death. The inspiration for the project stems from a real-life incident of juvenile detention in Canada that resulted in the suicide of a young woman named Ashley Smith, whose death was witnessed by the prison guards through the mediated gaze of video surveillance. Rendered as an intermedial performance directed by Andy Houston, this project entitled *From Solitary to*

Solidarity: Unravelling the Ligatures of Ashley Smith (2014) interrogates the human perception of incarceration and self-harm in our intensely mediated world, where even instances of death are captured on video. As the media specialist for this project, I was responsible for developing the intermedial elements of the performance. Focusing on the intermedial design of the performance, this chapter will examine how the conceptual framework of critical techno-dramaturgy facilitates the analysis of video technology as a digital memory device that archives what I call the *mediated remains* of death (i.e., the video surveillance footage that immortalizes Ashley's demise).

In the original incident on which this performance project is based, the prison guards were instructed by their superiors to remotely monitor Ashley using video surveillance in order to minimize physical contact with her. At the age of fifteen, Ashley was detained for throwing crabapples at a mailman outside her home in New Brunswick. Living in solitary confinement during her detention meant that her existence in relation to the outside world was constantly mediated through video surveillance footage reviewed by correctional services officers. Moreover, during her four-year ordeal in prison, Ashley was moved seventeen times across Canada, until she took her own life at a detention facility in Kitchener-Waterloo. In the fall of 2013, a public inquiry delivered a non-legally-binding homicide verdict on her case. However, despite the proliferation of digital and non-digital information related to Ashley's demise during the inquiry process, the public can only access the story of her life in mediated form, whether through online news and documentary coverage on her case or the surveillance footage of her life in prison. The accumulation of these media content on the Internet is akin to what Jacques Derrida terms "archive fever". Whereas Viktor Mayer-Schönberger argues for the "virtue of forgetting" in the digital age by proposing that digital media artefacts be allocated a limited "shelf life" that ensures their deletion after a certain period of time, there are significant judicial implications pertaining to the elimination of the online digital archive of video clips that attest to

the historicity of Ashley's existence as a human being. Conversely, there are also ethical considerations pertaining to the retention of the video surveillance footage that contain the mediated traces of her life and death under detention.

By juxtaposing the live performance of Ashley's time in solitary confinement with the actual archival footage depicting her struggles and eventual suicide in prison, this performance project addresses the ethical questions concerning the artistic use of material from the digital archive that contains the mediated remains of Ashley's death. Building upon Marcel O'Gorman's concept of "necromedia," which explores the collusion between death and media, as well as Rebecca Schneider's characterization of artistic re-enactment as "performing remains," I argue that the intermedial performance of Ashley's story constitutes a performance of the mediated remains of death. My contention is that the actual surveillance footage that are presented on the stage are complicit in not only the digital archiving of Ashley's death but also the act of reinterpreting her predicament through the interplay between digital media (especially video technology) and the theatrical performance of thirteen actors who were not previously acquainted with the case. Given how the auditory and visual senses of the audience members might be challenged by the intermedial elements employed in the performance of *S2S*, I will also discuss the ways in which this embodied and multi-sensorial experience might affect their perception of death in the digital age. Consequently, I will conclude this dissertation by taking a brief look at some of the issues that have not been addressed in this dissertation due to the constraint of space. Additionally, I will be offering an overview of a new creative project that will apply the concept of critical techno-dramaturgy in order to investigate the role of embodied labour and the perception of time in digital communication.

Chapter 1:

Performance and Technology: A History of *Techne* and *Poiesis* in Dramatic Theatre

“The ‘Deus ex Machina’ should be employed only for events external to the drama, for antecedent or subsequent events, which lie beyond the range of human knowledge, and which require to be reported or foretold; for to the gods we ascribe the power of seeing all things.

Within the action there must be nothing irrational. If the irrational cannot be excluded, it should be outside the scope of tragedy.”

- Aristotle, *Poetics*, XV, 1454b.

At the 2009 staging of Euripides’ tragedy, *Medea*, at the Greek Theatre at Syracuse in Italy,¹ the audience members were treated to a spectacular event during the denouement of the play. Perched above the theatrical cyclorama or scenic backdrop, the sudden appearance of an illuminated chariot hauled by a crane marked the godly intervention in the dramatic proceedings known by its Latin name as the *deus ex machina*, which literally means “god from the machine”. *Deus-ex-machina* refers to the timely but unexpected appearance in Greek drama, of a god who is lowered onto the stage by a crane to provide “an artificial or contrived solution to an apparently insoluble difficulty” in the plot (Britannica 2007: 1). In addition to the use of phallic props and painted drapery depicting the scenery of a dramatic setting, the *deus-ex-machina* epitomizes the intersection of performance and technology in the ancient Greek theatre.

The appearance of this mechanical contrivance – a chariot sent by the gods to rescue Medea who had murdered her children – at the denouement of Euripides’s *Medea* was a characteristic feature in his dramatic oeuvre. However, Aristotle was critical of the deployment of

¹ The Polish film and theatre director Krzysztof Zanussi directed this 2009 production of *Medea* at Syracuse.

the *deus ex machina* as a dramatic device that abruptly resolves the conflict within the play. He was not so much troubled by the technological character of the device (the use of a crane to lower down and life up an actor playing a god) than by the logical integrity of its incorporation into the drama. For Aristotle, the use of the *deus ex machina* has to fit into the logic of the dramatic action. What matters here is the rational connection between the device and the preceding events in the play rather than the obtrusive appearance of a mechanical contraption towards the end of the drama. But in light of Aristotle's inclination towards the rational deployment of the *deus ex machina* in fulfilment of its role as a device imbued with the benevolent power of mercy, the implied tension between technology and humans – both in the theatre and in everyday life – was not lost on the ancient Greek audience.²

As Chris Salter observes, “technology already revealed itself on the fifth century Athenian stage as *machinae* intimately bound up with the fate of human beings” (2010: xxii). Manifested in the *deus ex machina* is that omniscient character of the gods that Aristotle mentioned in his criticism of the device, as the crane-like apparatus ferrying a god is lowered into the scene to “solve the moral quandaries created by human mistakes” (Salter 2010: xxii). And it is drama as a public art form in ancient Greek society that captures this relationship between the transcendent power that technology appears to embody and the fallibility of human endeavours. Since its inception in democratic Athens in the fifth century BCE, dramatic theatre provided the ancient Greeks with a “civic platform” on which the “dramas between humans and machines –

² In reviewing the 2009 performance of *Medea* at Syracuse, Catarina Barone criticizes what she perceives to be an extravagant construction of the final scene in the play. Claiming that the finale serves to gratify “the audience’s lust for spectacle,” Barone contends that “projecting a light on that glossy [backdrop] to represent the shining chariot of the Sun” would have been a “less trite solution” compared to having Medea appear “above the palace among clouds of smoke, riding a chariot” (“Didaskalia” 2011). Barone’s comment appears to echo the Aristotelian suspicion of the *deus ex machina*, as evidenced by her preference for a simpler and less (technologically) sophisticated resolution to the intensity of the dramatic action. Nevertheless, she does not repudiate the use of technology in the play – light projection is indeed a technological medium. That a modern theatre critic should characterize the depiction of the *deus ex machina* in its full mechanical form as a “trite solution” serves only to foreground the interplay between humans and machines in the theatre – a relationship that is fraught with tension.

technology's transcendent embodiment as the gods and, simultaneously, its immanent demonstration of the constructed mechanisms of the human world" could be played out in front of an audience of citizens (Salter 2010: xxii). We should note that theatres in ancient Greece were open-air structures, and they did not exist in isolation from the social, political, and religious functions of the local community. Theatre performances in the western tradition, as Erika Fischer-Lichte elucidates, were typically held in "two kinds of venues: (1) those spaces which were set up expressly in order to serve as theatre buildings and (2) those spaces which were created to serve a different practical function, but are used temporarily or repeatedly as a theater" (1992: 97). As we will see in Chapter 3 of this study, the venues within which theatre can be performed are varying in structure and purpose, and these may include the many hidden corners, or what I call "found spaces," in a city. But in the context of the classical world, the theatres in ancient Athens and Thebes were well integrated into the wider congregation of political assemblies, religious temples, and marketplaces. Theatre performance, like the technologies that provide order and structure to the city, was not only *about* life; it was an important part *of* it.

While the production of drama offered an intellectual avenue through which to interrogate the socio-political challenges faced by the inhabitants of the *polis* (the city), it also problematized the relationship between humans and technology. If technology embodied the transcendent power of gods who were responsible for turning the fate of beleaguered characters on the stage, the ancient Greek theatre audience – particularly the Athenians – might have considered how this power was similarly expressed in both the architectural and political structures of their city. The use of technology in ancient Greek performance was not simply ornamental. Rather, it served to remind the audience of how technology is capable of structuring the world in which they lived, in the same way that machines altered the dramatic action on the stage. In this sense, intermediality was not a supplement to ancient Greek drama but a constitutive part of it. Through the use of

such technologies as mechanical cranes for hoisting, rotating dais for the rapid change of scenic backdrops, as well as masks for the portrayal of characters, drama in ancient Greece comprised an assemblage of media elements that facilitated the rendering of the dramatic spectacle.

In an attempt to understand how the relationship between humans and technology has developed in the theatre, this chapter will survey the history of, and the theoretical concerns pertaining to, the intersection of performance and technology. I begin with an investigation of the role of technology in ancient Greek theatre before proceeding to look at how intermedial performance subverts the mimetic framework proposed in Aristotle's *Poetics*. Drawing on Augusto Boal's re-interpretation of the Aristotelian concept of mimesis, I examine why the mimetic action in intermedial performance does not entail a straightforward imitation of things that exist, but rather the re-creation of what Boal calls "the creative principle of created things". Instead of imitating an action as it is observed in reality, Boal contends that mimesis in drama involves the re-creation of the creative principle that brings things into being in the world. By rehabilitating the meaning of mimesis, Boal's "generative mimesis" appears to resonate with Aristotle's theorization of drama as a *poiesis*, whereby something passes from nonbeing into existence. In light of the generative potential of dramatic theatre as a form of *poiesis*, I will proceed to compare the Aristotelian understanding of *poiesis* with Heidegger's philosophy of technology, focusing especially on how the concept of *techne* relates to *poiesis* as a creative means by which to critically reflect upon technology. Having examined how dramatic theatre operates as *poiesis*, the final two sections of this chapter will explore the intermedial experiments of Richard Wagner and Bertolt Brecht in the theatre, as well as the interplay between performance and technology in the twentieth century and its concomitant effects on the audience members' perception of human-machine relations.

1.1 Embodying Technology in Ancient Greek Theatre

As I have suggested in the opening section of this chapter, the conjunction between performance and technology is certainly not a recent phenomenon. Technological innovations were central to the ancient Greek Theatre. This point is evidenced by the semi-circular architecture of the amphitheatre. The construction of the theatre upon the natural contours of a hill overlooking the sea resulted in a design that resembles one half of a bowl, with terraces – upon which the audience members took their seats – cascading down the slope towards the circular *orchestra* or performance space at the bottom of the structure. The semi-circular design of the ancient Greek theatre affords every spectator an opportunity to see and hear the performance on the stage, and to do so without straining his or her visual and auditory senses. Besides ensuring that everyone in the audience could access the drama without hindrance, technology also played a vital role in the dramaturgical strategies deployed by the producers of ancient Greek drama. For instance, set designers made use of wooden cranes for the hoisting and lowering of actors who interrupt the dramatic action on the stage as part of the *deus ex machina* device that unexpectedly resolves a crisis within the plot of the play. Despite Aristotle’s reservations about the use of the device in dramatic Tragedy, the integration of a mechanical contraption into the unfolding action on the stage represents a *co-relation* between technology and live performance. What is significant about the *deus ex machina* is not only its abruptness as a plot device, but also the act of strapping an actor onto a wooden crane operated by stagehands. This interaction between humans and machine is predicated upon action, and as Aristotle theorizes in the *Poetics*, it is action that makes dramatic performance possible.

The word “theatre” in English originates from the Greek, *Theatron* (θέατρον), which means “watching place” or “the place of seeing”. The *Theatron*, according to Chris Salter, “was both a physical and perceptual space ordered by technology” (2010: xxii). As a physical space,

the ancient Greek theatre presented the spectator with a tangible space on which to sit down and witness the unfolding of the dramatic action on the stage. And it is through this visual and acoustic relationship that each audience member shares with the stage that the theatre as *theatron* becomes a perceptual space that mediates between the realms of the drama and the audience. With its unique architecture designed to enhance the visual and auditory experience of the drama, coupled with the deployment of *machinae* as part of the dramatic *mise-en-scène*, the ancient Greek theatre was capable of affecting the audience's embodied perception of technology's role in structuring the world within, and outside of, the theatre. Apart from expressing its transcendent power through the *deus ex machina*, "technology in the performance arts," as Salter succinctly articulates, also reveals itself "in how – through craft, skill, construction, or making (what the Greeks called *techne*) – it orders the world (*logos*)" (2010: xxii). Rather than referring to "reason" or "speech," Salter's use of the word *logos* follows the definition of the term by the pre-sophist philosopher, Heraclitus, who sees *logos* as "a principle of order and knowledge" (*Cambridge Dictionary of Philosophy* 1999). Heraclitus maintains that this principle is not static but should be understood as "the law of change, or at least its expression" (*Cambridge Dictionary of Philosophy* 1999). Characterizing technology's ordering of the world as *logos* would allow us to consider how the *techne* (i.e., the craft and skill required to make things) of human beings can change the world and the way we perceive it. At the same time, however, we should resist the temptation to think of the ordering system of *techne* in the ancient Greek theatre in strictly rational terms.

In fifth-century Athens, a festival was held annually in honour of the god of drama, "Dionysus," to whom the Theatre of Dionysus was dedicated. Every year, playwrights from all over the ancient Greek world, including such great names as Aeschylus, Sophocles, and Euripides, would stage their plays at the Theatre of Dionysus during the Dionysia Festival. The

British professor of ancient Greek theatre, David Wiles, has researched and written on the archaeological evidence found at such historical sites as the Theatre of Dionysus in Athens and the Theatre of Epidauros at the Gulf of Aegina. He notes that if anyone were to visit the Theatre of Dionysus today, he or she can only access it from the main road, and through a boundary wall that encloses the sanctuary. Once inside the sanctuary, the modern visitor will encounter “a semicircular *orchestra* (or “dancing floor”) and stage built in the Roman period, and the crumbling remains of a stone auditorium built in approximately 330 BC” (Wiles 2000: 99, 100). The orchestra and stage that we see today at the Theatre of Dionysus were part of the Roman refurbishment of the structure during the Roman rule of Athens. The symmetry implied in the arrangement of orchestra and stage in relation to the three-tiered *theatron* where the audience members sat may convey a sense of order and rationality. However, as Wiles cautions, it is not easy for us “to extrapolate from these traces some sense of the space in which the classical dramatists presented their plays” (2000: 100). If we look at the restored Theatre of Epidauros today, for instance, its symmetrical and orderly geometric form might lead us to think of it as representative of the ancient Athenian conception of space. But the construction of the Odeon building in the fifth century BCE by the Athenian statesman, Pericles, to the right of the stage at the Theatre of Dionysus seems to contradict the assumption of structural symmetry.

Wiles believes that the Odeon, with its huge size and exotic ornamentation, shared both an architectural and a functional relationship with the Theatre of Dionysus, such that the performers could move freely from the stage to the building and back, shuttling from one space to another (2000: 102). Art and function seem to overlap in the ancient Greek theatre. The fact that the Odeon is positioned on only one side of the stage suggests that symmetry was not the primary concern for the ancient Athenians. “The theatre at Athens,” Wiles writes, “was not planned from the outset but evolved, and a natural hollow was gradually transformed into a

roughly semicircular form” (2000: 102).³ Indeed, the semicircular bowl offers the advantage of good sightlines and acoustics for every member in the audience while conveying a general sense of “democratic equality” (2000: 102). However, as Wiles reminds us, we must not assume that perfect geometry informs the theatrical consciousness of the ancient Greeks, for the performance space of the Classical period was “temporary, disorderly and constantly changing” (2000: 103).⁴ This “on-going experimentation with space” in the ancient Greek theatre appears to cohere with the experimentations with dramatic form in Greek Tragedy, as “Dionysiac disorder undermines the best human attempts at rational forward planning” (2000: 103). Order and disorder are characteristic traits of the ancient Greek theatre. The *techne* (that is, the craft and skill required to make things) involved in the production of the dramatic spectacle is embodied by the technological changes that occur during and between performances. These changes, which may range from the construction of revolving cycloramas at the back of the stage to the addition of convex mirrors that reflect the glare of sunlight, serve to alter the original appearance of the theatrical space. In this way, the architectural order of the ancient Greek amphitheatre is constantly undermined by the technological interventions that facilitate the creation of the dramatic spectacle.

The architecture of the ancient Greek amphitheatre and the technological devices employed in ancient Greek dramas play a critical role in complementing the embodied performances of human actors. Wooden cranes (notably the *mechane* used in the *deus ex*

³ David Wiles remarks that the excavated remains of four small theatres that survive in the demes of Attica reinforce the claim that “the Athenians did not make architectural symmetry a priority” (2000: 103). He believes that it is for this reason that the “perfect geometric form” of the Theatre of Epidaurus seems to be “a misleading guide to the [architectural] practice of the classical period” (2000: 103).

⁴ The Classical period in ancient Greece generally refers to the 200 years that span across the fifth and fourth centuries BCE. This period precedes the Hellenistic age that comes after the reign of Alexander the Great. The term “Classical Age” is what the historian of ancient Greco-Roman culture Thomas R. Martin believes to be “the modern designation of the period from about 500 B.C. to the death of Alexander the Great in 323 B.C.” (1996: 94).

machina), rotating cycloramas, masks, and the architectural elements of the stage all serve to extend the performers technically. But among these technological innovations in the ancient Greek theatre, the Dionysiac mask offers the clearest example of the embodiment of technology in the dramatic arts. In Plato's dialogue, *Ion*, Socrates engages in a philosophical discussion with Ion of Ephesus, a professional rhapsode who has just returned from the Asclepius festival at Epidaurus. Socrates interrogates Ion in order to find out whether the latter's performance of Homer's epic poetry is informed by skill and knowledge or by divine inspiration. Ion tells Socrates that the gods inspire his performance of Homer, such that whenever he performs "a tale of woe, [his] eyes are filled with tears; and when it is of fear or awe, [his] hair stands on end with terror, and [his] heart leaps" (*Ion* 535c). However, upon further probing by Socrates, Ion claims that even while he is performing, he can observe whether or not his performance has successfully affected the audience (*Ion* 535e). By suggesting that he is conscious of the audience's reaction to his act, Ion complicates his earlier claim that his performance is *divinely* inspired. Because he did not perform with a mask on his face, Ion could observe the audience throughout his act. Rather than being inspired by the supernatural powers of divine entities, his performance is modulated by his interpretation of the audience members' reaction to his actions on the stage.

The Dionysiac mask used in ancient Greek drama was meant to "prevent the audience seeing actor against role," and also to "increase the concentration of the actor by restricting his external vision" (Wiles 2000: 153). The mask in ancient Greek theatre was incorporated as part of the actor's embodiment. Rather than focusing on the facial expressions of the actor, the audience concentrated on the embodied performance of the particular character that the actor is playing. But Plato's belief in the separation of mind and body implies a privileging of the head as the seat of the human mind and soul. As such, Plato – through Socrates – regards Ion as merely an interpreter of the poet, Homer, who is in turn an interpreter of the gods (*Ion* 536a). In this

sense, Homer represents the mind, while Ion represents the body that performs and mediates between the thought of the poet and the reception of that thought by the audience. Following this logic, Ion's is a lesser skill as compared to that of Homer. As a result of Platonic dualism, in which mind and body are separate, the mask in the western theatrical tradition "has functioned as a mode of concealment" (Wiles 2000: 153). But during the halcyon days of ancient Greek theatre in the fifth century BCE, which precedes the time of Plato, the mask was regarded more as an embodied technology than a mode of concealment (Wiles 2000: 153).

As the British theatre director Peter Hall explains, the ancient Greek theatre mask disciplines the body, as the actor is required to control his physical gestures (only males were allowed to be actors in ancient Greece) while acting with a mask. In most performances, the actor would convey the character's emotions through the mask, which is often supplemented by his bodily movements or the words that he utters on the stage (2000: 28). In this way, the mask is incorporated as part of the actor's embodiment. However, Hall is quick to clarify that the mask in ancient Greek theatre "is not a device to enhance visibility in the large Greek amphitheatres; [...] [n]or is the mask a megaphone to increase audibility (2000: 29). Rather than being a tool for visual or auditory amplification, "[the] mask is an instrument of communication" (2000: 29). Hall believes that it is through the mask that the ancient Greek actor is able to convey the meaning of the play. When combined with the embodied actions of the performer, the mask serves as a media technology for communicating meaning to the audience. But the mask, despite its intricate design and features, does not express meaning by itself. "A great mask," as Hall elucidates, "[...] has no expression. It is ambiguous" (2000: 24). The meaning that the mask communicates to the audience members is reinforced by the embodied sounds and gestures that the actor delivers in the performance. As Hall notes, "[the] sound of a scream presented as part of the body language of hysteria makes the mask scream," whereas the "sound of ribald laughter makes the mask

laugh” (2000: 24). As such, the actor’s voice and the physical gestures that he performs contribute to the specific meaning that the mask conveys. And it is in this way that the mask becomes an embodied technology.

Prior to Plato, the classical world of ancient Greece shared the same holistic understanding of the human being as the eastern tradition, whereby the use of masks (*kothurnoi*) in performance functioned not as “a negative mode of concealment,” but rather “a positive mode of embodiment” (Wiles 2000: 153). Greek society before Plato did not regard the mask as a device that concealed the face, and therefore hindered thought and creativity. Instead, as David Wiles points out, “the mask helped the body to function as a totality” (2000: 153). The ancient Greeks believed that the body was “a centred space” (2000: 154). This means that actions did not originate from the autonomous ego of the individual but from the body itself. “The masked Greek actor,” as Wiles elucidates, “used the body to demonstrate a set of impulses” (2000: 155). It is through the totality of the performer’s body in motion on the stage that the mask becomes an embodied technology in the performance arts of the ancient Greeks. But having actors perform with masks on their faces does not preclude the interactive potential of ancient Greek drama. Physical interaction exists between the performers standing down at the *orchestra* and the audience members at the *theatron*. As the actors and the chorus members move about the performance space, they need to pay attention to the distance between them and the audience. If an actor stands too close to the edge of the *orchestra*, the heads of the front-row audience members would obscure the form of his body (Wiles 2000: 106). At the same time, by standing outside of the acoustic zone where the propagation of sound waves originating from his vocal chords would have the farthest reach, the actor’s voice might not be audible to the spectators seated at the upper sections of the *theatron* (Wiles 2000: 106).

Even though ancient Greek theatres traditionally contained a low wooden structure located at the back of the *orchestra* called the *skene*,⁵ this structure did not directly affect the action on the stage. By contrast, the proscenium arch found in modern theatres is a device that influences the audience's ocular perception, as it imposes a visible frame upon the action on the stage. The proscenium frame of the nineteenth-century theatre sets the audience up as a *voyeur* and an eavesdropper who observes and hears the action on the stage, particularly through the invisible fourth wall that separates the worlds of the drama and the audience members. This division of space would diminish the level of embodied interaction between the performers and the audience in the production of dramatic performance.

Without the presence of a proscenium arch in the ancient Greek theatre, the actors and the members of the chorus could calibrate their movements in order to maintain a dynamic visual and auditory relationship with every audience member. Such an endeavour draws upon the proprioceptive and kinaesthetic awareness of the performer who possesses the skill to control the body's motion in time and space, or to balance the body's weight as it rides on the *mechane* that constitutes the *deus ex machina*. This ability of the ancient Greek performer to work *with* the architectural and technological implements that bring the dramatic spectacle into being exemplifies the interplay between the human and nonhuman participants in the theatre event. In exploring the intersection of performance and technology as a form of *poiesis*, we need to understand the structural qualities of drama as conceived by Aristotle. To this end, the next

⁵ As Chris Salter clarifies, the *skene* was originally used for storage and costume changes. Because it was a low structure, the audience could see the natural landscape or the sea that extended beyond the theatre. However, in the later Hellenic and Roman periods, the construction of higher walls meant that the *skene* had become a scenic backdrop. With such an imposing structure looming in the background as the drama unfolded on the stage, the audience's perception of the dramatic experience was thus altered from that point in history. In addition, Salter believes that a series of columns located above the *skene* called the *proskeniium* anticipated the sixteenth-century Italian development of the proscenium arch, which serves to frame and limit the theatrical stage (2010: 113).

section will examine the ways in which Aristotle's theory of the "Four Causes" informs his theorization of the elements of dramatic performance.

1.2 The Causal Relations of Aristotle's Six Elements of Drama

How does drama come into being? Many of us who have been to theatre performances would recognize such distinctive features as plot and character in any given play. In his *Poetics*, Aristotle delineates the six elements of drama in order of precedence: Plot, Character, Thought, Diction, Song, and Spectacle. These six elements do not exist independently of one another. Rather, they affect each other through a pair of causal relationships based on form and material. In his reading of *Poetics*, Sam Smiley observes that these six elements relate to one another in a way that corresponds to the notion of causality espoused by Aristotle in his books, *Metaphysics* and *Physics*. In both texts, Aristotle describes the notion of causality in procedural terms. All causes, he argues, are "beginnings," which is "to be the first thing from which something either exists or comes into being or becomes known" (*Metaphysics* 1013a19). To know the cause of something is to understand why and how it has come into being.

As Aristotle explains, the cause is "that as the result of whose presence something comes into being" (*Metaphysics* 1013a21). There are four causes that set in motion the coming into being of things. These are the formal cause, the material cause, the efficient cause, and the end cause. The formal cause refers to "the form or the archetype" to which a particular thing relates (*Physics* II.3). For instance, a house has as its formal cause a certain notion of "houseness". The material cause points to "that out of which a thing comes to be and which persists," in other words, what the thing is made of (*Physics* II.3). The examples that Aristotle provides include the bronze of a statue and the silver of a bowl. As for the efficient cause, it pertains to "the primary source of the change or coming to rest" (*Physics* II.3). The efficient cause is essentially that

which causes something to change, such as the artist who paints a painting or a dramaturge who weaves together the various elements that produce the dramatic spectacle. Consequently, the end cause is “that for the sake of which a thing is done” (*Physics* II.3). It is the *telos*, or the end for which something is done or made. In the case of dramatic performance, we could say that the end cause is to create an experience for the audience to both enjoy and critically reflect upon. But how are the six elements of drama affected by the Aristotelian notion of causality?

According to Sam Smiley, the progression from Plot to Spectacle among the six elements of drama signifies a causal process that emphasizes form and structure. Each preceding element is therefore the formal cause of the subsequent element in the list. Understood as such, Smiley contends that playwriting and the production of drama involve the structuring of action in a play. He goes on to explain the meaning of each element and how they fit into the process of formal causality, beginning with Plot. The Plot, Smiley explains, “is the organization of an action, the arrangement of the sequence material into a whole” (1971: 8). The Plot offers the structure within which Character operates, while the character “provides the most important material to plot” (1971: 8). What we see here is a causal relation that is reciprocal in nature. The Plot is the formal cause of Character, which is in turn the material cause of the plot. What this means is that the reversed progression from Spectacle back to Plot represents a process of causality that prioritizes the materiality of the elements. Moving down the list of elements, we see that “Thought amounts to everything that goes on within a character” (1971: 8). Thought is the form of diction, which provides the material for thought to exist. Diction, in Smiley’s interpretation of Aristotle’s definition, refers to the words of the play that “consists of individual sounds,” whereby diction is the form of sounds, and sounds are the matter of diction (1971: 8). The fifth element, Melody, represents “the music of the human voice,” which may also include the use of musical accompaniment or atmospheric sounds (1971: 8). Finally, the Spectacle refers to “the physical

actions of the characters that accompany the sounds and words plus all the details of the physical milieu – setting, lights, props, costumes, and makeup” (1971: 9). In other words, the Spectacle embodies the performance in its entirety as a visual, auditory, and kinaesthetic phenomenon.

For the playwright, the formal causality among Aristotle’s six elements of drama takes precedence over the material causality among them. The playwright’s concern is to ensure the coherent organization of the actions – and their attendant features like character and diction – in the performance. However, in terms of the actual making of performances, the dramaturge and the members of the production team would first consider the material causality among the six elements of drama before the formal causality. As Smiley notes, “theatre artists normally consider spectacle first, then the other elements in ascending order” (1971: 9). Playwriting and performance making may be intertwined, but they operate on somewhat different premises. The playwright’s purpose is to facilitate the audience’s understanding of how the actions in a play are organized as a logical and meaningful totality. For the dramaturges and theatre producers, their focus is on the ways in which the visual, auditory, kinaesthetic, and narrative elements of the performance are woven together in the rendering of a pleasurable, and provocative, experience. As such, in order for dramatic theatre to pass from nonbeing into existence, playwriting and performance making have to work “hand-in-hand”. “Theatre,” as Smiley reminds us, “doesn’t come into being unless performed live onstage. In script form, a play remains merely a potential work of art” (1971: 11). How that potential might be unleashed would depend on the craft and skill of the dramaturge and the theatre artists (including the designers, actors, stagehands, and technicians) who bring the performance into being on the stage.

Even though Aristotle appears to prioritize the formal and material causalities of production in the six elements of drama, theatre performance also involves the collective labour of both human and nonhuman agents in the creation of the dramatic spectacle. These human and

nonhuman entities – which comprise the *mechane*, stage sets, performers, and audience members – possess the agency to affect the presentation of the spectacle in time and space. Consider, for example, the deployment of the *deus-ex-machina* in the 2009 staging of *Medea* at Syracuse in Sicily. Had the production team decided not to use a mechanical crane to hoist the actor playing Medea up to the top of the scenic backdrop but shine a light on that spot instead, the audience’s experience of the theatrical phenomenon at the denouement of the play would have been remarkably different. Rather than foregrounding the material embodiment of the *deus-ex-machina* in the technological form of the *mechane*, the transcendent power of the gods in changing the fate of human beings would be symbolically represented by the spot of light that illuminates the top of the backdrop. What this suggests is that the “efficient cause,” marked by the dramaturgical decisions of the production team, is capable of altering the “end cause” – that is, the audience’s perception of the *deus-ex-machina* as a physical apparatus and its dramatic purpose at the denouement of Euripides’s play. Following the logic of Aristotle’s “Four Causes” and how they relate to the six elements of drama, it seems that the human and nonhuman agents in action constitute the “efficient cause” of performance, whereas the “end cause” is embodied by the enactment of the spectacle in its totality (with actions, performers, machines, lighting, and music). But Aristotle is cautious about the role of spectacle in the making of drama.

In the *Poetics*, Aristotle explains that since the dramatic representation of an action on the stage is “performed by living persons, it follows at once that one essential part of a tragedy is the spectacular effect, and, besides that, song-making and diction” (1449b). Spectacle, in conjunction with music and language, is a constituent element of dramatic production. However, Aristotle also clarifies that despite its effectiveness in enriching the performance of tragedy, spectacle is “quite foreign to the art and has nothing to do with poetry” (*Poetics* 1450b). At first glance, this claim that spectacle has nothing to do with poetry might strike us as odd, especially given that the

production of drama relies on poetry as a kind of *Poiesis* (Ποίησις). In the *Symposium*, Plato reveals the original sense of the word *poiesis* as the bringing-forth from concealment into light, “for of anything whatsoever that passes from not being into being the whole cause is composing or poetry; so that the productions of all arts are kinds of poetry, and their craftsmen are all poets” (205b, 205c). That the words “craftsmen” and “poetry” should coincide within the same sentence about the production of the arts highlights the ancient Greek understanding of *Techne* (τέχνη) as the name for “both the activity of the craftsman who shapes a vase and that of the artist who molds a statue or writes a poem” (Agamben 1999: 60). We will return to this concept of *techne* as the dual-expression of skill and creativity later in this chapter, when we look at Martin Heidegger’s philosophy of technology and how it relates to *poiesis*. Returning to the treatment of spectacle in the *Poetics* for now, we would do well to remember that Aristotle’s focus is on the art of the poet who creates the tragic drama through a weaving of actions, characters, thought, diction, and song as a textual score for the final spectacle on the stage.⁶ Besides, his discussion of spectacle is further complicated by the second claim that “the effect of tragedy does not depend on its performance by actors” (*Poetics* 1450b).

For Aristotle, the effect of tragedy resides primarily in the plot, particularly in terms of how the actions in the play evoke fear and pity among the audience. While he concedes that this arousal of fear and pity may “sometimes result from the spectacle,” he nonetheless insists that what marks the “better poet” is the triggering of these emotions by “the actual arrangement of the incidents [i.e., the plot]” (*Poetics* 1453b). Spectacle may be foreign to the art of poetry, and for

⁶ The use of textual scores in dramatic performance throws up the question of “compliance” with the intentions of the playwright as poet. As the American dramatic theorist William B. Worthen points out, the score could be seen as a way of ensuring the textual consistency of the play as it is performed on the stage. However, he sees this imposition of a textual consistency as an expression of “the metaphoricality of the *score* itself” (2010: 11). While the presence of the score seems to suggest that the play exists on the page, Worthen contends that the ways in which it is actually used in the theatre “tend to resist the force of the *score* metaphor” (2010: 11). Rather than a single score, theatre artists divide the main score into parts that are distributed throughout the production team, and each of these parts are then individually annotated, rearranged, rewritten, and sometimes, discarded altogether.

the poet, it may be the least artistic out of the six elements of drama. However, for the dramaturge and other theatre artists whose principal task is to bring the performance into being on the stage, spectacle is the material with which they work to produce the theatre event. Then again, should the spectacle be seen as a straightforward material enactment of the dramatic text, or should it be treated as the embodiment of *poiesis*, in the same way that the activity of the poet constitutes a *poiesis*? “Stage performance,” as the dramatic theorist William B. Worthen argues, “is not built from *the text* [e.g., the canonical script for Euripides’s *Medea*], but from many texts, scripts that are cut, rearranged, and annotated in different ways as part of the process of making the performance” (2010: 11-12). Worthen believes that the dramatic text should be understood as a metaphor for the actual performance rather than an imposition of textual consistency that hinders the creativity of the theatre artists that bring the play into being on the stage. Indeed, there are some playwrights who insist that the performance of their work must correspond with the stage directions provided in the dramatic text. For this reason, Worthen sees the actual use of the textual score in the theatre as a resistance against “the force of the *score* metaphor” (2010: 11). While tensions may arise between the playwright and the production team, these relational strains do not diminish the role of theatre artists in creating an artwork that is as poetic as the poetry that flows from the tip of the poet’s quill.

Aristotle, in acknowledging the importance of theatre artists in the rendering of the spectacle, suggests that in terms of “achieving the spectacular effects the art of the costumier is more authoritative than that of the poet” (*Poetics* 1450b). Depending on which translation of the *Poetics* we refer to,⁷ the artistic authority over the creation of the spectacular effects of dramatic

⁷ According to Samuel Henry Butcher’s 1902 English translation of the *Poetics* from the original version in ancient Greek, Aristotle accords the “machinist” with the artistic authority over the spectacular effects. In William Hamilton Fyfe’s 1932 translation, however, it is the “costumier” who possesses the artistic authority over the poet. This study draws on the translations by both Butcher and Fyfe.

performance seems to be vested in the costumier or the machinist. These are vital roles in any production team, as they are part of the lifeblood that keeps the performance alive. Whereas the poet may work independently in organizing the actions in a play, it is the collective effort among human and nonhuman agents that actually brings the play into being through performance. Having explored the six elements of drama and its causal relations, the next section aims to understand Aristotle's claim that dramatic tragedy is the "imitation of an action". In particular, we will look at how the Aristotelian concept of *mimesis* operates in dramatic performance and also explore the Brazilian theatre director Augusto Boal's reinterpretation of this concept.

1.3 Mimesis as Re-Creation: Igniting the "Creative Principle" in Dramatic Theatre

The Aristotelian understanding of ancient Greek Tragedy is rooted in the concept of *mimesis*. In the *Poetics*, Aristotle defines Tragedy as the imitation of an action rather than the qualities and experiences of individual human beings (VI, 1449b). Tragedy cannot exist without action. But what exactly does Aristotle mean by the imitation of an action? In theorizing the dramatic phenomenon, the British theatre critic Martin Esslin argues that *mimesis* is the basis of action found in almost all types of drama: "what makes drama drama", Esslin writes, "is precisely the element which lies outside and beyond the words and which has to be seen as action" (1976: 14). Esslin's definition of drama is reminiscent of the way in which Aristotle described ancient Greek tragedy as the "representation of an act which is serious, complete, and of a certain magnitude" (qtd. in Halliwell 1987: 37). This magnitude that Aristotle mentions in relation to tragic drama pertains to the ancient Greek perception of size and proportion as indicators of beauty. But what is crucial here is not the magnitude of the drama (whether it is long or short). Rather, the emphasis is on the action contained within the performance of a play, for the Aristotelian understanding of tragedy is, as Stephen Halliwell reminds us, a form of

“dramatic enactment, not narrative” (1987: 37). Hence, there are significant differences between the communicative strategies of dramatic performance and those of fictional narrative.

Keir Elam, in his study of the semiotics of the theatre, distinguishes between the poetics of drama and that of narrative fiction by referring to Aristotle’s separation of representational modes into *diegesis* (narrative description) and *mimesis* (direct imitation). Most fictional narratives, as Elam explains it, tend to point the reader towards an “imaginary ‘elsewhere’ set in the past [or the future in science fiction narratives] and which has to be evoked [...] through predication and description” (1980: 67). Descriptions in fictional narratives provide the reader with an interpretive framework that facilitates his or her understanding of the representative world that the text conjures. The narrator mediates between the reader and the fictional universe. Dramatic worlds, however, are presented to the spectator as “hypothetically actual” constructs in the theatre. The spectator sees the unfolding of the dramatic action within the “here and now” of the performance, as there is no mediation by a narrator. “Dramatic performance, as Elam elucidates, “metaphorically translates conceptual access to possible worlds into ‘physical’ access, since the constructed world is apparently *shown* to the audience – that is, ostended – rather than being stipulated or described” (Elam 1980: 67-8). It is the ostension of constructed worlds in dramatic performance that distinguishes the poetics of drama from that of fictional narrative. Whereas the rendering of constructed worlds in fictional narrative requires the facilitation of *diegesis* or narrative description, the ostension of the represented world in drama relies on *mimesis* or the direct imitation of actions on the stage.

As William B. Worthen notes, the instruments of theatrical performance – bodies, technology, and space – are dynamic vehicles of signification. Just by being present on the stage, Worthen explains, “they *mean* already, apart from their configuration in and by the performance” (2010: 11). In contrast to the invocation of possible worlds in narrative fiction, which comes into

being only when they have been partially or fully described, Keir Elam observes that the “dramatic world is assumed by the spectator to exist before he knows anything about it” (1980: 68). The spectator encounters the world of the dramatic performance *in medias res*. Therefore, he or she can only make sense of the characters, the specificities of the set design, and the spatio-temporal significance of the play during the course of the performance. There is also an element of self-reflexivity in drama, as dramatic worlds are “revealed through the persons, action and statements which make them up, and not through external commentary” (1980: 68). Elam argues that it is this self-reflexive quality of the dramatic world that allows it to be “‘embodied’ onstage by actors and set” (1980: 68). The actors and the stage, which includes all the material technology needed to render the dramatic spectacle, are literally ostended, as they are part of the physical world. As for the hypothetical world to which the drama alludes, it is ostended in the metaphorical sense through the actors and stage apparatuses that are involved in the presentation of that artificial world on the stage. In other words, the concept of *mimesis* is mobilized in dramatic theatre “through ostension of the represented world” (Elam 1980: 69). The dramatic world is set up as a “hypothetically actual” that is physically present. As a result, the actors in the performance can refer and point directly to the stage, the set, and to one another “as if they were the dramatic referents themselves, so as to strengthen the illusion of direct presentation of the constructed world” (Elam 1980: 69). It is this direct imitation of a hypothetical world in physical terms on the stage that seems to exemplify the mimetic quality of drama.

In his translation and analysis of the concept of *mimesis* in the *Poetics*, Michael Davis discovers that for Aristotle, “Mimêsis involves a framing of reality that announces that what is contained within the frame is not simply real”, such that “the more ‘real’ the imitation the more fraudulent it becomes” (1999: 3). What Davis’s interpretation of Aristotle’s concept of *mimesis* suggests is that the imitation of reality in dramatic theatre is a conscious attempt to artificially

isolate events from the continuous and immeasurable human experience, and present them as re-enactment to an embodied audience. However, it is the mimetic quality of not only drama, but also the arts in general, that Plato takes issue with in Book X of the *Republic*. Four decades prior to Aristotle's *Poetics*, Plato already theorized that art is the imitation of life. Life, in turn, is a shadow of the ideal forms or *eidos*. For Plato, the appearances that are known to us through our engagement with the material world that is in a constant state of change is only a copy or mimicry of the ideal forms that contain the truth and are therefore real. As Plato informs us through Socrates, the things that we see and perceive in the world are not real, but merely shadows of the ideal forms, the immediate perception of which is closed to us. In the same way that life is only a shadow of the ideal forms, Plato believes that the "work of the artist is at a third remove from the essential nature of the thing" (*Republic* 597e).

Plato's view of art is that it is an image of likeness (*eikon*) of an ideal original that we are not able to directly perceive.⁸ In this sense, art holds up a mirror to nature (*physis*). It is for this reason that Plato targets the arts, including the art of the tragic poet. In explicating his criticism of poetry, especially mimetic poetry, Plato remarks that the "tragic poet, too, is an artist who represents things; so this will apply to him: he and all other artists are, as it were, third in succession from the throne of truth" (*Republic* 597e). Being an imitator of the craft of, say, the carpenter, who is the imitator of the ideal forms, the artist is twice removed from the truth. It is for this reason that the artist has no place in the just city of Plato's *Republic*. For Aristotle, however, art does not imitate things or experiences. It does not seek to mimic the ideal forms.

⁸ The Italian philosopher Giorgio Agamben remarks that the grounds for Plato's opposition to the poets, or the arts in general, can be traced back to a Platonic theory of the relationship between language and violence. Agamben explains that Plato was not simply targeting narrative poetry, but the mimetic poetry that imitates passions in order to "evoke the same passions in the soul of the listeners" (1999: 119). In this sense, Plato appears to be concerned about the violent potential of language, particularly mimetic language. As Agamben notes, Plato realized – since the rise of the sophists – that the assumption that language was devoid of any possibility of violence no longer held true, and instead, "the use of violence was an integral part of poetic language" (1999: 119).

Instead, art imitates action. But what does Aristotle mean by action? The American theater scholar and founder of the field of performance studies Richard Schechner claims that for Aristotle, art imitates the patterns, the rhythms, and the developments found in nature (*physis*). In other words, art mimics the processes of nature, in that when things are born, they “grow and flourish,” and then they “decline and die,” only to repeat the same cycle (2004: 37). This idea of art as the mimicry of natural processes seems to resonate with the Aristotelian conception of poetics as a kind of *poiesis* or the “bringing-forth” of something into being, be it in the form of a painting, a sculpture, or a piece of dramatic theatre.⁹

The Brazilian theatre director and performance theorist, Augusto Boal, was inspired by the capacity of art to imitate the processes of nature rather than simply mimicking particular things or experiences. Boal agrees with Aristotle that representation in the theatre happens through action. However, he argues that throughout the history of western theatre, there has been a tendency to reduce *mimesis* to the level of mere imitation. Since the time of Plato and Aristotle, imitation is understood as a perfect copy of an original and ideal model, which is the formal cause of a created thing. Following this logic, Boal reasons that we should arrive at the following formula: The first assumption holds that “nature” refers to the whole of created things. The second assumption holds that theatre is a copy of nature. Therefore, the final claim is that theatre is a copy of created things. If this were the case, then stage and reality would share the same relationship as that between word and thing – that is, a seemingly unproblematic relationship to the mimetic structure that governs the interaction between the two entities. But rather than

⁹ Schechner believes that the idea of “form” in Aristotle’s thinking is fluid and changing, whereas Plato believes that it is solid and fixed, as exemplified by the ideal forms that contain the truth (2004: 37). Such a distinction appears to echo the difference in philosophical positions between the Pre-Sophist philosophers Heraclitus, who claimed that the world is in a constant state of change, such that nothing can remain fixed, and Parmenides, who held that there is an underlying truth within appearances that are fixed and constant. As we shall see in the next section, the contrasting ideas propounded by these Pre-Sophist philosophers did have a significant impact on Martin Heidegger’s thinking on the concept of *poiesis* in relation to metaphysics and the question of technology.

accepting the traditional understanding of imitation as a copy of an original model, Boal intends to rescue what he sees as the proper meaning of *mimesis* in Aristotle's *Poetics*. For this reason, he takes up the challenge of re-interpreting Aristotle's concept of *mimesis*.

In his analysis of Aristotle's *Poetics*, Boal claims that the act of imitation (*mimesis*) is not about copying an exterior model. Instead, it entails a re-creative process that is generative in character. For Boal, "Mimesis' means rather a 're-creation'" (1995: 1). As opposed to the assumption that nature refers to the whole of created things, he contends that it is "not the whole of created things but rather the creative principle itself" (1995: 1). Nature should be understood in terms of the natural processes that bring life into being. This is the "creative principle" that defines nature. It is on the basis of this revised understanding of nature that Boal sets out to re-interpret Aristotle's concept of *mimesis*. As he explains, "when Aristotle says that art imitates nature, we must understand that this statement, which can be found in any modern version of the *Poetics*, is due to a bad translation, which in turn stems from an isolated interpretation of that text. 'Art imitates nature' actually means: 'Art re-creates the creative principle of created things'" (1995: 1). On the surface, Boal's position on *mimesis* appears to be similar to that of Schechner, in the sense that art imitates the developing potential of nature. However, Boal takes Schechner's observation further by proposing that *mimesis* in art is in fact a process of re-creation, as what it imitates is not simply the things or the processes in nature, but the creative and generative principle that brings things and life into being. In this sense, art becomes a form of *poiesis*, as it reproduces the "creative principle" of nature.

In contrast to the relationship between a signifier (e.g., the representation of a cup) and a referent (the physical cup) in the material world, *mimesis* in the context of dramatic performance does not enjoy a fixed one-to-one relationship with its referent. Instead, the process of imitation in the theatre is predicated upon change. "Theatre," as Boal understands it, "is change and not

simple presentation of what exists: it is becoming and not being” (1995: 28). Theatre as a form of becoming endows it with the capacity for *poiesis*, which comprises the re-creation of the creative principle that brings things into being on the stage. Focusing on the generative potential of dramatic theatre as *poiesis*, what follows is an examination of Martin Heidegger’s interpretation of *poiesis* as the process of “bringing forth” a world, as well as his treatment of the relationship between *techne* and *poiesis* as a creative means by which to critically reflect upon technology.

1.4 Bringing Forth a World: Heidegger’s Interpretation of *Poiesis*

In his book, *Introduction to Metaphysics*, Heidegger develops a thesis that rejects the mimetic quality of *poiesis*. Instead, he argues that a link exists between *poiesis* and *noein*,¹⁰ the latter of which is an ancient Greek word that holds a range of meanings that gesture towards thinking, perception, and awareness. Even though Heidegger insists that poetry and philosophical thinking are different, he does acknowledge that they are from the same order: “Poetry, like the thinking of the philosopher, has always so much world space to spare that in it each thing – a tree, a mountain, a house, the cry of a bird – loses all indifference and commonplaces” (*Introduction to Metaphysics* 1953: 26). Poetry and philosophical thinking bring forth a world of possibilities, as Heidegger discerns the poetic quality of philosophical thinking that is mirrored by the way that the poetry of the ancient Greek dramatists might be considered thoughtful. There appears to be a convergence of thought and poetry. To support his claim, Heidegger turns to the Pre-Socratic philosopher Parmenides.

¹⁰ The entry on *noesis* in *A Greek-English Lexicon* reveals that this ancient Greek word, which refers to “idea” and “understanding” in the English language, is derived from *noein*, which means “to see,” “to perceive,” or “to be aware”. The word *noein* is in turn derived from *nous*, which stands for “mind, as employed in perceiving and thinking”. For more on the usages of *nous* in ancient Greek thinking, see Liddell, Henry George, Robert Scott, Henry Stuart Jones, and Roderick McKenzie. *A Greek-English Lexicon*. 9th ed. Oxford: Oxford University Press, 1996.

Parmenides believed that the essence of man could be derived from the essence of being itself, as “Thought and Being are the same” (DK28b6 qtd. in Freeman 42). For Heidegger, the way to achieve this philosophical understanding of the essence of being is through the creation of poetry: “We do not learn who man is by learned definitions; we learn it only when man contends with the essent, striving to bring it into its being, i.e., into limit and form, that is to say when he projects something new (not yet present), when he creates original poetry, when he builds poetically” (1953: 144). Rather than depending on preconceived notions of the essence of being, the key to knowing how something comes into existence is to bring forth that thing from a state of nonbeing into being. To create original poetry – that is, to build poetically – is to partake in the productive act of *poiesis*. Heidegger’s use of the word “original” here does not imply the uniqueness of the thing. Instead, the word underscores the authenticity of the poetic creation, in the sense that the poetic thing created is related to the originator (the artist, for example) who brings it into being. But despite the chiasmic relationship between thought and poetry, where thinking appears to be poetic and poetry seems to be thoughtful, there remains for Heidegger a crucial difference between poetry and philosophy. While poets may express their concern with the essence of Being in their poetry, this expression tends to be subtle and implicit. For philosophers, however, the essence of being is a topic of significant import, and for this reason, it tends to be explicitly addressed in their writings (1953: 26). Nevertheless, both poets and philosophers partake in the productive act of *poiesis*, which Heidegger interprets as the disclosure of Being towards truth (what the ancient Greeks called *alétheia*).

How then does *poiesis* become the site of the disclosure of being and the unconcealment towards truth? Heidegger addresses this question by turning, once again, to Parmenides and his notion that “the path to being [...] is at the same time the way to unconcealment” (1953: 111). For Parmenides, the coming into presence of being is experienced as *physis*, which is the rising of

something from out of itself. In the writings of Parmenides and the other Pre-Socratic philosophers, we see that *physis* is the ancient Greek word for “nature” or “the nature of things”. The word does not only refer to the physical entities in nature but also the quest to understand how they exist. As Heidegger notes, Parmenides recognized that while *physis* constitutes the event of the disclosure of being, it is an event that simultaneously conceals a part of itself (1953: 104). In this sense, the possibility for the appearance or coming into presence of an entity is not exhaustive, as *physis* is an event that discloses being and conceals an aspect of it at the same time. Heidegger explains that Parmenides’s understanding of *physis* is related to his treatment of thought or *noein*. This relationship between *physis* and *noein* is mentioned in Parmenides’s only surviving work *On Nature*, specifically in a fragment that is translated into English as such: “for it is the same to think and to be” (DK28b3 qtd. in Freeman 1983: 52). An early-twentieth century translation presents the fragment as “Being and Thought are the same” (DK28b3 qtd. in Burnet 1920). But Heidegger is cautious in his reading of Parmenides’s fragment. Indeed, he warns us against what he perceives to be the German Idealist reading of it as an expression of the subjectivity of being, which is structured by thought, and in particular, the humanist idea of a self-certain thinking subject. As opposed to the reduction of being to the object of thought, Heidegger clarifies that Parmenides’s point in the aforementioned fragment is that being and thinking belong together (1953: 137). As such, Heidegger argues that being and thinking do not form a unity of antagonisms. Instead, being both discloses and conceals, and thinking is thus possible, due to the unfolding of the space of disconcealment that reveals the truth of being.

Through Heidegger’s interpretation of Pre-Socratic philosophy, we learn that Parmenides held thinking as a process in which the human being enters into history as a being. In other words, the human is a being that *comes into* being. Heidegger observes that in Parmenides’s philosophy, thinking is not prior to being. “Thinking,” Heidegger contends, “is not a function that

man has as an attribute, but rather the other way around: Thinking is the happening that has man” (1953: 141). In other words, it is the event of being’s disclosure that calls Dasein to think. The term *Dasein* refers to what Heidegger calls the “being-there” or the “being-in-the-world” of the human, which allows it to question the very nature of being itself (*Being and Time* 2010: 10). But while Dasein contemplates the nature of its own being, it is simultaneously aware of its existential finitude in the world. According to Hans-Georg Gadamer, Heidegger interprets the limiting experience of Dasein in its “thrownness” in the world as the “disposition” (*Befindlichkeit*) or “mood” (*Stimmung*) in which there is the real disclosure of “being-in-the-world” (2008: 218). What Dasein comes upon in this “disposition” or “mood,” Gadamer explains, “represents the extreme limit beyond which the historical self-understanding of human Dasein could not advance” (2008: 218). As such, Dasein is not only aware of its finitude but also has to accept it. The event of being’s disclosure as “being-in-the world” and “being-towards-death” is that violence which subdues Dasein (*Being and Time* 2010: 169). This violent event of being’s disclosure that confronts Dasein is what the Pre-Socratic philosopher Parmenides refers to as *physis*. In order to overcome the instability of *physis*, which names this powerful event of being’s disclosure that also conceals an aspect of it, Dasein turns to *techne*.

Heidegger does not regard *techne* as merely skill or art. Instead, he sees *techne* as a mode of knowing, whereby “knowledge in the authentic sense of *techne* is the initial and persistent looking out beyond what is given at any time” (1953: 159). *Techne* as knowledge requires Dasein to look beyond given appearances that conceal themselves in order to reveal the essence of being. Heidegger observes that the ancient Greeks regarded the work of art as *techne* because of its ability to unconceal being. “It is through the work of art as essent being,” Heidegger writes, “that everything else that appears and is to be found is first confirmed and made accessible, explicable, and understandable as being or not being” (1953: 159). As such, *poiesis* as production does not

imitate an envisaged model that is stable. Rather, *poiesis* responds to the instability of the powerful and violent event of being's disclosure (*physis*) by opening up a world that is intelligible.

1.5 Of *Techne* and *Poiesis*: Heidegger's Philosophy of Technology

In his 1954 essay, "The Question Concerning Technology", Heidegger suggests that *physis*, which is "the arising of something from out of itself," is also a bringing-forth or *poiesis*, as exemplified by "the bursting of a blossom into bloom, in itself" (1977: 10). *Physis*, as a self-generating phenomenon, is set in contrast to the mobilization of a poetic bringing-forth that is "not in itself, but in another (*en alloi*), in the craftsman or artist" (1977: 11). Heidegger informs us that for the ancient Greeks, *techne* refers to both "the activities and skills of the craftsman" as well as "the arts of the mind and the fine arts" (1977: 13). But Heidegger, as the philosopher David Wills discerns, is not so much interested in developing a distinction between the artefact as *techne* and nature (*physis*) than in establishing a difference "between instrumentality and the 'realm of revealing'" (25). The aim here is not to distinguish between the technological and the non-technological. Heidegger reminds us that while instrumentality may appear to be the fundamental characteristic of technology, a deeper inquiry into what technology represents as a means of production would show that the "possibility of all productive manufacturing lies in revealing" (1977: 12). Instrumentality is not the driving force that steers technological production. Instead, technology is a way of revealing that "comes to presence in the realm where revealing and unconcealment take place, where *alétheia*, truth, happens" (1977: 13). As the word "technology" originates from the ancient Greek word *Technikon*, which stands for "that which belongs to *techne*," it would seem logical that *techne* also "belongs to bringing-forth, to *poiesis*" as revealing (1977: 13). However, this revelation in the poietic – and not instrumental –

conception of technology is, as David Wills contends, unexpected, for “[in] letting come forth as revealing, one does not produce whatever is foreseen by the program of that production” (25-6). In other words, the outcome of the production is not foreseeable. Thus, the poietic conception of technology is a revelation that comes as a surprise for the human who is set upon to “unconceal” the “truth”. For Heidegger, this process of unconcealing the truth – that is, *poiesis* – occurs through a mode of ordering that he refers to as *Gestell*.

Heidegger conceptualizes the essence of technology as *Gestell*, or what he describes as the “enframing” of nature as “standing-reserve”. The ordering of nature as “standing-reserve” entails the “challenging-forth” of the human to reveal or “unconceal” the “truth” through the gathering together of things in the world that would facilitate such a revelation. We should note, however, that Heidegger’s use of the word *Gestell* denotes a mode of coming to presence rather than its common meaning of apparatus or simply a means to an end. He explains that:

Enframing means the gathering together of that setting-upon which sets upon man, i.e., challenges him forth, to reveal the real, in the mode of ordering, as standing-reserve. Enframing means that way of revealing which holds sway in the essence of modern technology and which is itself nothing technological. (1977: 20)

The concept of “enframing” in Heidegger’s philosophy of technology is a “challenging-forth” of the human being to reveal the truth in nature as ever-present and to place it “on call”. It is a means of unconcealing the essence of the things we perceive in the world. The building of a dam across the River Rhine for the purpose of generating hydroelectric power, as Heidegger intimates, is understood as a mode of ordering nature by means of technology. Yet the lesson to be drawn from Heidegger’s example appears to be the following: if we do not reflect critically upon the instrumentality of such a technological intervention (that is, by putting nature on “standing

reserve”), we might be inclined to unquestionably accept the ordering and restructuring of nature for the sole purpose of serving human needs.

In revealing the true forms of the world, *poiesis* does not seek to put the world on “standing reserve”. Indeed, the danger of setting upon nature as “standing reserve” resides in the tendency to overlook or forget the poietic quality of “enframing”. What is so dangerous about “enframing” is that it does not announce itself as a mode of ordering, thus lending credence to the assumption that “technology were a means in the hands of [hu]man [beings]” (1977: 37).

However, as Heidegger observes in another essay, “The Turning,” *Gestell* or “enframing” in his philosophical treatment of the essence of technology also refers to the destining of the coming to presence of Being. Heidegger’s use of the word “destining” (*Geschick* in German) here points to a change of direction, which the translator, William Lovitt, interprets as a transformation within Being that opens up the self in order to turn the oblivion of Being into the coming to presence of Being (1977: 41). Since the essence of technology is “enframing,” which is also the transformation that brings forth the coming to presence of being, the essence of technology as “enframing” appears to partake in what David Wills terms “a chiasmic relationship” with the essence of being. This relationship entails a movement of diversion (a transformative destining) in which “Being might therefore be said to move forward as Enframing and vice versa” (2008: 27). In light of technology’s relation to being, Heidegger suggests that the danger of “enframing” as the ordering of nature might also reside within being. At the same time, however, he claims that technology “will never allow itself to be overcome by [humans]” (1977: 38).

For Heidegger, the human as the being within which the danger of “enframing” resides is not the master of technology. Instead, he asserts that being *qua* the essence of technology adapts itself into “enframing”. As a result, being and technology are imbricated in a cooperative relation, in which “the coming to presence of technology will be surmounted [*verwunden*] in a way that

restores it into its yet concealed truth” (1977: 39). Without affirming technology and its means, Heidegger believes that this restorative surmounting of “enframing” happens through a “coming-to-pass which discloses [...] an essential relationship between technology and [hu]man in respect to their essence” (1977: 39). In setting the tone for the overcoming of the instrumental treatment of technology, the philosopher of technology argues that “[all] that is merely technological never arrives at the essence of technology” (1977: 48). On this note, he begins to turn his focus to the double-edged essence of “enframing” as simultaneously the site of “saving power”:

Enframing comes to pass for its part in the granting that lets man endure – as yet inexperienced, but perhaps more experienced in the future – that he may be the one who is needed and used for the safekeeping of the essence of truth. Thus the rising of the saving power appears. (1977: 33)

The danger of “enframing,” which is always already in danger of turning into an instrument for the ordering of nature, also reveals the emergence of the “saving power” from its “concealed essence that is ever susceptible to turning” (1977: 42). This “saving power,” as Heidegger informs us, refers to the act of safekeeping or conservation that corresponds with the gathering of things in the world that embodies the concept of “enframing”. As such, he surmises that the turning of “enframing” towards its “saving power,” a turn that is always capable of turning back towards its dangerous end, is akin to the lightning-flash that suddenly appears. In what might be considered a surprising turn at the end of his essay, “The Turning,” Heidegger wonders if the “lightning-flash of Being,” its unexpected coming to presence, can be discerned in the essence of technology.

David Wills interprets Heidegger’s invocation of the image of the lightning-flash that violently imposes its will on the world as a sign of nature turning against itself. In the catastrophic moment of the lightning stroke, nature appears out of control and becomes

unnatural, thus revealing what Wills calls “the otherness of nature” (2008: 29). Furthermore, the revelation of nature’s “own otherness,” as Wills intimates, also opens up “the possibility of its transformation,” which is a transformative turn in nature that gestures towards the invention of technics (2008: 29). Just as nature reveals its unnaturalness in the lightning stroke, the invention of technics could bring forth a revelation of technology’s essence that departs from the danger of “enframing” by turning towards its “saving power”. This “saving power” of “enframing,” Heidegger claims, is embodied by a “higher essence” that is *poiesis* (1977: 34). In contrast to the danger of “enframing,” *poiesis*, as I have mentioned earlier, does not seek to put the world on “standing reserve”. Instead, it participates in a process of revealing towards the true forms of the world. Understood as a *techne*, or a revealing that brings forth and belongs within *poiesis*, the work of art offers the possibility of revealing the essence of technology, which Heidegger insists is “nothing technological” (1977: 34-5). But how does the work of art bring forth this essential questioning of technology? In order to address this question, we will need to explore the essential character of art as *poiesis*.

The notion of art as *poiesis* does not entail the production of something that is already in existence or the copying of an idea of a thing that has yet to exist in order to bring it into material existence. The ancient Greeks understood the work of art as *making* something rather than the *doing* of a task such as the copying of an idea. In Book VI of the *Nicomachean Ethics*, Aristotle notes the difference between “making” and “doing” by distinguishing between the rational qualities concerned with each of them (1140a2). Art, according to Aristotle, is a rational quality concerned with making: “All Art deals with bringing some thing into existence; and to pursue an art means to study how to bring into existence a thing which may either exist or not, and the efficient cause of which lies in the maker and not in the thing made” (*Nicomachean Ethics*, VI, 1140a4). Heidegger, as we have seen, shares Aristotle’s understanding of the role of the artist in

bringing forth something into existence in the work of art. The artist is the efficient cause of *poiesis* in artistic production that stands in contrast with the self-generating *poiesis* (or autopoiesis) in nature (*physis*). But Heidegger, in studying the relationship between *poiesis* and *techne*, recognizes Aristotle's distinction between making and doing.

Aristotle and the ancient Greek philosophers recognized the difference between making and doing as an essential distinction between *poiesis* and *praxis*. According to the Italian philosopher Giorgio Agamben, the ancient Greek philosophers “made a clear distinction between *poiesis* (*poiein*, “to produce” in the sense of bringing into being) and *praxis* (*prattein*, “to do” in the sense of acting)” (1999: 68). Aristotle holds that the genus of *praxis* or action is different from that of *poiesis* or production. *Poiesis* has an end *other* than itself. *Praxis*, however, is an end *in* itself. Unlike action (*praxis*), which brings itself into presence in the act, production (*poiesis*) does not bring itself into presence in the work. The end cause of *poiesis* is always already outside of itself. This is why Heidegger believes that *poiesis*, which is understood as a bringing-forth of something into existence, is fundamental to the critical reflection upon technology, as it facilitates the questioning of the instrumentality of *techne* through the production of art. The essence of *poiesis*, Agamben asserts, is not located in the process through which the work of art is produced. Rather, by bringing forth something from nonbeing into being, *poiesis* opens up the space of truth (*alétheia*) and builds a world for the human being's “dwelling on earth,” which is a world for the projection of possibilities (1999: 70). However, Agamben detects a conflation of *poiesis* and *praxis* in the modern era, whereby the human being's “doing” is “determined as an activity producing a real effect” (1999: 70). As a result, the freedom and creativity that inform the activity of the human being is valued as the expression of a will (1999: 70). Artistic production in the modern era (including the performing arts) thus becomes a creative activity that departs from *poiesis* and “enters into the dimension of *praxis*” (1999: 71).

As Agamben explains, the focus of artistic production as *praxis* is on the action of the artist, and the spectator's attention is thereby directed to the particularities of the artistic process by which the creative genius (i.e., the artist's will) is expressed. This conception of artistic production as the expression of the artist's will or creative impetus differs significantly from the ancient Greek understanding of art as *poiesis*. Agamben contends that for the ancient Greeks, the essence of *poiesis* had nothing to do with the expression of a will. Instead, the essence is found in the production of truth, especially in a revealing or an unconcealment that opens up a world for human existence and the projection of possibilities (1999: 72). The human being is not only the efficient cause of *poiesis* in art; it is also the beneficiary of the truth revealed by the work of art. As I will demonstrate in the subsequent chapters of this study, the bringing-forth of dramatic performance into existence constitutes a poietic production that not only involves the craft and skill of the human performers, theatre artists, and audience members but also the potential of nonhuman performers to contribute as co-creators of the performance event. Through the intersection of performance and technology, which comprises the interplay between different media elements as well as the interactions between human and nonhuman actors, intermedial performance brings forth a possibility space in which the *critical reflection* upon technology and its relationship with the environment and different forms of beings could take place. This convergence between *poiesis* as making and the invocation of *noein* as perceptual awareness in intermedial performance gestures towards the development of a dramaturgy that mobilizes embodied perception among the performers and the audience members in order to investigate the interactions between humans and technology. But before we begin to explore the background and substance of this intermedial dramaturgical method and analytical framework in Chapter 2, there are significant insights to be drawn from the intermedial dramaturgical strategies deployed by the performance practitioners of the nineteenth and twentieth centuries. In the following section, we

will explore the intermedial innovations of the nineteenth-century German operatic composer, Richard Wagner, and his compatriot, the early-twentieth-century dramatist, Bertolt Brecht.

1.6 Intermediality on the Modern Stage: The Innovations of Wagner and Brecht

As Western Europe crossed into the “Middle Ages” (the period spanning the fifth to fifteen century CE), the interplay between performance and technology that was characteristic of the ancient Greek and Roman theatres soon made way for the emergence of the mediaeval mystery and miracle plays. Produced by members of the religious clergy, and coupled with the support of artisans and craftsmen, these plays contained representations of Christian biblical stories and were often performed on moving carts known as “pageants”. These “pageants” travelled across different cities and towns, stopping at each site to perform a cycle of plays. Despite the religious overtones in the dramatic content, elaborate sets were constructed on the makeshift stages perched atop the wagons and rudimentary technological devices such as trap doors were deployed to enhance the audience’s experience of the miracles depicted in the plays. In the Renaissance era, permanent theatre buildings such as the Globe Theatre in England began to emerge in Western Europe. However, the Renaissance’s preference for the concept of separation between the different medias in the arts, whereby the “idea that a painting [should be] made of paint on canvas or that a sculpture should not be painted” became a social philosophy, gravely obscured the relevance of “inter-media” dramatic devices in the Renaissance theatre (Higgins 1966: 28). Nevertheless, the significance of intermediality in performance was rekindled after the Renaissance, when the Baroque Theatre of the seventeenth century rediscovered the *deus-ex-machina* of the ancient Greeks.

Through the dramatic changes of scenery made possible only by mechanised technology, the Baroque drama initiated the evolution of the inter-media theatre and the practice of

scenography. In this theatrical tradition, not only did technology complement the content of a play by creating visual and audio effects, it also enhanced the theatrical experience by striking the audience with “awe and amazement at [technology’s] operation” (Baugh 2005: 1). In the middle of the nineteenth century, the German opera composer Richard Wagner realized the potential of technology and scenography (scene design) in creating *Gesamtkunstwerk*, or Total Artwork. Living in the age of the Industrial Revolution might have inspired Wagner to harness the potential of technology in creating *Gesamtkunstwerk* (Total Artwork), an aesthetic movement that was “driven by a vision of theater in which the audience loses itself in the veracity of the drama, creating an immersive experience” (Packer and Jordan 2001: xxiii). The *Gesamtkunstwerk* was an intermedia performance where a combination of scenic painting, lighting effects, and acoustical design, served to create a believable ‘virtual’ world on the stage. Referring to his aesthetic venture as “The Artwork of the Future,” Wagner argued that the true and complete artwork consists of the “reciprocal agreement and cooperation of all the branches” and mediums of art (1849: 5). What this means is that every theatrical device in a Wagnerian opera, be it the scenery or the actors’ gestures, is in support of the overarching theme of the drama. This structural concept is emblematic of Wagner’s emphasis on harmony in the creation of *Gesamtkunstwerk* (Total Artwork). As Patrick Carnegy explains, “[all] the constituent elements” in a Wagnerian performance “carried equal weight and had to be held in balance” (2006: 118). In this sense, Wagner’s employment of mechanical technology serves as a contrived solution that overcomes the physical constraints of a performance stage.

In the 1882 production of *Parsifal* at the Bayreuth Festival in Bavaria,¹¹ Wagner made the actors pretend to walk while “the scenery, on three huge canvas rolls, moved behind them” (Carnegy 2006: 112). Propelled by electric motors, the canvas rolls moved continuously from left to right until the painting of the temple was eventually revealed on the last canvas located at the back of the stage. Such a configuration of the stage set allowed the scenery to change rapidly as the actors pretended to walk through the artificial forest. However, while technology was able to fulfill Wagner’s desire to construct a “stage world that was rooted in myth rather than history,” he could not find the “appropriate visual language” to do so, as the dream-like, illusionary world contained symbols that represented aspects of reality from the historical past (Carnegy 2006: 131). Instead of aspiring towards the building of stage sets that were deemed historically accurate, he sought to redefine the theatrical experience by way of architecture and artificial lighting. As Wagner argues in his essay “The Artwork of the Future”, the highest task of architecture was “to frame for a fellowship of artists, who in their own persons portray the life of Man, the special surroundings necessary for the display of the Human Artwork” (1849: 5). For Wagner, his *Festspielhaus* theatre in the northern Bavarian town of Bayreuth embodies the expression of human mastery over the technological and artistic aspects of architecture.

In their study of the origins of multimedia, Randall Packer and Ken Jordan note that Wagner’s purpose-built *Festspielhaus* employed a combination of Greek amphitheatrical seating, surround-sound acoustics, the darkening of the house, and the placement of musicians in an orchestral pit (2001: xxiii). Taken together, these theatrical innovations “focused the audience’s divided attention on the dramatic action” (2001: xxiv). In a radical step towards the redefinition of the theatrical experience, Wagner’s *Festspielhaus* was designed to situate the audience in a

¹¹ The Bayreuth Festival, held in the Bavarian town of Bayreuth since 1881, is an annual event where the performances of Wagner’s operas are staged. Wagner commissioned the festival as a venue at which to present his lengthy performance cycles, namely, *The Ring of Nibelung* and *Parsifal*.

darkened space while the dramatic action unfolded within the illuminated area of the stage. Gas lamps provided artificial lighting that could be turned on or switched off at the discretion of the director. At the start of each performance, the house lights were extinguished in order to plunge the auditorium into darkness. Such a radical effect altered the sensory experience of the audience members, as the illuminated stage became the sole focus of their gaze. Packer and Jordan observe that Wagner's intention was to maximize the suspension of disbelief in his performances by drawing the audience into the illusionary world staged within the proscenium arch. In order to mobilize this effect of embodied immersion in the performance, "the spectator," as Wagner elucidates, "transplants himself [or herself] upon the stage, by means of all his [or her] visual and aural faculties; while the performer becomes an artist only by complete absorption into the public" (1849: 5). As the realms of the performer and the spectators begin to fold into each other, the world of illusion rendered in Wagner's opera quickly becomes a vortex that sucks the audience members into the immersive dreamscape of the performance.

While Wagner's brand of intermedial performance comprised the compounding of different artistic media into an immersive theatre experience, the early-twentieth-century German dramatist Bertolt Brecht chose to infuse the interplay between performance and technology with the self-reflexivity of meta-theatre. Brecht's approach to intermedial performance consists of two significant features. First, his actors "refrained from going over wholly into their role, remaining detached from the character they were playing and clearly inviting criticism of him" (Willett 1964: 71). Second, the use of various technological devices and media prevents the audience from emotionally identifying with the action in the play. Concisely, Brecht describes this second phenomenon as the *Verfremdungseffekt*, or "alienation effect". To achieve this effect, he made full use of some of the most popular mechanical technologies of the early-twentieth century such as photographic and filmic projections. In theorizing the *Verfremdungseffekt* (also known as the

“distancing effect”), Brecht argues that the use of technological devices in performance would prevent the audience from emotionally identifying with the action in the play (as was the case in dramatic realism). He surmises that the distancing effect “prevents the audience from losing itself passively and completely in the character created by the actor,” thus affording them the role of “a consciously critical observer” (Willett 1964: 91). Unlike Wagner, Brecht did not seek to immerse his audience into a theatrically rendered virtual world. Instead, by harnessing the power of mechanical technology, he was able to distance them from the dramatic action on the stage, such that they may be compelled to deliberate on the pertinent issues raised in his plays.

In *Galileo*, Brecht captured the cinematic qualities of “vivid visual images and its combination of fluidity and abruptness” in a theatrical context (Willett 1964: 122). The stage designer Caspar Neher supplemented the performance with such mixed media tools as the “projections of maps, documents and works of art of the Renaissance,” thereby reinforcing the artificiality of the drama (Esslin 1961: 128). Nevertheless, while this Brechtian play may be capable of distancing the audience from the action on the stage by self-consciously exposing the artificiality of the performance, it is not difficult to distinguish between the physical reality of the actors and the material artificiality of the technological devices employed in the drama. Rather, the physicality of the human actors as biological beings and the materiality of the non-human technological devices seem to exist in constant tension with one another on the Brechtian stage. As I will demonstrate in the ensuing chapters of this study, it is this tension that is especially pertinent to our investigation of the mobilization of embodied perception in the intermedial performance practices of the early-twenty-first century.

Brechtian performances seek to expose the technicity behind the artwork by drawing attention to the lighting systems and other media technologies that support the production of the dramatic spectacle. In some productions, Brecht mechanically lowered musical symbols (e.g., a

treble clef) into the scene whenever the actors broke into song. The artificiality of Brecht's drama provides the audience with an opportunity to put aside any emotional attachment to the play and to deliberate on the wider socio-political, philosophical and even ontological implications that the play tries to evoke. This way, each member of the audience is "no longer a consumer, but a producer of the [play]", as they attempt to interpret its meaning (Barthes 1974: 4). By becoming a co-producer of the play, the audience members partake in a process of *poiesis* that reveals the truth that the dramatic performance is intended to convey. In an effort to mobilize the poietic quality of dramatic theatre, Brecht also drew inspiration from the works of Edwin Piscator, whose political theatre initiated the use of film and posters (mixed media) in dramatic performance, so as to "overcome the limitations of the 'theatre of illusion' [realist theatre]" (Esslin 1961: 123). The theatrical fraternity of the 1920s saw the realist theatre as "the only possible stage convention" and as such, Brecht seriously intended to pull "theatre away from the illusion of eavesdropping on real events" (Esslin 1961: 122). For this reason, he emphasized the integration of technology and various media into dramatic performance in order "to meet the needs of a new revolutionary, scientific age" (Esslin 1961: 121).

An expression of this relationship between the dramaturgical strategies of Brecht's approach to intermedial performance and the scientific thinking of the times can be found in another Brechtian play entitled *Rise and Fall of the City of Mahagonny*. In a 1931 production of this work in Berlin, the director challenged the audience's epistemological and ontological perceptions of the performance by having a "live" actor perform in front of a large portrait reflecting an image of himself, thus splitting the dramatic episode in two and leaving the audience to ponder over the reality of the scene. Like many of Brecht's productions, this performance of *Mahagonny* sought to distance the audience from the action on the stage by employing the Brechtian technique of the "alienation" effect, which allows the audience to look

at drama “with the ‘critical’ estranged eye of the discoverer” (Esslin 1961: 129). In contrast to the immersive experience rendered by Wagner’s Total Artwork, Brecht’s approach to intermedial performance situates the audience members as critical observers of the social and political undercurrents of the dramatic action. The essence of Brecht’s “Epic Theatre” is thus embodied by the audience’s participation in the exploration of the play’s political meaning, while the use of technology and various media serves an ancillary purpose, particularly as a means by which to prevent the audience members from identifying too closely with the action on the stage. We can see that Brecht’s use of technology seems to point directly to technicity, whereas Wagner seems to be attempting to hide the technicity for the sake of a higher form of mimesis, as evidenced by his production of *Gesamtkunstwerk* or Total Artwork. Yet despite the apparent differences between the theatrical innovations of Wagner and Brecht, it is difficult to dismiss the influence of their dramaturgical techniques on the interplay between performance and technology in twentieth-century theatre practice. Having explored the intermedial experiments of Wagner and Brecht, the final section of this chapter will examine the ways in which the dramaturgical strategies of some twentieth-century avant-garde theatre artists and intermedial performance practitioners might have influenced the audience’s perception of human-machine interaction.

1.7 “Laying Bare the Device”: Intermedial Effects in Twentieth-Century Performance

The early-twentieth century witnessed many monumental innovations in terms of science, technology, and the arts. Albert Einstein’s formulation of relativity theory in 1905 altered our perception of space-time relations, while Werner Heisenberg’s discovery in 1924 of the Uncertainty Principle destabilized the Newtonian understanding of the universe as governed by fixed, predictable laws. Writing on the interplay between technology and performance in the twentieth century, Christopher Baugh notes that these scientific discoveries also led to the

development of new technologies, which in turn “further challenged the perceptions of the world and the artist’s relationship with it” (2005: 39). Indeed, dramatic theatre in the twentieth century experienced a “paradigm shift” from the verisimilitude and realist styles of nineteenth-century drama to the experimental performance styles of the avant-garde theatre. As the theatre scholar Christopher Innes observes, early-twentieth-century artists of the avant-garde movement propelled a “rejection of social institutions and established artistic conventions” (1993: 1). The avant-garde movement, including its subsidiary in the theatre, “sought to appropriate technological media, to abstract them to aesthetic ends and, of course, also to exploit them politically” (Gruber 2010: 253). In keeping with the general artistic tendency of the avant-garde movement, the avant-garde theatre directly challenged the established conventions of dramatic theatre by taking the performance beyond the limits of the proscenium arch in a gesture that theatre scholars refer to as “tearing down the invisible fourth wall”. This desire to experiment with the combination of various artistic forms and media technologies in the theatre resulted in a plurality of intermedial elements on the avant-garde stage and the development of scenography for the design of the theatrical *mise-en-scène*.

While theatre has traditionally been understood as a phenomenon in which “one or more human beings, isolated in time and/or space, present themselves” to an audience (Beckerman 1970: 6), the avant-garde theatre introduced new dramaturgical strategies that disrupted the realist and narrative modes of representing time, space, and people. According to the theatre historian, Klemens Gruber, the avant-garde theatre of the early-twentieth century had an anti-illusionist and anti-narrative disposition, which was exemplified by how it involved the audience in the staging of space, light, and construction (2010: 250). This increased level of interactivity in the performance event reconditioned the spectators’ perception of their relationship with the performers and the dramatic action on the stage. “Requiring a mobile gaze and employing

multiple perspectives,” the presumed necessity of the invisible fourth wall in sustaining the theatrical illusion was questioned (Gruber 2010: 250). In fact, the avant-garde theatre movement, of which Brecht was a prominent member, sought to deconstruct the theatrical illusion in dramatic performance by revealing the machinery behind it, as Brecht did through his deployment of the “alienation” effect. The Russian linguist and futurist Roman Jakobson once described this technique of revelation in the avant-garde theatre as “laying bare the device” (qtd. in Gruber 2010: 252). However, as Gruber points out, the avant-garde’s “laying bare of the device” is not an act of pretence, especially not in the way that the “making of” explanatory supplements for the major Hollywood blockbuster movies might be construed as pretentious.¹² Rather, the avant-garde theatre artists believed that the revelation of the machinery behind the staging of the illusion in the work of art was part of the aesthetic procedure that challenged the spectators’ perception of artistic production. For Gruber, this exposure of the media elements themselves “in their multiple intermedial practices, their transgressive aesthetics and their analytic exuberance” produces what he calls “media self-reflexivity: a playful staging of media” (2010: 256). It is this playful staging of media in the avant-garde aesthetic, and especially in Brecht’s revelation of the technicity behind his dramatic performances, that fosters the type of critical thinking that is necessary for the spectators’ reflection upon technology and its impact on the human condition.

As Walter Benjamin asserts in “What is Epic Theatre?”, there is a correlation in the avant-garde theatre between the number of interruptions to which the spectators are exposed and their awareness of the conditions of modern life in the early-twentieth century. Benjamin is alluding to

¹² Such “making of” explanatory supplements have taken root in theatre practice. In 2013, the Royal Shakespeare Company released a series of YouTube videos that offered the audience “an insider’s look” at the production process for the staging of Shakespeare’s *Richard II*. Framed by the semi-autobiographical title “Production Diary,” the videos track the evolution of the rehearsal and production season across a two-month period.

the technique of interruption that Bertolt Brecht introduced into his “Epic Theatre”. Facilitated by the incorporation of film and sound recordings as the material means by which to disrupt and alter the flow of the dramatic action, the interruptions were designed to stimulate the audience’s critical awareness of the social and political issues in the play. Interrupting the linear time-flow of the performance would reveal the work of art as present, thus unveiling a possibility space for critical reflection. The correlation between the use of media technologies and the incitement of critical reflection among the audience members was also evident in the Bauhaus Theatre. The Bauhaus Theatre was inspired by the Bauhaus artistic style of the early-twentieth century, a system that promotes the combination of technology with the arts. In 1924, the theatre group’s experiments with various media elements in their performances culminated in the development of the Theatre of Totality.

The Hungarian painter and Bauhaus professor, László Moholy-Nagy, defines the Theatre of Totality as “the concentrated activation [...] of sound, light (color), space, form, and motion” (1996: 60). The Theatre of Totality features a combination of the Wagnerian *Gesamtkunstwerk* (Total Artwork) and the Brechtian *Verfremdungseffekt*, or “alienation” effect, as it mixes in-real-life performances by stage actors with the concerted use of various media forms to produce a work of dramatic theatre. The position of the actor in the Theatre of Totality differs from the actor’s role in traditional forms of theatre. The human actor, Moholy-Nagy argues, “is to be employed ON AN EQUAL FOOTING WITH THE OTHER FORMATIVE MEDIA” ([emphasis in the original] 1960: 57). The emphasis on the actor having the same status as every piece of media found on the stage signifies the Bauhaus Theatre’s resolve in creating a kind of total artwork, in which all its components contribute equally to the overall performance, and hence the name, Theatre of Totality. It must be emphasized that the concept of total artwork invoked here is not the same as Wagner’s idea of *Gesamtkunstwerk*. In the Theatre of Totality, the devices that

are responsible for creating the dramatic spectacle are, to borrow Jakobson's turn of phrase, "laid bare" to the audience members. As a result, the employment of technology in the Bauhaus Theatre further detaches the audience from the dramatic action in order to challenge their perception of the interactions between humans and machines.

Both the actors and the equipment used in the Bauhaus Theatre are actively involved in producing, changing and criticising every action or plot sequence in the play. For instance, the actors in the chorus did not passively repeat the actions, words and intonation of the other actors. Instead, mirrors and optical equipment projected gigantic and enlarged faces and gestures of the actors, while their voices were amplified to correspond with the visual magnification. The Theatre of Totality also included the reproduction of thought through motion pictures, phonographs and loudspeakers. Consequently, this interplay of different media in the Bauhaus Theatre corresponds with Moholy-Nagy's vision of a theatre, in which the audience will not be "silent spectators", but will "*take hold and participate*" in deliberating on the meaning of the play ([emphasis in the original] 1996: 68). In an effort to encourage the audience's participation in the performance, the directors of the Bauhaus Theatre movement employed dramaturgical strategies that expose the machinery that produces and sustains the dramatic spectacle. By laying bare the devices in the performance, the Bauhaus Theatre accompanied the Brechtian "Epic Theatre" in dismantling the imaginary fourth wall that separated the worlds of the stage and the audience members in the realist style of dramatic production.

While the intermedial techniques employed by Brecht and the Bauhaus Theatre were focused on revealing the machinery behind the performance, the Irish playwright Samuel Beckett saw the deployment of intermedial dramaturgical strategies as a viable means by which to explore the existential and ontological uncertainties that permeate his short plays. Written as one-act plays, most of the works consist of detailed instructions on the staging of various media

elements in relation to the performances of human actors. Artificial lighting and analogue sound technologies in Beckett's short plays (also known as the "later dramas") comprise some of the media elements used to reinforce the themes of the dramatic narrative. By employing lighting and sound effects in conjunction with the action on the stage, the intersection of performance and technology in Beckett's short dramas harbour the potential to alter the audience's perception of how biological bodies and inanimate objects exist and relate with one another in the world. For instance, in the original productions in the 1950s, Beckett used incandescent stage lighting to destabilise the audience's spatial perception of the theatrical space by designing specific areas of light projection, with the help of barn doors and shutters fixed on each lamp. The experience of any of Beckett's plays as art thus requires "a certain affective responsiveness to sensible qualities", which in turn depends on the audience's experience of what the aesthetics theorist Etienne Gilson describes as the phenomenological presence of the material, the body, and the language of the artwork (2000: 46).

In *Being and Time*, Martin Heidegger emphasizes that the essence of phenomenology is "to permit that thing which of its own accord manifests itself to reveal itself as it is" (qtd. in Richardson 1993: 46). This thing can be a biological body or an inanimate object. Applying Heidegger's theory of phenomenology to the context of intermedial performance, we could argue that the phenomenological presence of media technologies, the body, and language as things in Beckett's short plays reveal the ontological essence of their existence in the performance by "being there" – that is, by occupying space on the stage. Indeed, Beckett grounds the existential questions raised in his short, one-act plays in the materiality of the things that are presented to the audience. As such, the interplay between technology and performance in these short dramas proposes a negation of meaning that parodies the rationalist notions of art and meaning, as the

material existence of the human actors and technological objects on the stage precedes any attempt at establishing meaning in the dramatic performance.

In his reading of Beckett's full-length play, *Endgame*, Theodore Adorno reasons that the "negation of meaning becomes aesthetically meaningful when it is realized in the material with which the artist works", such that "Beckett's absurd plays are still plays" that retain artistic meaning (qtd. in Zuidervaart 1991: 175). In the short plays, the employment of stage lighting functions as a means by which to reinforce the central themes of the drama. In plays such as *Footfalls* and *What Where*, the actor's actions under the influence of stage lighting is set against the dark spaces on the stage in order to accentuate the physicality of every move that the body makes. The perceptual effects resulting from this distinction between the lit and darkened spaces on the stage are significant. On the one hand, the bright spaces on the stage affect the audience members' sense of space and their perception of physical intimacy and proximity. On the other hand, the dark spaces on stage heighten their suspicion of the dark spaces that surround them in the theatre. Consequently, the sharp contrast between the lit and darkened areas of the stage evokes a feeling of insecurity among the audience members, as though some unknown and invisible entity is watching them from a distance.

The printed version of Beckett's *Footfalls* includes drawings and detailed instructions on the exact size of the rectangular box on the stage created by means of stage lighting. The spatial rigidity implied in the drawings and instructions is underscored by Beckett's insistence that the rectangular box should comprise a "strip of light, width one metre, downstage parallel with front", and its position should be "a little off centre audience right" (Beckett 1986: 399). Throughout the performance, May, the protagonist, paces back and forth along this narrow path of light, "feet lit most strongly, body and head more in the dark", a visual effect that emphasizes the motion of her feet, while the monotonous voice of an elderly woman emanates from the

darkness that drapes over the upstage area (Fischer-Seidel 1994: 78). As the drama unfolds, the intensity of the strip of light at the downstage area decreases with every fade-out and fade-up sequence. This sequence, as the theatre scholar Therese Fischer-Seidel observes, “happens three times, thus segmenting the play into three parts” (1994: 78). The perceptual effect of this experimentation with stage lighting is significant. By reducing the intensity of the strip of light at periodic intervals, the use of stage lighting becomes a tool for segmenting time in the phenomenological sense, and by extension, “the [entire] play in its succession” (Fischer-Seidel 1994: 78). Here, Beckett’s dramaturgy plays on the audience’s imagination and experience of the action on the stage, causing them to not only think of what lies within the visible space, but also of what lies within the darkness that lurks behind it. Furthermore, this strip of light fades down and up a few times over, with the last fade-up revealing the strip of light on its own, this time without May’s presence. Consequently, May’s conspicuous disappearance from the scene undermines her ontological status of her existence within the performance.

Besides the use of stage lighting to question the ontological integrity of human existence, Beckett also employed sound media in his short plays in order to challenge the audience’s perception of human-machine relations. Beckett’s *What Where* depicts the disconcerting interactions between humans and machines. A human voice emanates from a gramophone situated at stage right. Playing the role of an interrogator, the broadcasting of the voice through the gramophone accentuates the dehumanising of the human actors on the stage who behave like pawns controlled by an unseen figure. As the dramatic action unfolds, all the actors on the stage respond passively to the demands of the lead character called Bam. The lighting direction for *What Where* states that the rectangular box formed by a haunting beam of incandescent light that hovers from above the stage should measure three by two metres in length and breadth (Beckett 1986: 470). Within this dimly lit performance space, the actors perform a series of mechanized

actions, as they march in and out of the shrilly-lit rectangular box. Whenever the actors stand inside the dimly lit performance area, they look as though they are unwittingly submitting to every demand made by Bam, who is assumed to be the character behind the voice that emanates from the gramophone. As the actors appear to be dehumanized and manipulated by a machine, Beckett seems to be hinting at the perceived dangers of ceding too much power to technology, which might potentially turn against its human creators.

Having lived through the Second World War, Beckett witnessed the devastating effects of industrialized warfare in Europe, and the existential anxieties that plagued its aftermath. Perhaps it is for this reason that the subjugation of human beings at the hands of technology seems to feature prominently in several of Beckett's short plays. Indeed, the technological anxiety (a topic that I will explore in greater depth in Chapter 4) that undergirds the performance of *What Where* is reinforced by the existential crisis in *Krapp's Last Tape*, a short play about the natural degradation of human memory and the externalization of that memory in auditory storage media. The play features the character Krapp, an aging man who is seen recording the major events of his life into a tape recorder. Halfway through the recording, he finds a tape that has been labelled "Box three spool five" (Beckett 1986: 216). Playing the tape on the recorder, Krapp encounters the voice of his younger self. The voice is heard narrating details about Krapp's life at a time that has long passed. While the dramatic action of the play is driven by the narrations that are recorded on and reproduced by the tapes, Krapp's performative actions and his critical reactions to the content of these audio reproductions constitutes the visual stimuli of the performance. He is suspicious of the accuracy of the tape recordings, and refuses to accept them as a true witness of his past. As Krapp stops, rewinds, and plays the tape, his actions reveal that the existence of the in-real-life actor (playing Krapp) on the stage is in conflict with the voice on the tape, which supposedly belongs to Krapp's younger self.

The use of sound media in the performance produces two Krapps – the old man on the stage and the young man on the tape. As the dramatic action ensues, the accuracy of the older Krapp’s memory is undermined by the details gleaned from the tape recording of the younger Krapp’s voice. It appears that the capabilities of the human being to remember things, people, and events is outstripped by the technological power of the tape recorder, which seems to be a more reliable and permanent witness of the past. But the juxtaposition of the older Krapp who exists in the flesh with the younger Krapp who exists only as a voice is not merely a suggestion of the competition between the abilities of humans and technology. What is significant about Krapp’s replaying of the tape recordings is the implication that human existence could potentially be cast in doubt if technology literally catches up with it. Put differently, *Krapp’s Last Tape* highlights the existential crisis that could potentially unravel itself when technological devices such as tape recordings appear to remember the past better than human beings are capable of doing so. Despite the interplay between technology and performance in many of Beckett’s short dramas, the principal concerns expressed in these works are decidedly human. As opposed to the manifesto of the Bauhaus Theatre, which attempted to place the human actor on an “equal footing” as the media elements employed in the performance, Beckett’s use of technology in his short, one-act plays foregrounds the existential anxieties that inform the anthropocentric fear of being manipulated or supplanted by machines.

Taking a historical view of Beckett’s short dramas, it would seem that such existential anxieties might have been reinforced by the threat of nuclear annihilation during the “Cold War” in the mid to late-twentieth century. But they are also symptomatic of the human being’s propensity to assert its superior control over the technological implements that are created by its own hand. Such is the anthropocentric question regarding the treatment of technology, an issue that is as prominent in Heidegger’s philosophy of technology as it is in the works of intermedial

performance artists. Therefore, my objective in Chapter 2 is to develop a theory of the intersection of performance and technology that departs from the anthropocentric conception of human-machine relations in performance. I will begin with an examination of the co-evolution of human beings and technology through the intellectual intercession of David Wills, Bernard Stiegler and Gilbert Simondon. Having considered Wills and Stiegler's ideas on the co-evolutionary relations between technics and the human, as well as Gilbert Simondon's philosophy of technology and its impact on psychic and collective individuation, I will proceed to examine Brenda Laurel's conceptualization of human-computer interactions in conjunction with the theories of intermediality offered by such theatre scholars and media philosophers as Chiel Kattenbelt and Henk Oosterling. Finally, the concluding section of Chapter 2 will be given to the development of "Critical Techno-dramaturgy," an original conceptual framework that analyzes the ways in which the dramaturgical strategies employed by intermedial performance artists affect the audience's embodied perception of human-machine interactions.

Chapter 2:

Embodied Perception and Intermedial Performance:

Towards a Critical Techno-Dramaturgy

“In its guise of the technological, the dorsal therefore names, in a number of ways, what comes from behind to inhabit us as something other, some other thing, the other; an other beyond what can be conceived of within the perspective of our frontal relations. Not just an enemy, a wild animal, an avalanche, falling rock, or speeding train, and indeed not necessarily in the form of a threat [...] but also and even the known other to the extent that we allow it to fall back into the shadow, into the space of a type of faith or trust, of what is behind us.”

- David Wills, *Dorsality: Thinking Back through Technology and Politics*, 2008, p.11.

Wednesday evening. The boy rests on the ground with his arms and legs flushed against the sand. The blazing sun scorches the weary earth on which a dozen marsupials scurry past the eucalyptus trees towering above the desert sand. Clutching a curved piece of wood in his right hand, the boy begins to strike the ground with the wooden object. He tries to lift his chest off the glistening sand, but his trembling arms betray the pressing weight of his frame. Nevertheless, he manages to lift his grated knees slightly off the ground. Brandishing the curved piece of wood, the boy strikes the ground a few more times until his arms are no longer in contact with the earth. He gazes up towards the cloudless sky. Turning to the back, he swings his right arm forward and throws the wood into the surrounding wilderness. The curved wooden object is set aloft, lifted by the multitude of invisible air particles as it sweeps across the sandy terrain. Before long, the boomerang returns to the exact spot where it left. The boy manages to catch it just in time.

This vignette depicts a scene that I witnessed during a 1997 trip to an aboriginal camp near the city of Perth in Western Australia. The boy with the returning boomerang in his hand was an actor performing a hunting scene in a cultural performance about the Noongar people who have inhabited the coastal region of Western Australia for over sixty thousand years. The returning boomerang is a crescent-shaped wooden aerofoil that returns to the thrower at the end of its flight. Designed as a hunting tool by the aboriginal people of Australia, the returning boomerang, together with its non-returning counterpart, has lost its original hunting function and is now used for recreational purposes by hobbyists. However, for the Noongar people and other aboriginal clans in Australia, the boomerang is not simply a hunting tool. Adorned with intricate carvings, it is the object that defines the identity of a clan. At the same time, the boomerang is also the technical object that individuates the human being as a prosthetic creature. The continuing existence of both the returning and non-returning versions of the boomerang bears witness to the intergenerational transmission of myths and technical knowledge by way of speech, symbolic inscriptions, as well as the fabrication of tools. For the surviving aboriginal clans in Australia, the boomerang offers an artefactual touchstone to their ancestral past – a past that they did not live. Furthermore, the sustained transmission of the technical knowledge required to make and use the tool for subsistence or recreational purposes plays a significant role in the accumulation and sedimentation of their collective cultural memory. I believe there are lessons to be drawn from the performance at the aboriginal camp. Certainly, the interactions between the boy and the boomerang opened up the possibility for critical reflection on the human-technology relationship. But like the returning boomerang that returns to where it left, perhaps we should also think back – to borrow the philosopher David Wills’ turn of phrase – towards our origins as tool-bearing creatures in order to return to the question of human-machine relations in theatre performance, and in contemporary social life.

By considering the co-determining relationship between humans and technicity, this chapter seeks to develop a theory of the intersection of performance and technology that departs from an anthropocentric perspective in which the human being is perceived as the master of technics in human-machine interactions. I begin with an examination of the co-evolution of human beings and technology through the philosophical thinking of David Wills, Bernard Stiegler, and Gilbert Simondon. Upon establishing an understanding of Wills and Stiegler's ideas on the co-evolutionary relations between technics and the human, as well as Gilbert Simondon's philosophy of technology and its impact on individuation, I proceed to compare the theories of intermediality in performance offered by such theatre scholars and media philosophers as Chiel Kattenbelt and Henk Oosterling with new media theorist, Brenda Laurel's, conceptualization of human-computer interactions through the framework of dramatic theatre. Subsequently, I will investigate the ways in which embodied perception is mobilized in intermedial performance by looking at N. Katherine Hayles' theorization of embodiment as an experience that arises from one's perception of, and subjectivity in, the world. And finally, the concluding section of this chapter develops what I call "Critical Techno-dramaturgy". This is a conceptual framework that analyzes the ways in which the dramaturgical strategies employed by intermedial performance artists might affect the audience's embodied perception of human-machine interaction.

2.1 Turning (to the) Back

"Do not turn your back to the audience," the director exclaimed. It was the first day of actor training, and the instruction was directed at me. Being unacquainted with the rules of theatre performance, the director's vehement insistence on what is considered the proper etiquette of performance was enough to rattle my fragile confidence. But rather than allowing myself to be consumed by anger, I decided to quiz the director about the "problem" with turning my back

towards the audience. “You don’t seem to understand the conventions of theatre,” he said to me. Refusing to entertain my disruption of his training regime, he went on to inform the class that performers are expected to face the audience at all times. “Do not turn your back to the audience.” That was the rule. There can be no turning back to old habits. Yet my involvement in theatre practice over the years engendered a deep sense of fascination with the back and its physiological, spatial, and cultural implications. The art of performance requires the performer to commit his or her body to a rigorous regime of physical conditioning. Trainee actors often participate in games and exercises that are designed to augment their awareness of space and the proximity of their body to other bodies. By interacting with one another through touch, gesture, and speech, each actor gets to explore the capacity of his or her body to affect other bodies across the axes of time and space. However, most of these interactions tend to privilege the space that is in front of the performer and within the frontal field of vision. What is sacrificed in return is the back and everything that is left behind and unseen.

Why does the back matter in performance practice? Perhaps the same question could also be asked about the front and the space that makes up the field of visual possibility for the human being. Both questions tend towards a more general question about the mobilization of the body in performance, the acquisition of a performative technique that establishes – for both the performer and the spectator – a distinction between the back and the front, or indeed, a privileging of the front over the back. This performative technique entails the physical turning of the human body towards the back, a physiological manoeuvre that appears to resonate with what the philosopher David Wills terms the “technological turn”. The “technological turn,” as Wills explains it, “describes the turn into a technology that was always there” (2008: 3). The notion of the turn itself, he argues, “implies a type of technologization” that bears the capacity for transformation (2008: 3). In this sense, Wills’ inquiry into the nature of the “technological turn” is

simultaneously a study of the technological origins of the human as articulated by the physical act of turning. And it is this “sense of *articulation*” involving an inflection or a bending of limbs that undergirds the logic of the “technological turn” (2008: 3). Thus, Wills believes that technology, or more precisely the “technological turn,” happens at the moment when there is “any articulation at all” (2008: 3). The technologizing of the human originates in the turning that turns it into a technological thing, thus implying that the human is always already technological.

The relationship between the human being and the mechanical or artificial appears to be characterized by the role of the limbs in the fashioning of tools that are external to the body. This physical connection between the human body and the tool is what Wills refers to as “a prosthetic articulation,” as the human becomes technologized through its interaction with the external implements that it creates. However, even as he acknowledges the prostheticity of the human-mechanical relationship, Wills is careful to resist the anthropocentric tendency of treating the human being as the protagonist and master of the “technological turn”. Instead, he pushes beyond the human-mechanical relationship by thinking “developmentally upstream from the articulation of a limb” with the aim of conceiving a technology that is biological – a technology that grows and bends “outside itself deep within itself” (Wills 2008: 4). What is technological in the biological being is its capacity to articulate itself through the autopoietic processes of self-generation and reproduction. In other words, the technological resides in the articulation of movement, as evidenced by the self-division of a cell, or in the case of the human, by walking.

The notion of technology as mechanicity, as Wills points out, is situated in the practice of locomotion. Indeed, the biomechanics of walking accounts for the risk of falling and the threat of returning to the earth that is external to the body. This is why walking necessitates the calibration of the movement of the limbs and the realignment of the body’s centre of gravity in order for the human animal to counter the disequilibrium of each movement by turning its body from side to

side as it advances forward. Wills contends that with every turn made to the left or the right when walking, the human animal deviates from itself as a forward-looking creature by moving towards the back (2008: 5). What this means is that every turn, however slight, is a turning to the back and towards what is behind the body. For Wills, any departure from the linearity of forward motion opens up the question of what is behind and thus implies “a thinking of what is behind, a thinking of the back” (2008: 5). Thinking back as it moves forward, the human turns (its) back to acknowledge the technological origin. (The act of turning to the back also calls to mind the notions of memory and archivation, which I will be exploring in Chapter 6). *Dorsality* is the name that Wills accords to this turning from behind and in the back of the human being, a dorsal turning that turns it into “something technological” or “some technological thing” (2008: 5).

In redefining the human-mechanical relationship through the concept of dorsality, Wills reminds us of the importance of discerning the historic relations between *bios* (life) and *tekhne* (craft). There is neither a priority of one over the other nor the rigorous purity of the biological organic or the mechanical. Those who privilege the organic over the mechanical tend to overlook the originary mechanics involved in the evolution of species by disregarding the “becoming-technological of biological self-organization or self-programmation” (2008: 5). Conversely, those who harbour a technocratic faith in technological progress might be inclined towards the endowment of the human being with the absolute power to operate and master everything that it produces according to its will. Such an anthropocentric perspective of technology is predicated upon the image of the pre-technological human as the inventor that discovers the technological and exercises control over the technological things that it produces. Responding to the seemingly unquestionable linear advance of technology, Wills argues that the dorsal turn can operate as a form of resistance by maintaining what he calls the “dorsal chance”. Wills sees the “dorsal chance” as the surprise or accident that “cannot be *foreseen*” (2008: 7). Therefore, it is a chance

that comes from behind in order to question the technocratic faith and its control over the ways in which the relationship between humans and technology is construed (2008: 7). In other words, the “dorsal chance” comes from outside the field of visual possibility, as the human being cannot see what is behind without making a turn that is essentially a dorsal turn towards the back.

Through the dorsal turn, which is the turning that originates in the back, the human sees the operation of the technological inside itself, and in particular, the role of the vertebral column in enabling the human body to adopt the upright stance. The upright stance is, as Wills describes it, the “pose of our fundamental technological articulation and actualization” (2008: 8). Turning to the French anthropologist André Leroi-Gourhan’s important study of human evolution in relation to technicity, Wills attributes the human privileging of the frontal visual perspective to the adoption of the upright stance. According to Leroi-Gourhan’s theorization, the freeing of the hand from motor function (i.e., walking) allowed the face of the human animal to become forward-looking. Combining the upright stance with the newfound freedom of the hands to feel and grasp what is in front of it, the human is able to manipulate and control the exteriority of its body by making and using tools. Leroi-Gourhan describes “the concept of tools as being a “secretion” of the anthropoid’s body and brain,” thereby gesturing towards the co-evolution of the human and the technological (1993: 91). Whereas an anthropocentric perspective of the human-mechanical relationship would be inclined to “perceive our intelligence as being a single entity and our tools as the noble fruit of our thought,” Leroi-Gourhan notes that the Australanthropians (an early form of hominid) “seem to have possessed their tools in much the same way as an animal has claws [...] as if their brains and their bodies had gradually exuded them” (1993: 106). Leroi-Gourhan believes that the techniques of the Australanthropians maintained a fidelity to phyletic evolution, so much so that their tools appear to be “literally ‘incorporated’ in the living organism” (1993: 106). The incorporation of tools into the living

organism as part of its being is an idea that challenges any attempt to establish a firm division between the human and the technological.

For Leroi-Gourhan, the tool is not the “brainchild” of a so-called intelligent human being. Rather, it is the adoption of the upright stance that affords the human animal the opportunity to reconfigure its relation to technology by acquiring the potential to make tools. But this moment of opportunity also marks the point where the human abandons the animal that is its past – that which is left behind. As David Wills reminds us, once the upright stance occurs, the anthropoid human turns its back on the animal and “reconfigures the knowable other within a frontal visual perspective, prioritizing a certain version of the *fore-seen* or *fore-seeable*” (2008: 8-9). The frontal visual perspective afforded by the freeing of the hands and face from locomotion endows the human with a foresight that emphasizes the forward-looking linearity of its existence. Wills argues that what is forgotten in this prioritization of the frontal perspective is “the extent to which technological is, to begin with, literally in the back” (2008: 9). While the upright stance reconfigures the relationship between the human and the technological, it also inaugurates “a radically new sense of how we conceive of and determine what is outside us in general and behind us in particular, a new definition of the dorsal” (2008: 17). The human is thus defined by the technologization of the body in its “becoming-prosthesis” or “becoming-dorsal” (2008: 9).

Wills’ concept of dorsality points towards the technological origins of the human by emphasizing a technology that *is* us and *in* us. This technologization begins in the back – specifically the dorsal spine. Just as the tool aspires to control the exterior space beyond the confines of the body, the human is itself a technological prosthesis that affects its relation to the outside world. We see this “becoming-prosthesis” of the human in the Western Australian aboriginal performance, wherein the technological combination between the upright stance and the swinging of the hand is needed to set the returning boomerang aloft. Moreover, the

boomerang's capacity to return to its origin upon completing its flight facilitates a quicker redeployment of the tool. Because a poorly executed throw or the wearing down of the wood over time can affect the returning capacity of the aerofoil, neither the human thrower nor the returning boomerang is subservient to the other. Instead, the spatial relation between the human and the exterior world is characterized by the co-operation between the human body and the tool in terms of their technological capacities. By inverting the presumption of a derived and contrived technology that is under human control, Wills believes that we can resist the reductive opposition between frontal and dorsal in order to acknowledge the co-evolutionary and co-determining relations of the human and the technological. Understanding the co-evolution of technics and the human is pertinent to the study of intermedial performance, where human actors perform with different technological devices in a variety of settings, ranging from the confines of a black-box theatre to the urban spaces of a vibrant city. Furthermore, these performers often rely on such artificial memory devices as written scripts and video recordings in order to articulate the words and gestures that cast him or her as an individual player within the performance milieu. In light of the interactions between human actors and technology through performance, the co-evolution of technics and the human across space and time deserves further inquiry.

2.2 Epiphylogenesis: The Co-Evolution of Technics and the Human

In *Technics and Time I: The Fault of Epimetheus (TTI)*, the French philosopher Bernard Stiegler argues for a concept of “epiphylogenesis,” which he describes as the “conservation, accumulation, and sedimentation of successive epigeneses, mutually articulated” (*TTI* 1998: 140). For Stiegler, this epigenetic sedimentation is “only possible when the transmission allowing for the sediments is of an absolutely technical, nonliving essence” (*TTI* 1998: 141). What this means is that beyond the biological evolution of the human species, the human being is also

affected by events that take place in his or her life (epigenetics) through inorganic means (technics). The concept of epiphylogenesis thus refers to the inter-generational transmission of epigenetic information accumulated within an individual's lifetime by means of artificial memory devices (*TTI* 1998: 135). As a result, the memory of an individual human being is exteriorized and conserved in the form of technical objects.

In articulating a philosophy of technics and time, Stiegler critiques Heidegger's theory of the presence of being by locating the temporality of *Dasein* outside of direct experience. For Heidegger, "being-towards-death" forms the temporal basis of *Dasein*, which is the condition of being. As mentioned in Chapter 1, where we examined Heidegger's theorization of being in relation to the concept of *poiesis*, the term *Dasein* refers to the human's "being-there" or "being-in-the-world". The term is explicitly human in the sense that only human beings are able to question the very nature of being itself (*Being and Time [BT]* 1962: 12). *Dasein* as "being-in-the-world" is temporal because it situates existence as "being-there," between "already" and "not yet" – that is, between birth and death. For this reason, the horizon of experience that constitutes *Dasein* is the anticipation of death (*BT* 1962: 437). In other words, *Dasein*, in its existence as "being-towards-death," can neither experience the past that it has not lived nor the future that transcends the moment of its death.

Responding to Heidegger's departure from the issue of technics in relation to the temporality of being, Stiegler advances a theory of technics that foregrounds the prosthetic constitution of *Dasein*. Experienced prosthetically, *Dasein* presupposes a theory of being based on this exteriorization by means of technics, such that the temporality of *Dasein* is situated outside of direct experience. In describing being as a technical return to the absent experience, Stiegler explains that "the paradox is to have to speak of an exteriorization without a preceding interior: the interior is constituted in exteriorization" (Stiegler *TTI* 1998: 141). What this means

is that knowledge of our being in the world does not come from what Heidegger refers to as “an authentic presence,” which privileges the direct experience of temporality. Rather, it is constituted differentially in relation to that non-origin of being (i.e., experience) through a supplementary process of exteriorization (i.e., the prosthesis of memory).

In contrast to Heidegger’s treatment of technicity as an obstacle that is nonetheless an important question for thought, Stiegler contends that the human being’s access to the non-lived past is always already technical and inscriptive. Artefacts such as books, photographs, and the Aboriginal Australian boomerang can offer us a tangible connection to the past that belongs to our forebears, the past that we did not live. What is inscribed in these artefacts is not only the information about the events or way of life that existed at a particular moment in historical time, but also the trace of invention that brought forth the object into being. Heidegger would probably agree with this point. Yet, according to Stiegler, technical objects that are not specifically designed for the exteriorization of memory also bear the trace of the generative gesture of technical invention. For instance, the discovery of the technique of flint-knapping by early humans allowed them to fabricate tools and objects. Ancient knapping flints were not created for the purpose of storing information about the live events (i.e., the epigeneses) of individuals. Nevertheless, it is possible to understand the life and behaviour of early humans by examining the tools and objects that they produced. We should note the importance of repetition in the fabrication of tools and objects, which points to the question of archivation. The discovery of the boomerang could not have happened without an organic being willing to attempt the throw over and over again. The repetitive quality of the production and usage of tools embodies the archival prostheticity of the human being’s relationship with technics. As such, Stiegler’s concept of epiphylogenesis seeks to understand the co-determining relations between humans and technics in time, as well as the ways in which the history of technics intersects the history of human life.

Stiegler's concept of "epiphylogenesis" does not privilege the human as the powerful inventor of technology. Instead, technics and the human are co-constituted. Referencing André Leroi-Gourhan's anthropological investigation of the relationship between humans and technology, Stiegler asserts that the human is invented precisely by its use of technology. In order to transcend the limits of the hand, the human is constantly reaching beyond himself or herself by way of technics. As Stiegler explains, "[p]rostheticity, here a consequence of the freedom of the hand, is a putting-outside-the-self that is also a putting-out-of-range-of-oneself" (*TTI* 1998: 146). Drawing on Leroi-Gourhan's anthropological work, Stiegler contends that such a quest to reach beyond the physical limitations of the human is not a reflection of intelligence but a quest for mobility:

The conquest of mobility, *qua* supernatural mobility, *qua* speed, is more significant than intelligence – or rather, intelligence is but a type of mobility, a singular relation of space and time, which must be thought from the standpoint of speed, as its decompositions, and not conversely (speed as the result of their conjunction). (*TTI* 1998: 146)

Once the human being acquired the ability to stand upright, a phenomenon that begins in the back, it began to invent sophisticated tools in order to facilitate this quest for mobility. It is in this way that the co-evolution of technology and the human unfolds in time. In return for the augmentation of mobility *qua* speed that the tool affords, the human adapts itself to the technical object by reconfiguring its relation to it. But besides conceiving mobility in the capacity speed (mobility *as* speed), Stiegler believes that it is necessary to consider how speed, which is a singular relation of space and time, might relate to Jacques Derrida's concept of *différance*, as "différance is itself also a conjunction of space and time more originary than their separation" (*TTI* 1998: 146). Thus, Stiegler proposes that *différance* has to be "thought *as* speed," a notion

that points to the “temporalizing of space” and the “spacing of time” as articulated by the double movement of deferral and differentiation (*TTI* 1998: 146).¹³

“Différance,” as Stiegler elucidates, “is the history of life in general, in which an articulation is produced, a stage of *différance* out of which emerges the possibility of making the *grammè* as such, that is, ‘consciousness,’ appear” (*TTI* 1998: 137-8). This does not mean that the *grammè* emerges as a consequence of human or nonhuman consciousness. Instead, as Stiegler points out, the notion of intentional consciousness “finds the origin of its possibility before the human,” such that its emergence marks the appearance of the *grammè* as such. In other words, the emergence of intentional consciousness is in fact the articulation of *différance*, which is understood as deferral and differentiation. In terms of differentiation, Derrida describes *différance* as the production of a structural difference in which different elements in a system become meaningful through a reciprocal determination with other elements (1981: 21). This synchrony of elements is indicative of the spacing of time. At the same time, Derrida notes that *différance* should also be understood as deferring, in the sense that “the very principle of difference which holds that an element functions and signifies, takes on or conveys meaning, only by referring to another past or future element in an economy of traces” (1981: 28). This deferral component of *différance* points to the genesis of elements and how the significance of each trace or articulation of an element as it emerges is influenced by the elements that came before it and the possible permutations of that element that could emerge in the future. In this way, the meaning of the element is constantly deferred in a process of retention that temporalizes the space in which the traces of the element are articulated.

¹³ In “*Techno*logy or the Discourse of Speed,” David Wills makes the point that technology “is generally related to either reduced labour, increased speed or both” (2006: 237). For instance, language facilitates the externalization and transmission of thought. But given that “language itself mutates at the speed of light by means of a whole range of displacement effects,” Will suggests that language cannot be a *techne* that operates on its own (2006: 239). Instead, language is susceptible to the effects of other forms of technology that could alter its configuration.

To think of Derrida's concept of *différance* as speed, which is the singular relation of space and time, is to refer to life as the history of inscription and retention by genetic as well as technological means, whereby the history of the possibilities of the trace is understood as "the unity of a double movement of protention and retention" (1997: 84). For Derrida, the trace is "the *différance* which opens appearance [...] and signification," thereby "[articulating] the living upon the nonliving in general" as the point of "origin of all repetition" (1997: 65). Derrida's mention of the articulation of the living upon the nonliving appears to gesture towards the invention of technics as the means by which the double movement of inscription and retention – the technological exteriorization of memory – is articulated. In turn, the exteriorization of memory by way of technics foregrounds the originary technicity of the living being (from the amoeba or the annelid to such vertebrates as *homo sapiens*) that is always already technical in terms of the complex internal operations that keep it alive. This originary technicity of the living being is at once a deferral of life against the threat of entropy (or disorder) and the differentiation of the living from the nonliving (*TTI* 1998: 139-40). *Différance* is thus a general history of life, which is a general history of the *grammè* (Derrida 1997: 84).

The *grammè*, Stiegler observes, "structures all levels of the living and beyond, the pursuit of life by means other than life," that is to say, by technics (*TTI* 1998: 137). Human writing, for instance, is just one specific expression of the general concept of the *grammè*, which is older than all forms of human writing (Derrida 1997: 84). Because the emergence of living beings marks the emergence of the *grammè* as such, Stiegler argues that the history of the *grammè* is "that of electronic files and reading machines as well – a history of technics – which is the invention of the human" (*TTI* 1998: 137). Such is the construction of Stiegler's "technical being," in which we have "[t]he technical inventing the human, [and] the human inventing the technical" by way of the co-determining, prosthetic relations between the technological and the human (*TTI* 1998:

137). Moreover, the co-evolution of technics and the human also opens up the possibility of individuation, whereby “epiphylogenesis bestows its identity upon the human individual: the accents of his speech, the style of his approach, the force of his gesture, the unity of his world” (Stiegler *TTI* 1998: 140). The transmission of these traits from one generation of living beings to another does not occur only by genetic means, but also through the invention of technics. Epiphylogenesis affords each successive generation of living beings the opportunity to participate in a process of individuation through which individuals emerge and act within a milieu that is mediated by technical objects. The intersection of technology and individuation is pertinent to theatre performances, as performers often rely on such artificial memory devices as written scripts and video recordings in order to articulate the words and gestures that cast him or her as an individual player in relation to other players and objects within the performance milieu. In the next two sections, I will examine Gilbert Simondon’s philosophy of technology and the concept of individuation, as well as the role of technics in the exteriorization of memory and in what Simondon calls “transindividuation”.

2.3 Technology and Individuation

While Stiegler’s theorization of the co-evolution of technics and the human appears to reinforce Derrida’s interpretation of *différance* as the differentiation and deferral of life by means of the double movement of inscription and retention, the concept of epiphylogenesis also builds upon Gilbert Simondon’s philosophy of technology and individuation. Simondon proposes a dynamic conception of individuation as a continuous process of transformation rather than an intrinsic feature possessed by an individual. In his critique of the Substantialist and Hylomorphic understandings of the individual as a fully constituted being, Simondon asserts that classes of individuals may possess an intrinsic essence, but the emergence of the individual does not precede

the classes of species.¹⁴ Substantialism holds that the principle of individuation is intrinsic to the individual as a substance contained within it, whereas the Hylomorphic perspective purports that individuation results from the imposition of a formal structure on formless matter (Simondon “Genesis of the Individual” 1992: 297). Both the Substantialist and Hylomorphic perspectives presuppose the constitution of the individual as self-evident. As such, individuation is not understood as an ongoing process.

In response to the Substantialist and Hylomorphic theories of individuation, Simondon argues that the individual should be viewed “ontogenetically,” whereby the individual is involved in an ongoing process of individuating itself. Ontogenesis is not simply the genesis of the individual. Rather, it is that which brings forth the development (or becoming) of the individuated being. For this reason, Simondon seeks to understand the multivariate unfolding of ontogenesis by analyzing “the individual from the perspective of the process of individuation rather than the process of individuation by means of the individual” (“Genesis” 1992: 300). He notes that the process of individuation does not place too much emphasis on the individual, nor does it focus on the individual in isolation from the world. Instead, the individual is individuated within a milieu. Ontogenetic development mediates between the internal operations within the individual and the external forces of the milieu (“Genesis” 1992: 300). Hence, the individual emerges from a milieu and acts within it. Simondon calls this dynamic interaction between the individual and its milieu the “individual-milieu dyad,” which comes to light by way of individuation.

¹⁴ The term Hylomorphism is derived from the Greek word “hyle”, which means wood or matter, and “morphe,” which refers to the “form” of the matter. Aristotle developed the theory of Hylomorphism to explain the existence of being as a combination of form and matter. On the basis of such a conception of being, the Hylomorphic understanding of objects presupposes the imposition of form as an a priori ontology upon matter. In this sense, material transformation occurs whenever the form of the matter is altered (*Metaphysics* 1045a26-29). For instance, when a lump of clay is shaped into a jar, the clay as matter is said to have changed its form from a “lump” to a “jar”.

The art of theatre performance appears to embody this concept of the “individual-milieu dyad,” as human actors are situated within a performance milieu where they deliver dialogues and gestures that convey meaning to the audience members. The milieu within which an actor performs can affect his or her performance, just as his or her performance might influence the way in which the audience members perceive the performance environment. As such, the rendering of the “individual-milieu dyad” in the context of the theatrical milieu occurs through what Simondon describes as “the process of individuation” from which the human actors in the performance are individuated (“Genesis” 1992: 300). Besides, if the actors in the performance are afforded the opportunity to engage with a myriad of technological devices, as is the case in intermedial performances, each of them will be able to individuate himself or herself as an individual player who performs in relation to other players and objects within a shared milieu.

Simondon considers individuation to be a primordial process, especially in terms of how it “brings the individual into being and determines all the distinguishing characteristics of its development, organization and modalities” (“Genesis” 1992: 300). The individual is constituted as an individual out of a pre-individual field of potentialities. As part of the ongoing process of individuation, which is a process of becoming, the individual occupies “only a certain phase of the whole being in question – a phase that therefore carries the implication of a preceding preindividual state” (“Genesis” 1992: 300). This preceding pre-individual state contains all the potentials that can be expressed in various ways within the individual that emerges as a consequence of individuation. However, Simondon also emphasizes that the individual is not the totality of the being, as its appearance is only “the result of a phase in the being’s development during which it existed neither in the form of an individual nor as the principle of individuation” (“Genesis” 1992: 300). The individual, according to Simondon’s theory, is not the ground of individuation but only a phase in the ontogenetic development of the larger entity. In the same

way that the DNA operates as the code of potentials that can unfold in various directions in the production of the living being, the pre-individual “realm” is where the invention of the individual begins. However, he is quick to emphasize that the pre-individual is neither a state of non-identity nor an undifferentiated mass, but rather a state of potentiality or “supersaturation” that endows the individual with the possibilities for transformation. The individual, in turn, is never complete, for it always contains untapped potential that unleashes “additional possibilities for metamorphosis” and further individuations (“Genesis” 1992: 301). Since the process of individuation can bring forth further iterations of the individuated being, how might Simondon’s philosophy of individuation explain the emergence of the technical being as an individual?

Simondon approaches the question of the technical being by resisting the dualist distinction between nature and culture that aims to separate the natural from the artificial and vice versa. Instead of assuming that the difference between natural beings and technical beings is a difference in substance, Simondon argues that the modes of existence of what he calls “natural objects” and “technical objects” are not different in kind or nature but ontologically different in degree. What this means is that natural objects and technical objects exist differently in terms of the analogous relations between them (*Mode of Existence of Technical Objects [METO]* 1980: 48). For this reason, Simondon believes that “the evolved technical object [...] approximates the mode of existence of natural objects,” particularly as it tends towards internal coherence and “a closure of the system of causes and effects which operate in a circular fashion within its boundaries” (*METO* 1980: 46). In turn, the technical object becomes a part of this system of causes and effects by incorporating the part of the natural world that “intervenes as a condition of its functioning” (*METO* 1980: 46). Put differently, the technical object emerges in what Simondon terms “an associated milieu” and continues to interact with that milieu throughout its evolution. However, he is quick to caution against the assumption that technical and natural

objects are ontologically similar, for the similarity is not absolute but analogous. Technical objects, he contends, tend towards concretization in their genesis, whereas natural objects are concrete from the start, even though they may continue to evolve and mutate over time. As such, Simondon proposes the “study of the systems of functioning in concrete technical objects” that traces the development of the technical object throughout its evolution (*METO* 1980: 48). This is essentially a call to investigate the process of technical individuation through which the technical object comes into being.

“Every technical object,” Simondon argues, “undergoes a genesis” that modifies the individuality of that object in the course of the genesis (*METO* 1980: 11). At every phase of its ontogenetic evolution, the technical object is re-immersed into its pre-individual reality and further individuated. As a result, the past evolution of a technical being remains as an essential part of this being in its technical form. “An individual technical object is,” as Simondon explains:

Not such and such a thing, something given [...], but something that has a genesis. The unity, individuality, and specificity of a technical object are those of its characteristics [that] are consistent and convergent with its genesis. (*METO* 1980: 12)

In becoming a specific and unified individual at a particular stage of its genesis, the technical object is affected by the characteristics from its past evolution as well as its pre-individual reality. The technical object contains the seeds of its genesis, as it is “present at every stage of its becoming” (*METO* 1980: 12). In light of its generative potential, Simondon refers to the technical object as “a unit of becoming” (*METO* 1980: 12). What this means is that the technical evolution does not originate from an anthropological source. Instead, as Bernard Stiegler clarifies, the technical evolution in Simondon’s philosophy of technology “stems completely from its own technical object,” as the human being “is no longer the *intentional actor* in this dynamic [...] [but]

its *operator*” (*TTI* 1998: 66). The human is not the intentional origin of technogenesis but the operator of the technical object that enacts the technical transformation. At the same time, Simondon observes that “[western] culture fails to take into account that in technical reality is a human reality,” an oversight that engenders a defensive cultural attitude against technics (*METO* 1980: 1). Indeed, the isolation of the technical object from human reality serves only to perpetuate the opposition between the human and the technical.

According to Simondon, twentieth-century western culture had regarded technical objects as either machines that only provide utility for a variety of tasks or robots that threaten to invade and destroy human civilization. The first attitude places the machine in the service of human needs in order to contain the extent of its powers. The machine is enslaved on the grounds of protecting human beings. The second attitude is predicated on the fear of automatism, which rides on the assumption that “an increase in and improvement of automatism would lead to the bringing into oneness and mutual interconnection of all machines – the creating of a machine made up of all machines” (*METO* 1980: 3). However, Simondon does not subscribe to the belief that machines would supplant human beings, for he regards the dangerous aspects of the robot, such as the threat of it imposing its will on the world, as more a product of human imagination than a menacing actuality. The level of automatism in a machine does not necessarily define its autonomy. Instead, the actual autonomy of the machine, as Stiegler points out in his reading of Simondon’s philosophy of technology, resides in its indetermination and its tendency towards entropy (*TTI* 1998: 66). For Simondon, the level of indetermination within the machine, and between the machine and its milieu, is affected by the recurrence of causal effects that transform the technical object and its relations with the world. Such is the ontogenetic development of the technical object that is brought about by a process of transduction that causes internal resonances within the object and between the object and its associated milieu. In resisting a teleological

resolution, the indetermination of the machine becomes that condition which allows it to be sensitive and responsive to the functions of other machines in a particular milieu (*TTI* 1998: 66). From the ontogenetic perspective, this is what Simondon means by “technical individuation”.

Stiegler, following Simondon, holds that the concretization of the technical object is its individuation – that is, its “becoming-individual” (*TTI* 1998: 72). The technical object, in its “becoming-individual,” produces an external milieu that involves the “recurrence of causality” (*METO* 59). As noted above, this recurrence of causal relations also happens within the technical object. What connects the recurrent causal relations in the internal milieu of the technical object and the external milieu is the associated milieu. By operating in relation to this associated milieu, the technical object that exists in the form of a machine is able to construct an environment that is simultaneously technical and geographical. Simondon calls this hybrid environment the “technogeographic milieu”. The construction of the technogeographic milieu by way of the machine’s operations is not a human construction. Simondon emphasizes that the machine’s construction of an associated milieu is not an attempt at humanizing nature by imposing the will of human beings on it, which is tantamount to what Heidegger refers to as the placing of nature on “standing reserve”. Instead, Simondon sees in the emergence of the technogeographic milieu a potential for humans to work with – rather than against – the synergistic relations between machines and their associated environments. Even though he believes that the existence of the technogeographic milieu depends on a human intelligence that is capable of “an anticipatory functioning which is discoverable neither in nature nor in already constituted technical objects,” he does not seek to propound a discourse of human mastery over machine-environment or human-machine relations (*METO* 1980: 60). According to Stiegler’s interpretation of Simondon’s philosophy of technical individuation, the capacity of the human operator to anticipate the concretization of the technical object vis-à-vis its individuating dynamic

presupposes the technical object as an individual (*TTI* 1998: 81). In other words, the anticipatory functioning of the human being does not precede the technical object.

As Stiegler has demonstrated through his concept of epiphylogenesis, the human being is not the cause of technical evolution. The freeing of the hand from locomotion brings forth a transformative turn towards the fabrication of tools that mediate the human's relation with the external milieu. In this sense, the human is invented as a result of technical evolution. Such a relationship between technics and the human is also informed by what Stiegler dubs "a technological maieutic" between the technical object and the system that comprises other machines, natural resources, animals, and human beings (*TTI* 1998: 75). The human inventor, in anticipating the concretization of the technical object in its genesis, listens to the "cues" within the object and reads from the "text" of matter (*TTI* 1998: 75). The human being's anticipation of the individuated technical object pertains to the notion of time as *différance*. This relationship with the process of technical evolution is at once a projection towards the future (a deferral) as well as a differentiation that individuates the human being as an individual in an ongoing process that unfolds over time. But just as the technical individual operates with its associated milieu, the human individual is individuated within a socio-cultural milieu. In turn, the co-individuation of the human individual with its socio-cultural milieu incorporates the process of technical evolution in an aggregation that points to what Simondon calls the phenomenon of "transindividuation". Understanding the phenomenon of transindividuation would help to shed light on our analysis of human-machine interaction in intermedial performance, as the human actors are constantly individuating themselves in relation to the technological objects with which they share a common theatrical milieu. What follows is an examination of Simondon's theory of transindividuation and its impact on the intersection of technics and memory in the context of intermedial performance.

2.4 Technics, Memory, and Transindividuation

The transindividual unity, according to Simondon, is a relation involving two forms of individuation – “psychic individuation” and “collective individuation” – that are engaged in a “reciprocal relationship” with each other (*L’Individuation Psychique et Collective [LPC]* 1989: 19). While psychic individuation may be considered an “interior individuation” that operates in the individual living being (*LPC* 1989: 19), it is, as the French philosopher Muriel Combes emphasizes, *not* an “interiority” that exists solely within the individual or in isolation from the external milieu (2013: 30). Combes proceeds to explain that the human psyche, as Simondon understands it, “is constituted at the intersection of a double polarity, *between* the relation to the world and others and the relation to the self (without us really understanding what this now desubstantialized ‘self’ consists in)” (2013: 30). As such, psychic individuation prefigures the sociality of the individual’s relationship with its milieu, and also with other individuals that operate within that milieu. It is for this reason that Simondon’s theory of transindividuation regards the process of individuation as always already social. He notes that the operation of individuation occurs in a group that “comes into existence when the forces of the future harboured within a number of living individuals lead to a collective structuration” (*LPC* 1989: 184). Not only is there an individuation of the group as an individuated entity, there is at the same time an individuation of a group of psychic individuals as a collective. However, the turning of psychic individuals towards the collective does not presuppose a belonging to a community. Instead, the collective arises from the operation of individuation.

“[P]sychic individuation,” Stiegler contends, “attains social individuation by means of technical individuation, and by interiorizing technical individuation” (qtd. in O’Gorman 2010: 466). Stiegler believes that the passage from psychic to collective individuation that characterizes transindividuation is mobilized by a process of technical individuation, which opens up the

question of selection in regard to memory retention. There are, as Stiegler explains, three different types of memory retention: primary, secondary, and tertiary. Primary retention refers to the present moment or “big now” of perception, whereas secondary retention results from the phenomena of cognitive reproduction and imagination. Tertiary retentions point to the prosthetic supports of the process of individuation. Stiegler argues that primary retention is always primary selection in the sense that the selection is brought about by secondary retentions that are determined by factual and prosthetic conditions that provide access to the past through artefacts that contain tertiary retentions (2009: 46). The technical mediation of memory through the use of prosthetic supports entails an act of construction that selects specific memories for retention. The construction of technical objects that contain tertiary retentions actualizes the individuation of pre-individual potential, which is the source of psychic and collective individuation (Stiegler 2009: 48). Consequently, the technical mediation of pre-individual potential, in which technical objects provide the necessary prosthetic support for transindividuation, appears to reinforce Stiegler’s interpretation of the pre-individual domain as a repository of tertiary retentions.

In turning towards the collective, the psychic individual exceeds itself. Psychic individuation carries itself forward as “originally collective” by going beyond itself into a future that exceeds its own disappearance in death (Stiegler 2009: 49). The psychic individual exteriorizes its memory by means of prosthetic supports that constitute tertiary retentions. Stiegler contends that the technical exteriorization of memory is temporal in the sense that it facilitates the production of transindividual relations with future generations of psychic individuals. As such, he shares Simondon’s belief that transindividuation can happen only on the basis of a material and artefactual conservation of its trace. Transindividuality, as Simondon understands it, is exemplified by an “interhuman relation” effected through “the intermediary of the technical object,” such that the object that emerges from technical invention “carries with it

something of the being that produced it” (*LPC* 1989: 29). For instance, a tape recording containing information about an individual’s life at a particular point in time provides future generations of individuals with an access to the past that would otherwise remain inaccessible to them (and here we are reminded of the audience members in Beckett’s *Krapp’s Last Tape* encountering the protagonist, Krapp, as he listens to the tape recordings of his younger self speaking). In this way, an interhuman relation is invented through the facilitation of the tape recorder as a technical prosthesis for memory retention.

However, a significant point that Stiegler notices in Simondon’s theory of transindividuation is the treatment of information without specific regard to its supports and vehicles of transmission, including such media technologies as books, audiotapes, and videos (*LPC* 1989: 51; “Theatre of Individuation” 2009: 54). Stiegler takes issue with this “forgetting” of the supports of information, which he regards as a forgetting of technics as the “originary default of being” and the “originary lack” or incompleteness that accounts for the prostheticity of human Dasein (2009: 54). He believes that Simondon has overlooked how technicity, in constituting the condition of access to the past as preindividuality, unfolds a tangible sense of temporality and, in turn, the capacity for projecting the future (2009: 54). For Stiegler, technicity is the very condition that “opens up individuation to the question of death,” and thereby foregrounds the incompleteness of the human being (2009: 54).

The forgetting of technics as the “originary default of being” recognizes the temporality and finitude of Dasein. In light of its thrownness in the world, Dasein seeks to discover the past that it did not live, while anticipating its own death, which it does not know in advance. “What Dasein knows, and knows radically,” Stiegler observes, “is the indeterminate, what cannot be calculated, and what, for Dasein, cannot essentially be proved” (*TTI* 1998: 231). Dasein’s anticipation of its death signals an indeterminacy that is at once a deferring of the knowledge of

the end and a differing of that end from the ends of other beings. Because Dasein can only experience its own death, an end that it cannot know in advance, it is able to differentiate and individuate itself in time, as “time as Dasein is the true principle of differentiation” (*TTI* 1998: 231). Hence the temporality of Dasein is the individuating process that reiterates the incompleteness and finitude of Dasein. Stiegler sees the temporality of Dasein in technological terms by claiming that “[t]he temporality of the human, which marks it off among other living beings, presupposes exteriorization and prostheticity” (*TTI* 1998: 172). What is exteriorized by way of prosthetic supports is the memory of the human being, which is a temporalizing of technology as well as a technologizing of temporality. As Stiegler asserts, “there is time only because memory is ‘artificial’” (*TTI* 1998: 172). Memory is artificial because it is placed outside of the human being, an exteriorization that involves the use of “technical prostheses” for the storage of memories that can be transmitted across generations. This technical exteriorization of memory as “tertiary retention” supports the process of transindividuation by unfolding the condition of access to the pre-individual reality – in essence, the “already-there” – of the human individual. The constitution of time is thus contingent on the artificiality of memory as it is exteriorized by technical means.

The role of technics in supporting the exteriorization of memory and transindividuation has significant implications for the art of theatre performance. Performers often rely on various mnemo-technics in order to learn and memorize the speeches and gestures that are integral to their respective performances on stage. For instance, when an actor is attempting to memorize a monologue, he or she would associate an object – say, a boot – with a particular phrase that corresponds to the image of that object. In this way, the object serves as a kind of mnemo-technic device that facilitates the effective memorization of that phrase. Some theatre performers may even make use of audio and video technologies to record their speeches and gestures during

rehearsals. Later, when these audio and video recordings are played back, the performers can identify the aspects of their performance where further refinement is needed. It is thus apparent that the technicity of performance is always already present, even though it tends to exist on a sliding scale. Memorization and mnemo-technics may constitute the basis for articulating the prosthetic and technical quality of performance. But the technicity of performance may also consist of more sophisticated technological devices, such as audio and video technologies, that are capable of influencing the retention and transmission of memory between the performers and the audience members. And as I will demonstrate in Chapter 3, in intermedial performances like Blast Theory's *Rider Spoke*, the use of media technologies that record images and sounds for both instant and future replay may serve to support the establishment of transindividual relations among intermedial artists, performers, and audience members as they interact with each other across different temporalities. Given the impact of technics on memory transmission and the phenomenon of transindividuation, the next section will explore the perceptual effects that could emerge from the juxtaposition of media on the intermedial stage. To this end, I will be examining Brenda Laurel's influential work on human-computer interactions in conjunction with the theories of intermediality espoused by such theatre scholars and media philosophers as Chiel Kattenbelt and Henk Oosterling.

2.5 Theories of Intermediality

As early as 1818, the romantic poet Samuel Taylor Coleridge was already using the term "intermedium" or "intermedia" in his criticism of art (Raysor 1936: 33). For more than a century, the term remained at the fringes of artistic practice until the Fluxus artist Dick Higgins decided to revisit it in 1965. According to Higgins, Coleridge used "intermedia" to "define works which fall conceptually between media that are already known" (1965: 52). Realizing the flexibility of

Coleridge's term, Higgins used it to theorize those works of art that appear to transcend the traditional disciplinary boundaries of the visual arts, music, dance, and theatre. He felt that the neat categorization of art into different medium-specific practices does not account for the hybridity of such late-twentieth-century artistic movements as his own Fluxus events as well as the intermedial experimental theatre productions of the Wooster Group. Turning his back on media specificity as a means by which to conceptualize works of art, Higgins championed the intermediality of artistic practices that fall "in-between" established media forms.

In recent years, much intellectual attention has been focused on the "inter" prefix in "intermedia". Commenting on the ontological dimension of intermediality, the Dutch media philosopher Henk Oosterling interprets the "inter" prefix as the "going back and forth from one medium to the other, it is a movement in which positions are articulated in the awareness that they are principally relational and provisional" (2003: 43). Oosterling argues that intermediality "reconfigures arts, politics and science, especially philosophy, enhancing an experience of the in-between and a sensibility for tensional differences" (2003: 30). Because intermediality entails the construction of "relational differences" between media that exist in tension with one another, Oosterling believes that a philosophy of difference (one that is akin to Derrida's *différance*) is required to attend to the specific discourses that undergird each medium in an intermedial artwork. These discourses, he contends, are constantly re-negotiated as each medium interacts with other media in the intermedial network. Indeed, the tensional differences between media are pertinent to the conceptualization of intermediality as an experience of the "in-between". As Jay Bolter and Richard Grusin observe in their study of the relationships among different media, "we cannot even recognize the representational power of a medium except with reference to other media" (2000: 65). But while the juxtaposition of media elements involves a differentiation between them, their position and significance in the network is only provisional. For this reason,

Oosterling believes that experience of the “in-between” in intermediality is contingent on the ongoing production of difference between media, which is at the same time a deferring of the meaning of each medium in relation to other media (2003: 44). However, what remains unclear in the theorization of intermediality as the construction of tensional differences between media is its impact on the ontological question of being.

“The in-between,” Oosterling posits, “is the movement that inevitably positions beings” (2003: 45). Yet he is quick to caution against any attempt to reduce the movement of the “in-between” to positions taken by a conscious subject. Even though Heidegger sees Dasein as “Being-in-between” (*Zwischen*), the “in-between” does not happen as a result of two beings coming together or “the *convenientia* of two objectively present things” (*Being and Time* 2010: 128). Instead, as Oosterling clarifies, the factuality of the ‘in-between’ exists before the movement of beings is capable of articulating any position (2003: 45). The “in-between” is connected with what Heidegger calls ‘mood’ (*Stimmung*), such that Dasein can be moved because it is always already in-between things. Oosterling thus construes the ontology of the ‘in-between’ as “inter-esse,” which refers to “the being of the in-between [that] goes beyond shared interests and excludes indifference” (2003: 45). The being of the “in-between” is the being that is concerned about other beings and the world. However, it is worth noting that Oosterling rejects the notion of authenticity that informs Heidegger’s philosophy of being, as human Dasein no longer maintains a stranglehold on the effects of mediation and its tensional differences. “Nowadays,” Oosterling claims, “the intermedial aesthetic experience *par excellence* is perhaps no longer exclusively found in the white cube (the museum) or the dark room (the theatre hall or cinema), but in the public sphere as a spacing of the “inter,” be it physical or virtual” (2003: 46). Focusing on the “in-between” spaces that emerge from the tensions within, and between, different forms of media, intermediality resists the subjugation of mediation under the tyranny of

authentic Dasein and its presumptive role as the definitive ontology of the “in-between” or the “inter-esse”. Acknowledging the tensional differences between media on the intermedial stage unfolds the possibility of subverting the anthropocentric disposition towards the subordination of art to “a cultural or political Idea(l) of a diversity of artistic media and disciplines” that so characterized Wagner’s *Gesamtkunstwerk* (2003: 33). Intermediality in Wagner’s artistic formulation was instrumental, as it did not account for the tensional relations that fall in-between the plurality of media and beings on the stage.

In contrast to Wagner’s *Gesamtkunstwerk*, intermedial performance does not seek to collapse different media elements and artistic disciplines into a singular and seamless vision of multimedia theatre. Instead, intermedial performance celebrates the live interplay between such new media technologies as digital video projection, handheld computers, artificial intelligence, robotics, telematics, as well as the human body as an organic medium that is capable of sensing and perceiving a wide range of natural and mediated stimuli. The British performance scholar Robin Nelson asserts that intermedial theatre is disposed towards “disjunctive principles of composition” (2008: 32). He considers intermedial theatre as a concerted effort to bring together separate media elements without “harmonizing them into a coherent whole,” so as to allow them to play and relate “to each other merely by articulation and juxtaposition” (2008: 32). Through the interaction between new media technologies and the human body, the intermedial stage becomes a liminal space that embraces the dynamic relationships between the technological and human participants (which includes both performers and audiences) in the intermedial performance event. Nelson’s interpretation of intermediality in performance as the production of in-between spaces has gained significant traction in contemporary theatre scholarship.

In their edited collection on intermediality in theatre and performance, Freda Chapple and Chiel Kattenbelt offer the following definition of intermedial performance:

Our thesis is that the intermedial is a space where the boundaries soften – and we are in-between and within a mixing of spaces, media, and realities. Thus, intermediality becomes a process of transformation of thoughts and processes where something different is formed through performance. (2006: 12)

For Chapple and Kattenbelt, intermediality holds much potential for perceptual training and cognitive adaptation. Intermedial performance, they contend, can become the site where both actors and audiences learn to navigate new technological developments in society. This intimacy between technology and the bodies of the actors and audiences appears to correspond with Bernard Stiegler’s concept of “epiphylogenesis,” which theorizes the co-constitution of humans and technology as the evolution of life by means other than life – that is to say, by technics. “Epiphylogenesis,” as we have seen earlier in this chapter, refers to the conservation and transmission of the epigeneses of human individuals from one generation to another by technical means. In other words, any analysis of human evolution has to account for the co-determining relationship between technics and humans that is embodied by their co-evolution in time. This coupling of the human and the technological in a dynamic relationship of co-evolution seems to resonate with Kattenbelt’s employment of the concept of intermediality to explain “those co-relations between different media that result in a redefinition of the media that are influencing each other, which in turn leads to a refreshed perception” among the audience members in an intermedial performance event (2008: 25).

According to Kattenbelt, intermediality assumes a co-relation between different media that results in what he characterizes as a “mutual affect” between them, such that previously existing medium-specific conventions are changed and new dimensions of perception and experience of that medium would emerge. Drawing on Jay Bolter and Richard Grusin’s concept of remediation, particularly the double logic of immediacy and hypermediacy, Kattenbelt argues

that whereas the Internet is a virtual hypermedium, the theatre is a physical hypermedium that allows it to offer a stage for intermediality. As a physical hypermedium, theatre comprises the overlaying of multiple media within the same environment. At the same time, Kattenbelt also emphasizes the “transparency” of theatre by pointing out the different ways in which the term is used in media theory and among theatre practitioners. The manifestation of transparency and immediacy in digital media culture, as Bolter and Grusin observe, is predicated on a logic that “leads one either to erase or to render automatic the act of representation” (2000: 33). The use of the term “transparency” in media theory suggests a “unified visual space” that is akin to gazing out of a window into the virtual world rendered by a particular medium, as the means of production that sustain the illusory effect of immersion remains hidden (2000: 33). Nevertheless, the notion of hypermediacy does not erase or hide the frame of representation. Instead, hypermediacy opens up “a heterogeneous space, in which representation is conceived of not as a window on the world, but rather as windowed itself – with windows that open on to other representations or other media” (2000: 34). Kattenbelt posits that “transparency” in theatre performance tends towards Bolter and Grusin’s theorization of hypermediacy as opposed to their definition of immediacy in digital culture.

As Kattenbelt explains, “theatre is transparent because it foregrounds the *corporeality* of the performer and the *materiality* of the live performance as an actual event, taking place in the absolute presence of here and now” (2006: 37). He observes that the aim of using media technologies in intermedial performance is not to produce the illusory effect of immersion, but rather to heighten the audience’s experience and awareness of the tensions between the different media that interact on the stage. What Kattenbelt is essentially calling for is an embodied conception of intermedial performance, a perspective that accounts for the materiality of bodies and media in their tensional relations with one another. Yet amid the interplay of media

technologies on the stage, what role does the human performer play in the intermedial network? For Kattenbelt, “the performer is the player of different media who acts in the empty spaces between the media,” which explains the use of the prefix “inter” in intermediality (2006: 23). There is a hint of “mastery” in Kattenbelt’s characterization of the performer as “the player of different media”. He seems convinced that the performer, like a marionette who coordinates the movements of her puppets, is responsible for orchestrating and synthesizing the operation of the various media elements that are featured in the intermedial performance event. However, by positioning the performer – who is presumably human in Kattenbelt’s formulation – as the orchestrator of intermedial activity on the stage, might we be discounting the feedback loop that exists between the nonhuman and human participants (including the audience members) in intermedial performance? To address this question, let us look at Brenda Laurel’s examination of the relationship between nonhuman and human entities in human-computer interaction (HCI).

Building on Aristotle’s dramatic theory, Brenda Laurel explains the experience of human-computer interaction through the prism of theatre. The “magic” in dramatic performance, Laurel explains, is produced by “people and machines, but who, what, and where they are *do not matter* to the audience” (1991: 15). In other words, dramatic performance reinforces the audience’s willing suspension of disbelief, as the mechanisms that sustain the mimetic world on the stage are hidden. But Laurel is careful to point out that it is not the case that the audience members regard the technical underpinnings of theatrical performance as unimportant. Rather, when a performance is working successfully, the audience members are “simply not aware of the technical aspects at all” (1991: 15). Laurel is convinced that when the audience is engaged by the play, the action on the stage is “*all there is*” (1991: 16). The actor on the stage tunes out everything that is extraneous to the dramatic action, except the “audience’s audible and visible responses in real time” (1991: 16). What this means is that the audience members are not

“passive” spectators of the dramatic spectacle, as they are capable of influencing the action on the stage. In this sense, a feedback loop exists between the performers on the stage and the audience members in the stalls. Laurel’s main point here is that “users” in human-computer interaction “are like audience members who are able to have a greater influence on the unfolding action than simply the fine-tuning provided by conventional audience response” (1991: 16). However, she cautions against the idea of putting the audience on the stage, or in the context of HCI, the placing of the “user” into the representational universe of the computer, as doing so would create confusion on both the psychological and physical levels (1991: 17).

For Laurel, the audience members in human-computer interaction do not join the stage, in the sense that they do not enter the representational context rendered by the computer. Instead, the audience members become actors rather than “passive” observers of the action on the stage. The “stage” to which Laurel refers is a virtual world populated by agents that can be manipulated by human beings or artificial intelligence programs. In the case of human-computer interaction, human agency needs to be considered in the action. This is what Laurel calls the “intuitive aspect” of the interactivity between humans and computers, as every action has to result in an effect. What this means is that the audience members have to feel like they are “participating in the ongoing action of the representation” (1991: 21). To create this feeling, the designers of human-computer interaction, like the dramaturge of a dramatic performance, can orchestrate “the variables of frequency, range, and significance” or rely on such techniques as “sensory immersion and the tight coupling of kinesthetic input and visual response” to augment the audience’s sense of interactivity with the representational context (1991: 21). However, interactivity is not an end in itself but a means by which to discover both the form and content of the representational context. As such, Laurel sees computer-based representations as contexts for thought. Similarly, dramatic performance is capable of affecting the perception of the audience

by calibrating the intensity of their experience of the action on the stage. But how does interactivity operate in the theatrical milieu?

Writing on the performance of interactivity, the director and theatre scholar, Steve Dixon, remarks that the term has become a “meaningless buzzword” since the turn of the millennium (2007: 561). He notes that the intensity of interactivity has often been exaggerated in the marketing of both commercial products and artworks, particularly those that feature digital technology. Dixon makes the point that interaction is a dialogical process, in which messages are transmitted and received in exchange. Interactivity, in other words, is not a one-way operation. Understanding interactivity in this way would appear to detract from the one-way transmission that characterizes mass media. As Jean Baudrillard contends, “if one agrees to define communication as an exchange, as a reciprocal stage of a speech and a response, and thus of a responsibility,” then the mass media would be seen as an “anti-mediatory and intransitive” fabrication of “non-communication” (“Requiem for the Media” 2003: 280). Baudrillard sees the non-reciprocal communicative operations of the mass media as a form of social control that stifles real-life interaction between people. Citing television as an example of the “hegemonic single-track delivery of mass media,” Dixon argues for the need to distinguish between “reactive” effects and “interactive” effects (2007: 561). He explains that in television, the presented on the screen is perceived as a third-person, as the viewer of the television program is “acknowledged but unrecognized” (2007: 561). For this reason, the viewer’s response to the television program is considered “reactive” rather than “interactive”. However, in the case of a digital performance that directly that directly addresses the audience members in the second person while affording them the opportunity to “respond meaningfully,” Dixon believes that the communication between the artwork and the viewer would be perceived as “interactive” (2007: 561).

The distinction between “reactive” and “interactive” effects in media and artistic communication is pertinent to the investigation of the ways in which audience members experience and perceive human-machine interactions in performance. Even though intermedial performances may be disposed towards the rendering of an imaginary world, the audience members’ responsive interaction with the artwork could potentially affect their perception of the human-machine relations that transpire on the stage. Because both computers and theatre performance possess the capacity to represent actions and situations that may or may not exist in the real world, Brenda Laurel believes that what she terms “user experience design” is fundamentally about “creating imaginary worlds that have a special relationship to reality – worlds in which we can extend, amplify and enrich our own capacities to think, feel, and act” (1991: 33). Inspired by Laurel’s “user experience design,” my proposed analytical concept and dramaturgical method, “critical techno-dramaturgy,” seeks to foster the audience’s critical awareness of the technocultural politics that pervade the interactions between humans and technology in intermedial performance. However, any discussion of the dramaturgical strategies used to stimulate critical reflection on human-machine relations in the theatre would require an understanding of how the audience members might perceive the manifestation of intermediality in performance.

“Intermediality,” as the German theatre scholar Peter M. Boenisch argues, “is an effect created in the perception of observers that is triggered by performance – not simply by the media, machines, projections or computers used in performance” (2006: 113). Rather than locating the “intermedial effects” within the media technologies themselves, Boenisch focuses on the ways in which the juxtaposition of media technologies in a network of tensional relations disrupts the audience’s perception of the performance event. He asserts that intermediality “is very literally located inter-media, inhibiting, blending and blurring traditional borders between genres, media,

sign systems, and messages” (2006: 114-5). Intermedial performance, in Boenisch’s view, does not suppress the differences and contradictions between the media technologies that interact on the stage. “Instead of closing down the multiple semantic potential offered into one coherent meaning,” Boenisch contends, “intermedial performances derail the message by communicating gaps, splits and fissures, and broadcasting detours, inconsistencies and contradictions” (2006: 115). By foregrounding the fault lines that fall in-between the different media elements, the meaning of intermedial performances is deferred in an asymptotic approach that resists semantic finality. Such disjunctions in the juxtaposition of media, which frustrates the audience’s ability to make sense of the performance, leads Boenisch to assert that “intermediality offers a perspective of disruption and resistance” (2006: 115). His contention is that the experience of perceptual dislocation in intermedial performance results from the semiotic disjuncture that the play communicates. But Robin Nelson disagrees with Boenisch’s claim by pointing out that the disposition of the audience member (or what he calls “experiencer”) is culturally positioned.

Nelson believes that the processes of enculturation serve to condition the disposition of audience members towards particular modes of perception. He postulates that performances framed by the principle of coherence would curtail the audience members’ motivation to actively engage with the action and negotiate its significance, as they are more likely to be satisfied by the closure that the work offers. “If it is a matter of perception,” Nelson argues, “and that perception is ossified through enculturation into making sense of things, then something is needed in the principles of composition of the text to mobilize the possibility of a shift in perception” (2008: 35). The mention of principles of composition speaks to the deployment of dramaturgical strategies that contest the audience’s disposition towards semantic closure (something that I aim to do with the development of “critical techno-dramaturgy”). Noting that the media technologies employed in intermedial performance exist as “both the sign and the thing itself,” Nelson

explains that the audience members are able to perceive the relations between thing and sign through their experience of the contextual juxtaposition of elements on the stage (2008: 35). However, he warns that the disjunctions and interruptions experienced by the audience are “not inherent in intermediality but arises from particular principles of composition disposed towards – they cannot guarantee it – a dislocation in perception” (2008: 35).

The potential for disruption, as Nelson asserts, resides in the “disjunctive mix of media” (2008: 35). It is this juxtaposition of different media in a network of tensional relations that creates what he calls a “frisson” or a brief moment of heightened emotion. Indeed, Nelson believes that the strategic deployment of media technologies in intermedial performance can induce the experience of dislocation and thereby challenge the perception of the audience. Nevertheless, he remains sceptical towards the suggestion that this perceptual disorientation consists of a perspective of disruption and resistance that Boenisch deems to be intrinsic to the manifestation of intermediality. Yet if the experience of dislocation is not inherent in intermediality but only emerges as a result of the compositional strategies deployed in the performance, how might the audience members’ sense of embodiment influence their perception of the disjunctions and interruptions that are communicated by intermedial performance?

2.6 Embodiment and Perception: The Body in Intermedial Performance

One of the encouraging developments in recent theatre scholarship on the interface between performance and technology is the acknowledgement of the co-constitution of the theatrical and the medial qualities of the stage. In her analysis of the body as a medium in intermedial performance, German performance theorist Erika Fischer-Lichte argues that “once we understand theatricality as the specific staging of bodies in different media for the specific

perception through others, theatricality and mediality seem intimately connected” (2001: 13).¹⁵

But while Fischer-Lichte’s emphasis on the medial capacity of the body may have moved the discourse on intermedial performance beyond the polemics of the “liveness” debate, there remains a danger of conflating the corporeal body with the experience of embodiment. Fischer-Lichte may be right in her treatment of the body as a signifying medium, whereby the specific staging of bodies in different media can induce specific perceptual effects in other bodies.

However, such a formula is based on the understanding of the body as a physical medium that is visible and significant to the other bodies that perceive it. By focusing on the signifying potential of the body in performance, Fischer-Lichte’s analysis seems to have overlooked the impact of the audience members’ experience of embodiment on their perception of mediated bodies on the stage.

The American philosopher of technology, Don Ihde, conceptualizes the phenomenology of the body by distinguishing between what he calls “Body One,” which refers to the body in its motile, perceptual, and physical form, and “Body Two,” which points to the body as a social, political, and cultural entity. Embodiment, Ihde argues, involves a combination of “Body One” and “Body Two” (2002: xi). What this means is that our sense of embodiment is contingent on our awareness of having a physical body. Bodies are not merely corporeal beings that are physical, motile, and perceptual. Rather, our bodies are embedded within a matrix of social, political, and cultural institutions and forces that is capable of influencing our experience of embodiment. This crucial distinction between the materiality of the body and the experience of embodiment has also informed the work of N. Katherine Hayles. In response to the rhetoric of

¹⁵ The quotation provided here is based on Peter M. Boenisch’s translation of the original German found in Erika Fischer-Lichte et. al. eds. *Wahrnehmung und Medialität [Perception and Mediality.]* Tübingen/Basel: Francke, 2001. Print. The German version reads as follows: “Versteht man unter Theatralität die je spezifische Inszenierung von Körpern in unterschiedlichen Medien zur je besonderen Wahrnehmung durch andere, dann erscheint Theatralität eng auf Medialität bezogen” (13).

disembodiment espoused by such proponents of artificial intelligence as Hans Moravec and Ray Kurzweil, Hayles wants to rehabilitate the prominence of the body and the experience of embodiment in human-machine relations. Hence, she begins by parsing the semantic and phenomenological differences between the physical “Body” and one’s sense of “Embodiment”.

The “Body,” as Hayles explains in her article “Flesh and Metal,” is a material object that is culturally constructed. The corporeality of the body is a material fact, but it is also imbued with cultural significance that allows for the sorting of bodies into such categories as “disabled” and “able”. It is through this idea of the body as a “container” of signs that we are able to draw inferences from the physical attributes of a human being in order to form character or behavioural judgements about him or her. However, in contrast to the corporeal and culturally significant “Body,” Hayles argues that “Embodiment” arises from perception and subjectivity. Each person perceives his or her own embodiment in a way that is unique to how his or her body engages with the world. For instance, I may perceive the weather in my hometown as humid and oppressive due to the hypersensitivity of my sweat glands that causes me to perspire profusely in mid-summer. Another person, however, may perceive the same weather conditions at the same location as warm and bearable. My perception of the weather at a particular time of the day is not an abstract construction of the mind. Rather, as Merleau-Ponty clarifies, perceptual synthesis involves the human subject taking a point of view, such that her body becomes “the field of perception and action” (1964: 15). In this sense, our sense of embodiment is affected by the way we perceive the world through our bodies. But Hayles maintains that the meanings of the terms “Body” and “Embodiment” are not fixed. Instead, they are constantly *renegotiated* through the subject’s interactions with other people and the environment:

The body is the human form seen from the outside, from a cultural perspective striving to make representations that can stand in for bodies in general.

Embodiment is experienced from the inside, from the feelings, emotions, and sensations that constitute the vibrant living textures of our lives – all the more vibrant because we are only occasionally conscious of their humming vitality.
(Hayles 2002: 297)

The affective and perceptual effects of our engagement with other bodies and things in the world play a crucial role in structuring our sense of embodiment. At first glance, the distinction between “outside” and “inside” in Hayles’ description of the “Body” as seen and made significant by other bodies, and the way in which “Embodiment” constitutes an internal experience, may seem dichotomous and problematic. Indeed, one might argue that the corporeal body exists, whether or not somebody is present to observe it. However, what stands out in Hayles’ point is the claim that we are “only occasionally conscious” of the “humming vitality” of our being, which is not solely defined by the biological attributes of our bodies, but also includes our feelings, emotions, and senses as they are experienced through our embodied engagement with people, animals, objects, and the environment.

In addressing the relationship between the corporeal body and our sense of embodiment, Hayles contends that the process of embodiment is an experience that transcends the boundaries of the corporeal body. Instead, such an experience necessarily pertains to the social, the technological, and the perceptual. Although technological mediation may have the capacity to isolate human perception from the corporeal body, Hayles believes that it does not necessarily deprive us of our sense of embodiment.¹⁶ Let us imagine that I am involved in an intermedial performance that requires me to engage in a conversation with another audience member over

¹⁶ The recent popularity of consumer-grade psycho-technologies, such as the NeuroSky® Mind Wave series electroencephalography (EEG) devices that claim to allow users to control virtual objects on computer screens using their “brainwaves,” is particularly noteworthy. The rhetoric of disembodiment that undergird the marketing of these psycho-technological devices appears to reinforce the assumption that the mind alone is capable of engaging with the technology, thus negating the body’s capacity to intervene in the interactive experience.

Skype while traversing the urban landscape in downtown Toronto. As I am walking down Yonge Street, my eyes are fixed on the screen of the mobile tablet computer that I am holding in my hands. In fact, I am so focused on the Skype conversation to the extent that I become less conscious of the sound of my breathing and the movement of my legs as I walk. But when I arrive at a light-controlled intersection and the red light warning pedestrians not to cross the road comes on, it is likely that I will notice (on a good day, at least) that the people walking beside me have come to a halt. Noticing that the pedestrian signal has turned red requires me to turn my gaze away from the mobile tablet and towards the intersection before me. As I take in the surrounding sights and sounds of the vehicular traffic, not only am I stimulated visually and aurally, I may also be aware of my embodiment with the mobile tablet while standing at the intersection with my hands wrapped around the device. Meanwhile, as I wait at the intersection, I can choose to focus on my Skype conversation with the other audience member who is located in a different city and disregard the presence of my body at the intersection. Yet when the pedestrian signal changes and everyone is permitted to walk across the road, the rapid movement of bodies around me would probably cause me to realize that it is time to carry on with my journey down Yonge Street. Even if I were to return to the Skype conversation once I have crossed the road, my sense of embodiment was nonetheless rendered salient during that brief moment when I was waiting at the intersection.

What this example illustrates is that even though the body is a perceptible and corporeal presence in our lives, we tend to take its existence for granted. The body, according to the Dutch performance scholar, Maaïke Bleeker, is “rarely the thematic object” of our experience of the world (2008: 155). Instead, as Bleeker observes, the focus of our attention “is directed intentionally towards the outside world and rarely dwells on [our] own embodiment” (2008: 155). Bleeker believes that it is this phenomenological condition of the body that informs the Cartesian

perspective of mind-body dualism. To counter the disembodied logic of the mind-body split in intermedial performance, we might do well to consider the possibility of turning the attention of the audience members towards their own embodiment. One way to do this would be to engage the audience with specially designed tasks such as the combinatory use of bicycles and mobile computers to navigate the cityscape and to record personal narratives in Blast Theory's *Rider Spoke*. In intermedial performances such as this one, engagement plays a crucial role in encouraging the audience members to participate physically and cognitively in the action.

Engagement, according to Brenda Laurel, involves “a kind of complicity” with the representational context, which occurs “when we are able to give ourselves over to a representational action, comfortably and unambiguously” (1991: 115). In light of the multi-sensorial engagements between bodies and technology in intermedial performance, Robin Nelson suggests that the audience can no longer be considered a passive spectator of the action on the stage. Instead, they have become “experiencers” of the performance. For Nelson, the term “experiencer” “suggests a more immersive engagement in which the principles of composition of the piece create an environment designed to elicit a broadly visceral, sensual encounter, as distinct from conventional theatrical, concert or art gallery architectures which are constructed to draw primarily upon one of the sense organs – eyes (spectator) or ears (audience)” (2010: 45). As such, Nelson believes that a performance designed to engage a multi-sensorial experience among “experiencers” is one that taps into Merleau-Ponty's understanding of the body as a medium for perceiving the world. In order to understand how the mobilization of embodied perception in intermedial performance affects the audience's experience of human-machine relations, the next section will explore the analytical and dramaturgical potential of an original conceptual framework that I refer to as “critical techno-dramaturgy”. It is hoped that this framework can be

used to study the techno-dramaturgical strategies deployed by intermedial performance artists in the early-twenty-first century.

2.7 Mobilizing Embodied Perception: Towards a Critical Techno-Dramaturgy

The emergence of intermedial performance relies as much on the affordances of media technologies as it does on the development of new approaches towards performance creation. While some theatre practitioners have chosen to integrate different media technologies into their work, others have insisted on foregrounding what they regard as the unique qualities of theatrical performance by setting it apart from such media as film, video, television, and various forms of digital media. As we have seen in the introductory chapter, the spirited debates between Peggy Phelan and Philip Auslander on the question of liveness and its presumed status as the definitive ontology of theatre has led to the critical re-examination of the interface between performance and technology, including media technologies, among intermedial performance scholars like Meike Wagner, Peter M. Boenisch, and Robin Nelson. Amid the academic focus on the mediatized character of contemporary performance, theatre practitioners have also been experimenting with new methods of addressing the audience through the use of different media and technological devices in the creation of the theatrical *mise-en-scène*.

As Maaïke Bleeker notes, the new dramaturgies tend to “more explicitly and directly engage with the modes of perceiving and thinking of the audience that they are directed towards,” an approach that contrasts with “the construction of a closed, unitary and coherent world on stage, typical of the dramatic theatre” (2012: 62). However, while these dramaturgical strategies may be directed towards the “mind” of the audience, in particular, their perceptual modes and cognitive capacities, Bleeker cautiously points out that this “mind” has to be understood as embodied. She emphasizes that the “mind” that is addressed here “does not refer to something

existing separately from the body,” but rather to that which is “always fundamentally embodied and exists in how bodies enact making sense of what they find themselves confronted with” (2012: 62). Bleeker observes that these dramaturgies of the “mind,” which she calls “media dramaturgies,” account for media as part of the “mind set” – that is, the modes of perception and cognition – of the audience members, many of whom would likely be accustomed to media technologies in their daily lives. For this reason, what media dramaturges seek to address in their theatre practice is the ways in which these media technologies afford new modes of perceiving, thinking, and imagining time and space (2012: 64).

The dramaturge and theatre scholar, Pil Hansen, discerns a shift between development and production in new twenty-first-century dramaturgies that appear to place much more emphasis on the making of compositional choices than the generation of ideas. She argues that while new dramaturgies often set out to affect the spectators’ sensory experience, they do not necessarily invite them to synthesize the stimuli that they encounter in the physical performance as dramatic structure, character, or meaning (2011: 108). Responding to this problem, Hansen calls for the development of “tools to analyze and make strategic choices about the perceptual experience a composition facilitates” (2011: 108). At the same time, however, she contends that the audience’s perceptual and cognitive capacities are not only shaped by their biological constitution and the stimuli that the intermedial performance avails, as each audience member “brings to the theatre the learned perceptual practice, habits, and memories that the dramaturge cannot predict” (2011: 124). The audience members do not passively receive the performance before them, nor do they passively orientate their attention to specific parts of the work. Instead, each audience member draws upon those “learned perceptual practice, habits, and memories” as she experiences the visual, auditory, and proprioceptive stimuli afforded by the juxtaposition of media and technological devices on the stage. As such, Hansen’s “perceptual dramaturgy”

constitutes a dramaturgical method that shapes the perceptual experience of the audience members as they encounter the intermedial effects of the performance. I should note that Hansen's approach to "perceptual dramaturgy" draws on cognitive science and neuroscientific research pertaining to the operational mechanisms of human cognition and memory, whereas my conceptual framework and dramaturgical method, "critical techno-dramaturgy," is motivated by philosophical understandings of perception and embodiment. Nevertheless, in setting up critical techno-dramaturgy as a viable tool for the analysis and production of intermedial performances, I want to build on the observations made by Bleeker and Hansen in regard to the possibility of developing a dramaturgy that directly engages with the perceptual and cognitive capacities of the audience members. But before we proceed to look at what "critical techno-dramaturgy" entails, let us examine the function of dramaturgy in theatre performance.

"Dramaturgy" is arguably one of the most contested terms in theatre and performance studies, as it appears to elude any rigid definition of its purpose and function. As Geoffrey S. Proehl elucidates, dramaturgy is "inseparable from theatre making," and it does not matter "whether we think of it as a play's poetics or its physics, its nuts and bolts or its flesh and blood" (2003: 27). The juxtaposition of "nuts and bolts" with "flesh and blood" – an image that calls to mind Stiegler's concept of epiphylogenesis, which describes the co-evolutionary and co-determining relations between humans and technics – emphasizes the interplay between the physical and technological elements of dramatic performance and the organic bodies of human actors. In this sense, theatre making is essentially a convergence of poetics and physics. As the Italian director Eugenio Barba reminds us, "[w]orking on the dramaturgy does not only involve the text or the story that we want to tell and make visible to the spectators" (2000: 60). What this means is that the practice of dramaturgy is not simply about enacting a written script. Instead, it

involves the structuring of scenic, technical, and performative elements in order to produce a complete dramatic spectacle.

Barba identifies three types of dramaturgies. The first is “organic or dynamic dramaturgy,” which involves the “composition of the rhythms and dynamisms that affect the spectators on a nervous, sensorial, and sensual level,” while the second type is “narrative dramaturgy,” which refers to the “interweaving of events and characters, informing the spectators on the meaning of the performance” (2000: 60). “Evocative dramaturgy” or the “dramaturgy of changing states” constitutes the third type, whereby the entire performance “evokes something different by distilling or capturing hidden significances that are often involuntary on the part of the actors and the director” (2000: 60). Because each member of the audience perceives these hidden significances differently, this third type of dramaturgy endows the performance with “a sense of mystery” (2000: 60). Barba reckons that “evocative dramaturgy” is the most elusive among the three, as it is “difficult to explain what it involves beyond the perceptible effects: leaps from one dimension to another” (2000: 60). Moreover, he regards such a leap between perceptual dimensions as “a perturbation, a change in the quality of energy, which produces a double effect: enlightenment or a sudden vortex that shatters the security of comprehension and is experienced as turbulence” (2000: 60). I believe that the production of this turbulent experience serves to disorient the audience members and frustrate their perception of the action on the stage, which thereby unleashes the potential for critical reflection on the formal and thematic aspects of the performance.

In light of the interface between performance and technology in intermedial performance, I propose a fourth kind of dramaturgy called “critical techno-dramaturgy”. While the emphasis on critical investigation may be apparent in this term, there are two reasons for choosing the word “techno” rather than “intermedial” or “digital” to describe the dramaturgical framework. Firstly,

the word “techno,” which is an abbreviation of technology, opens up the possibility of featuring and analyzing a wider range of technology (be they digital or otherwise) in the intermedial performance event. Secondly, the hyphenated conjunction between this abbreviated prefix and the word “dramaturgy” emphasises the co-evolution across time and space between technology and the human practice of dramaturgy in the creation of performance art. Even though there has been some scholarly discussion on the dramaturgical approaches to intermediality in performance (such as Pil Hansen’s “perceptual dramaturgy”), the question remains as to how an intermedial dramaturgical approach might encourage the audience to reflect on human-machine relations.

“Intermedial theatre and performance,” as the British theatre scholar Andy Lavender contends, “entails systematicity,” especially since it contains such discernible attributes as “[the] plurality of (re)presentation; compound action; multi-modal *mise en scène*; and a disposition to affect” (2010: 134). In light of the multiplicity of media, scenic elements, and performance styles on the intermedial stage, all of which are disposed towards the engagement of the perceptual modes of the audience members, Lavender asserts that “intermedial dramaturgy ‘inscribes’ presentation with mediatization, form with feeling, and evokes the always-other in the here-and-now of performance” (2010: 134). Lavender’s description appears to correspond with Barba’s “organic” and “evocative” dramaturgies, as much emphasis is placed on affecting the audience’s perceptual and affective modes by evoking an “always-other” that engenders a sense of mystery or eccentricity about the intermedial phenomenon on the stage. But while such a dramaturgical strategy may be capable of shaping the audience’s perception of the formal and thematic qualities of the performance, its potential for fostering critical reflection among the audience members remains elusive.

Heeding Meike Wagner’s call for a critical approach towards the study of intermediality in performance, my proposed method (which will hereafter be referred to as “critical techno-

dramaturgy”) offers a conceptual framework with which to analyze the ways that intermedial performances mobilize the audience’s embodied perception of the interface between performance and technology. I will also explore how the framework can be deployed as a dramaturgical approach that engages with the perceptual modes of the audience members in order to encourage them to critically reflect on human-machine relations. This conceptual and dramaturgical framework that I am proposing is very much inspired by Marcel O’Gorman’s Applied Media Theory, or AMT. As the founder and co-director of the Critical Media Lab at the University of Waterloo,¹⁷ O’Gorman pioneered the concept of AMT as a generative methodology “which calls on scholars in the social sciences and humanities to act like artists and engineers, by inventing their own critical technological objects, even at the risk of having them turn out to be nothing more than ‘broken toys’” (2012: 29). Conceived as a new critical methodology in the humanities, AMT uses digital objects “to model complex or abstract levels of thought related to the forms and social impacts of digital media” (O’Gorman 2012: 30). Over the past few years, the members of the Critical Media Lab at Waterloo have created various digital objects that apply the lessons of media theory and philosophy to the construction of digital artefacts that engage with the user’s perceptual and cognitive faculties. These digital artefacts created at the lab do not always work perfectly; in fact, that is not the purpose for producing these artefacts. Instead, the digital artefacts serve to foster critical reflection among those who come into contact with these objects, especially in relation to the impacts of technology on individuals, society, and the environment. It is for this reason that O’Gorman calls these digital artefacts “objects-to-think-with,” a term that Sherry Turkle devised in the context of new media studies.

¹⁷ As part of the Department of English and the Faculty of Arts at the University of Waterloo, the Critical Media Lab (CML) is a cross-disciplinary initiative led by Marcel O’Gorman and Beth Coleman. The lab actively encourages the creation of new media projects that explore the different ways in which technology affects the human condition.

Turkle uses the term, “objects-to-think-with,” to describe the creation of new epistemologies that entail what Claude Levi-Strauss, the renowned French anthropologist, calls “theoretical tinkering” or “*bricolage*,” a process by which members of a culture make use of the objects in their environment to “develop and assimilate ideas” (1996: 48). Turkle’s idea of making “objects-to-think-with” is predicated on “the [physical] manipulation of specific objects” for the purpose of experimenting with theoretical ideas, particularly as culturally “[a]ppropriable theories [...] tend to be those with which people can become actively involved” (1996: 48). The creation of digital “objects-to-think-with” at the Critical Media Lab is therefore an attempt to encourage people to “get their hands dirty,” as it were, by making digital artefacts that can be used to critique the social, economic, cultural, and perceptual impacts of media technologies in the contemporary zeitgeist. As O’Gorman elucidates, AMT is “a generative critique that uses digital media itself to critique digital media,” thereby allowing it to critique “the assumptions of digital media from within those media” (2010: 30). Inspired by the generative potential of AMT,¹⁸ the deployment of critical techno-dramaturgy as a dramaturgical method aims to turn intermedial performances into “objects-to-think-with” by engaging physically and perceptually with the audience members as they interact with various media technologies, and with each other, in a network of human and technological individuals.

I should clarify that it is not my intention to set up critical techno-dramaturgy as a manifesto or a prescriptive model for what intermedial performance ought to look like or how it should *be*. Besides, the development of this conceptual framework and dramaturgical method for the analysis and production of intermedial performances is by no means a new attempt at emphasizing the capacity of intermedial artistic practices to critique the ways in which humans

¹⁸ In Chapter 6, I will examine an original intermedial performance project that experiments with the dramaturgical objectives of “critical techno-dramaturgy” in order to critique the effects of video technology (including surveillance technology) on the audience’s perception of death and the technological mediation of the body.

relate to and engage with media technologies. Intermediality in theatre and performance, as the performance scholars Hans-Thies Lehmann and Patrick Primavesi understand it, is not about adapting to the media realities of any given moment. Rather, they believe that the theatre should become a space that interrogates the power of media in society (2009: 4). “Operating within the larger framework of a culture of media and mediated performance,” as Lehmann and Primavesi go on to explain, “theatre is bound to an inter-mediality where the ‘inter’ is decisive” (2009: 4). The importance of the “inter” prefix in Lehmann and Primavesi’s understanding of the term “inter-mediality” is reminiscent of Henk Oosterling’s theorization of the ontology of the intermedial as “in-between,” with different media elements set in a dialogical relationship with one another through their “tensional differences” (2003: 30). In other words, the “inter” prefix is not simply a descriptor of the interplay of media elements in theatre and performance but a self-reflexive indicator of the critical potential that an intermedial environment offers to performers, designers, and audience members.

“Intermediality,” as the German art critic Klaus-Peter Busse informs us, “is foremost a quality of artistic statements using more than one medium” (2005: 262). Intermedial artists employ various media elements in their work in order to articulate particular perspectives about the social, cultural, and political tensions that affect the interactions between humans and media technologies in artistic and non-artistic contexts. Yet Busse is quick to emphasize that what is termed “intermedia” is more than just a fusion of different media. Instead, the juxtaposition of different forms of media in the same environment reveals the potential of intermedial artistic practices to generate ideas about those media elements and their impact on the human condition. As Busse succinctly puts it: “intermedia means media criticism” (2005: 263). The ontology of the intermedial as “in-between” engenders a critical impulse that acknowledges what Busse describes as “the interspaces and the liminal of the process of artistic perception” (2005: 266). Therefore,

by interrogating the “in-between-ness” of the intermedial phenomenon, “theatre may,” as Lehmann and Primavesi suggest, “open up and explore the ‘inter’ as an artistic space – instead of trying only to copy media technologies or maintaining a defensive ontology of live ‘presence’” (2009: 4). But it is worth noting that audience members may not necessarily discern or comprehend the artistic purpose of intermediality in performance and the critical impetus that such an intermedial experience might harbour.

According to Lehmann and Primavesi, the “critical potential of theatre and performance often depends on how the position of the spectator is defined or questioned” (2009: 6). “The function of theatre as a public sphere,” they argue, “requires a dramaturgical discourse that is more ready to pose questions than to give answers and that is constantly reflecting its relation to political contexts without patronizing the audience or insisting on a particular interpretation” (2009: 6). What Lehmann and Primavesi seem to be calling for then is a “collective” form of dramaturgy, whereby theatre practice becomes an exercise in “collective theorization” among performers, designers, and audience members about specific social, cultural, and political issues. These issues might include the ways in which humans relate to media technologies. Such a “collective” dramaturgy would, in turn, frustrate the presumptive role of the dramaturge as the sole architect and orchestrator of the performance event. Alluding to the “power relations” that are made manifest within “theatre institutions,” Lehmann and Primavesi propose that the “dramaturg should no longer be defined as the controlling power of the theatre” but “may instead become a negotiator for the freedom of theatrical experimentation and risk” (2009: 4). Just as the juxtaposition of different media in an intermedial milieu unfolds the possibility of critiquing medium-specific conventions and the interactions between humans and media technologies, it appears that the practice of dramaturgy is amenable to risk-taking and experimentation.

The intermedial performance event offers a laboratory space that is perhaps similar to how the dance artist and theatre scholar Susan Kozel regards the dance studio as “a focused environment” in which to experiment with and understand the relationship between humans and technology in everyday life (2007: 69). As Kozel observes, “the conceptual and experiential infrastructure of our relations with technology are condensed and intensified in a performance context in the lab or studio” (2007: 69). For this reason, conceiving the intermedial performance event as a laboratory space would unravel the potential for intentional self-reflection in performance. “Performance,” as Kozel proceeds to argue, “entails a reflective intentionality on the part of the performer herself, a decision to see/feel/hear herself as performing while she is performing, a decision to see/feel/hear others performing while she watches them perform” (2007: 69). Performance is therefore an embodied phenomenon in which both the performers and the audience members become aware of their own bodies and those of others in time and space. Furthermore, it appears that the ancient Greeks were also inclined to regard theatre performances as artistic devices for thinking and reflection. The ancient Greeks, as Brenda Laurel informs us, “employed drama and theatre as tools for thought, in much the same way that we employ computers today” (1991: 40). While new media technologies, such as computers and smartphones, may compel the user to think about human-machine relations through the interactive digital content that these technological devices communicate, theatre performances could also serve to foster critical reflection among the audience members who encounter the spectacle in person. Would it be possible then to characterize intermedial performances as “objects-to-think-with”?

In the case of contemporary intermedial performance, it seems that what Susan Kozel terms the “intentional reflection” that occurs in performance could potentially be expanded to include the reflective engagements that transpire between the performers and audience members

as they interact with the technical objects that feature in the intermedial performance event. But while the treatment of intermedial performances as “objects-to-think-with” might illuminate the impacts of technology on society and the human condition, would it be too much to expect from the audience members who may think of technological devices as functional tools rather than objects that facilitate critical reflection on human-machine relations? Writing on the topic of risks in theatre production, the British director Tim Etchells asserts that performance should be conceived as a kind of investment. “Investment,” as Etchells explains, “is what happens when the performers before us seem bound up unspeakably with what they’re doing – it seems to matter to them, it appears to hurt them or threatens to pleasure them, it seems to touch them, in some quiet and terrible way” (1999: 48). Performance work not only places physical demands on the performer; it also frustrates her emotions and challenges her perceptions of the world, thus leading her to question the certainty of her assumptions about a wide range of issues concerning humans, animals, the environment, and even the role of technological objects in society.

Etchells identifies a certain complicity of the performer with the material that she is working on. Performance affects performers as much they affect it. But as Etchells contends, the audience members who encounter the performance event also share in this complicity between the performer and her material:

In the complicity of the performers with their task lies our own complicity – we are watching the people before us, not representing something but going through something. They lay their bodies on the line ... and we are transformed – not audience to a spectacle but witnesses to an event. (1999: 49)

As witnesses to the performance event, the audience members are not passive receivers of the action. Rather, they are involved in a process of discovery and revealing towards the truth about the world. However, the dramaturge is not fully in control of how the audience members might

experience and understand the performance. Etchells believes that this is the point where risk shows up, perhaps unexpectedly, to “surprise us, always fleeting – we’re slightly out of control” (1999: 49). I am reminded of David Wills’ depiction of the threat that comes from behind, literally in the back, and how it forces us to think back to the co-determining relations between technics and human beings. Such a reflection back towards the “originary technicity” of human beings not only upsets the anthropocentric assumption of human mastery over technics; it overturns it. There is a similar danger involved in the production of intermedial performance, one that threatens to rupture the dramaturge’s artistic vision. The interface between technology and performance is not as seamless as it might appear, as performers, audience members, and different media technologies interact on the basis of their relational differences. As a result, intermedial productions run the risk of becoming “broken” in a way that is similar to how the technological objects created in the Critical Media Lab might end up as “broken tools”. But such a risk should be taken, especially if theatre researchers are concerned about understanding how intermedial performances affect the audience’s perception of human-machine interactions.

In searching for a foundational model on which to develop my concept of critical technodramaturgy, I turn to the dramaturges Liesbeth Groot Nibbelink and Sigrid Merx’s theorization of two dramaturgical strategies that they believe are pertinent to the creation of intermedial performance. The first strategy involves the “particular ways of structuring the stage, employing aesthetic strategies such as montage (spatial, simultaneous) and collage, doubling, difference, framing or interactivity” (2010: 223). This dramaturgical strategy is essentially an arrangement or choreography of space and time, a technique that could potentially generate concepts about intermediality in performance. The second strategy is characterized as a “dramaturgy of spectatorial address: the structuring of the encounter between the stage and the spectator” (2010: 223). This strategy is designed to move the audience members to think about their interactions

with technology. However, it can also encourage them to be involved as actors in the performance. Taken together, both strategies organize the performance event as a process rather than a finished product. Nibbelink and Merx believe that by doing so, “certain themes emerge by which intermedial performance – as a theoretical object – reflects on its position within a digital culture” (2010: 223-4). Treating intermedial performance as a theoretical object can certainly facilitate the generation of critical concepts about intermediality in the broader landscape of contemporary technoculture.

Nibbelink and Merx acknowledge that the process of analyzing intermedial performance requires “a continuous dialogical negotiation between a performance as a theoretical object, and a concept that is generated to analyse the performance” (2010: 219). Yet this negotiation can only work if the audience members are involved as agents in the creative process. In turn, a triadic feedback loop emerges among the performers, the technological devices featured in the performance, as well as the audience as “incorporated performers”. Building on Nibbelink and Merx’s theorization of the dramaturgical strategies for intermedial performance, my concept of critical techno-dramaturgy consists of two interrelated approaches:

- 1) Intermediality and De-familiarization: This approach involves the deliberate structuring of the interplay between the human participants and the new media technologies featured on the intermedial stage in ways that destabilize the audience’s familiarity with how they might be embodied with these technologies. The aim here is to challenge the audience’s perception of how humans relate to media technologies through their bodies. The Dutch media philosopher Henk Oosterling’s theorization of the ontology of intermediality as “in-between” or “*interesse*” emphasizes how difference (among media elements) operates as the structuring principle of intermedial effects. In light of the contextual juxtaposition between various media technologies in intermedial performance, there is a need to

analyze how different media elements relate to each other amid what Oosterling refers to as their “tensional differences,” and also how the fissures produced by the juxtaposition of media on the stage defer the possibility of semantic closure.

- 2) Interactivity and Perceptual Engagement: By incorporating the audience members as agents who are capable of influencing the action in the representational context of the intermedial performance event, the deployment of critical techno-dramaturgy has the potential to stimulate the audience’s critical awareness of the ways in which the rapid development and ubiquitous usage of new technologies affect the individual and society. However, we should note that the experience of interactivity, as Brenda Laurel puts it, is a “thresholdy phenomenon” that is “highly context-dependent” (1991: 21). Nevertheless, the critical potential of the concept resides in its capacity to dislocate the senses and frustrate the perception of the audience members through what Kattenbelt calls the “mutual affects” between the different media technologies and the human participants featured in the intermedial performance event. As such, we will need to examine the phenomenological effects of intermediality in performance, particularly the ways that the performance event engages with the perceptual modes of the audience members.

Perception in the intermedial milieu, as Nibbelink and Merx contend, “is complicated by a continuous interplay and interconnectedness of modern media” (2010: 218). They observe that the intermedial performances that have recently appeared in Europe and North America tend to experiment with the manipulation of “perceptual expectation,” to the extent that the collision between “digitally influenced perceptions and embodied presence manifests itself particularly as a disturbance of the senses and results in a blurring of realities” (2010: 219). Nibbelink and Merx articulate a politics of perception that pays attention to the capacity of media technologies to manipulate the human senses. But while the audience’s perception of blurred realities could

potentially complicate the notion of presence in an intermedial environment, it certainly does not mean that the human body is rendered obsolete. As Merleau-Ponty elucidates in *Phenomenology of Perception*, the body is the subject of perception and thus to perceive is to render oneself present to the world through the body (2002: 239). Therefore, any attempt at analyzing the phenomenological effects of intermediality in performance should account for the embodied character of perception.

In the chapters that follow, I will be looking at how intermedial performance artists are able to disorient the audience members by challenging their perception of how various media technologies relate to their own bodies and the surrounding world. In the next chapter, I will explore the interplay between embodiment, technology, and space in intermedial performance and its effects on the audience members' awareness of their embodied existence as they navigate the cityscape with mobile phones and handheld computers. By focusing on the combinatory use of bicycles and handheld computers in Blast Theory's *Rider Spoke*, as well as the production of social space through mobile text messaging in Dustin Harvey and Adrienne Wong's *LANDLINE: Halifax to Vancouver*, Chapter 3 marks the first examination of how critical techno-dramaturgy can be employed as a strategy for designing and analyzing the performativity of discovering the different expressions of social space and embodiment across the cityscape. Both performance projects encourage the audience members to listen to audio narratives on iPods and other digital devices, and to document their life stories on mobile computers or exchange text messages with other participants using mobile phones. Turning to the work of Guy Debord, Michel de Certeau, and Bruno Latour, I argue that *Rider Spoke* and *Landline* exemplify the deployment of a critical techno-dramaturgy that subverts the instrumental uses of the mobile phone and the handheld computer by endowing these technologies with a creative agency that intervenes in the process of devising an urban performance across the cityscape.

Chapter 3:

Urban Performance: Embodiment, Technology, and the Perception of Space

“Elements which are close when disconnected may be infinitely remote when their connections are analysed; conversely, elements which would appear as infinitely distant may be close when their connections are brought back into the picture.”

- Bruno Latour, “On Actor-Network Theory. A Few Clarifications,” *Soziale Welt* 47.4, p.371

“Media technologies simultaneously isolate and connect.”

- Michael Bull, *Sound Moves: iPod Culture and Urban Experience*, 1997, p.9

Imagine riding a bicycle on your own in an unfamiliar city. It is nightfall, and the streets fall silent as the sound of peak-hour traffic subsides. Meandering through narrow roads in search of an interesting building or a public space where you can stop to reflect on your relationship with the urban landscape, you realize that you are not alone on this journey. As you look at the mobile computer mounted on the handlebar of your bicycle, you wonder if someone has left a message for you somewhere in the city. You have been told that you are involved in an intermedial performance that requires a combination of physical toil and the willingness to record your personal stories on a mobile computer for others to hear. You can also listen to the stories that belong to people whom you have never met, and are unlikely to meet. Some passers-by who see you talking into the mobile device may greet you with amazement. But amid the inquisitive gaze of strangers, you insist on recording your stories at various locations across the city. Such is the dedication of those audience members who participated in Blast Theory’s October 2007 production of *Rider Spoke* in the British capital, London.

Blast Theory is a British performance company led by Matt Adams, Ju Row Farr, and Nick Tandavanitj. The theatre group “explores interactivity and the social and political aspects of technology” through frequent collaborations with computer scientists from the Mixed Reality Lab at Nottingham University on the production of experimental performances (“About Blast Theory” 2012). Many of Blast Theory’s recent projects, such as *Rider Spoke*, pose “important questions about the meaning of interaction,” particularly human-machine interactions, by looking at how locative media and mobile technologies intervene in the processes of performance making in an urban setting (“About Blast Theory” 2012). In this chapter, I will examine the interplay between embodiment, technology, and urban space in intermedial performance and its effects on the audience’s embodied perception of space as they move across the cityscape with mobile phones, iPods, and mobile computers. Drawing on Guy Debord’s urban theory, Michel de Certeau’s exposition on the embodied act of pedestrianism, and Bruno Latour’s Actor-Network Theory, I will explore the combinatory use of bicycles and mobile computers in Blast Theory’s *Rider Spoke*, as well as the production of social space through mobile text messaging in Dustin Harvey and Adrienne Wong’s *Landline: Halifax to Vancouver*.

By engaging in close readings of *Rider Spoke* and *Landline*, this chapter seeks to demonstrate how these intermedial performances deploy techno-dramaturgical strategies that seek to engage the audience members’ embodied perception of space. Both projects encourage the audience members to listen to audio narratives on iPods and other digital devices, and to document their life stories on mobile computers or exchange text messages with other participants using mobile phones. As such, my contention is that *Rider Spoke* and *Landline* are exemplars of critical techno-dramaturgy, as they endow the mobile phone, the iPod, and the mobile computer with a creative agency that intervenes in the relationship between human beings and the urban landscape. In the next section, I will explore the influence of digital technology on

the interactions between human beings and the urban environment. Following that, the subsequent sections of this chapter will consist of close readings of the October 2007 production of *Rider Spoke* in London and the September 2013 staging of *Landline* in the Canadian cities of Halifax and Vancouver (the performance took place in both cities at the same time). In my analysis of these projects, I will be looking at how the use of mobile devices in an urban setting might affect the human perception of embodiment and space.

3.1 Digital Culture and the City

Many of us living in cities today can hardly ignore the intervention of technology in our relationship with the urban landscape and its human inhabitants. The ubiquitous use of digital technology for work and leisure has altered our experience of the spaces that we encounter on our daily commute between various places within the city. Equipped with a dazzling array of mobile communication devices that are wirelessly connected to global communication networks, the modern city dweller can do more than simply communicate with people located in the same city or miles away in a distant country; they also have access to digital applications that provide information on bus and train schedules, current traffic conditions, and a list of possible routes that one can take in order to get to a particular place. Beyond the physical acts of walking and biking or the use of public transit, travelling across the urban landscape is becoming ever more sophisticated. Urbanites are constantly plugged into a world of digital media that offer satellite navigation (satnav) and web browsing capabilities, as well as a plethora of entertainment content, including movies, television dramas, and online video games. Far from being inert technological implements, these digital applications are actively shaping how we perceive our embodied interactions with urban spaces. Our quotidian performances in the city, which may range from walking or biking to watching videos or texting on our mobile phones, have been modulated by

our embodiment with technology. And it is this technological modulation of the interaction between human bodies and the city that calls our attention to the emergence of such recent intermedial performances as *Rider Spoke* and *Landline* in the urban spaces of London and the Canadian cities of Halifax and Vancouver.

Engaging in a close reading of these city-based intermedial performances would require us to first attend to the ways in which the use of digital technology in contemporary culture has transformed our experience of time and space as well as our interactions with other people. In his book *24/7: Late Capitalism and the Ends of Sleep*, Jonathan Crary argues that the perpetual presence of digital technology in our lives has disrupted the nightly routine of rest and recuperation or what he calls “the night-time interval” that serves to separate one day from the next. His study interrogates the disintegration of the human perception of space and time in an age where digital devices and the applications that run on them have come to structure how city dwellers experience temporality and the spaces (both physical and virtual) in which communication with other people can exist. Crary is wary of what he terms “the perpetual illumination” that characterizes affluent cities across the world, as such major urban centres as London, New York, Tokyo, and Shanghai have invested in high-intensity lighting to illuminate their buildings, streets, and public squares after dark, thus resulting in the spillage of daytime into the depths of night. Alongside the arrival of 24-hour news cycles and digital devices that promote constant connectivity to the virtual world, Crary’s concern is that the “perpetual illumination” of urban life might diminish the ability of human beings to judge the social and ethical value of what they encounter visually in their daily lives. “With an infinite cafeteria of solicitation and attraction perpetually available,” he argues, “24/7 disables vision through processes of homogenization, redundancy, and acceleration” (2013: 33). Unable to discern the degrees of

variation between the things that they see in the world, the cognitive and perceptual capacities of human beings may seem to be in decline. “Contrary to many claims,” Crary writes:

There is an ongoing diminution of mental and perceptual capabilities rather than their expansion or modulation. Current arrangements are comparable to the glare of high-intensity illumination or of white-out conditions, in which there is a paucity of tonal differentiation out of which one can make perceptual distinctions and orient oneself to shared temporalities. Glare here is not a phenomenon of literal brightness, but rather of the uninterrupted harshness of monotonous stimulation in which a larger range of responsive capacities are frozen or neutralized. (2013: 34)

Crary’s comparison of the constant stimulation and connectivity afforded by digital technology to the blinding glare of high-intensity illumination in affluent cities highlights the “anaesthetizing” effects of the 24/7 lifestyle on the human perception of space and time, as different urban spaces begin to resemble one another and artificial daylight irradiates the night sky. Following Crary’s line of thought, there seems little that the inhabitants of modern cities can do except to endure the relentless bombardment of their visual and aural senses by the perpetual stimuli that originate from the screens and speakers of mobile phones, mobile computers, as well as the animated billboards that tower above the city’s streets. Perhaps the formal difference between the digital objects that we as city dwellers employ in our daily lives might also appear to matter less than their combined capacity to keep us connected, not necessarily to other people, but to the scores of digital content and their tantalizing allure.

The point that Crary advances is reminiscent of Sherry Turkle’s notion of the “tethered self,” which claims that we human beings are now “tethered to our ‘always-on/always-on-us’ communication devices and the people and things we reach through them” (2008: 122). Turkle

contends that the “tethered self” – a self that is always attached to technological devices – straddles the liminal space between a physical reality and a distributed existence across a myriad of digital devices (2008: 122). As prosthetic extensions of the self, digital objects allow the “tethered selves” of the twenty-first-century digital age to live through them, or as Turkle puts it, to “cycle-through” towards “a sense of continual co-presence” (2008: 122). In turn, these new digital devices serve to perpetuate the efficacy of the “tethered self” as a precondition for keeping up with the latest technological trends. For Crary, the normalization of this ongoing state of transition means that there is no observable teleology in the so-called “digital revolution,” as “[t]here never will be a ‘catching up’ on either a social or individual basis in relation to continually changing technological requirements” (2013: 37). His contention is that the rapidly changing affordances of digital technology would alienate and subjugate twenty-first-century humans. “For the vast majority of people,” he claims:

Our perceptual and cognitive relationship to communication and information technology will continue to be estranged and disempowered because of the velocity at which new products emerge and at which arbitrary reconfigurations of entire systems take place. This intensified rhythm precludes the possibility of becoming familiar with any given arrangement. (2013: 37)

The frequency and intensity of technological change in contemporary society can affect the ways in which humans perceive and understand the effects of digital technology on everyday life – how we work, play, and interact with other people and the environment. Mobile phones, for instance, allow us to contact people at anytime and at any place in the world (apart from places with no cellular networks). Yet, the ubiquity of mobile technology in urban life might also be diminishing the frequency of face-to-face interactions between the city’s inhabitants, many of whom can be seen interacting with their communication devices while commuting from one

place to another. However, what Crary's deterministic argument overlooks is the capacity of human beings to question the effects of digital technology on their perceptual faculties.

As we have seen in Chapter 2, the relationship between humans and technology does not entail the absolute dominance of one entity over the other. Even though technological objects can alter human behaviour, human beings are capable of making changes to their technological prostheses in order to fulfil particular needs, as evidenced by the refashioning of metal coat hangers into television antennae. Similarly, the structure of the urban environment can impinge on the human perception of space, just as human beings are able to transform the appearance of the cityscape. In her analysis of the interface between bodies and cities, Elizabeth Grosz makes the point that "the form, structure, and norms of the city" can affect the "corporeal alignments, comportment, and orientations" of the human subject, as well as the "forms of corporeal exertion" that condition the "muscular structure" and "nutritional context" of the body as it traverses the urban terrain (1992: 385-6). Even though Grosz regards the city as "a mode for the regulation and administration of subjects," she is also quick to acknowledge its potential as "an urban space in turn reinscribed by the particularities of its occupation and use" (1992: 386). While cities can influence the spatial perception and corporeal comportment of their inhabitants, they are also open to the transformative effects of human activity in the urban environment.

Mass public gatherings, such as the 2014 student demonstrations in Hong Kong,¹⁹ are capable of transforming cities into platforms for digital communication. Regardless of their location in the city, urbanites are kept apprised of the latest socio-political developments in their municipality through wireless Internet and instant messaging services that are accessible on mobile communication devices. However, the ease of instant long-distance communication

¹⁹ In September 2014, students in Hong Kong occupied the city's streets and highways in order to campaign for democratic reforms. During this period, the activists made use of social media networks and digital projections on buildings to share information about the various demonstration sites that emerged throughout the city.

afforded by mobile phones seems to be eroding the quality of physical encounters in public spaces. On a recent visit to Yonge-Dundas Square in Toronto, I was greeted by a sea of people scattered across a prominent public space at the heart of downtown. But what quickly caught my attention was how the majority of people gathered at the square were interacting with some form of mobile device. With the exception of a few buskers and vendors touting their wares, everyone else was looking down at their smartphones and mobile tablets.

What my brief observation at Yonge-Dundas Square reveals is that a city's inhabitants may choose to congregate at public spaces but not everyone is necessarily inclined to engage in face-to-face communication with others. As Grosz notes, the instantaneous character of digital communication implies that the bodies of the city's inhabitants "will no longer be disjointedly connected to random others and objects through the city's spatiotemporal layout" (1992: 387). Rather than allowing the physical form of the cityscape dictate the quality of interpersonal encounters, she believes that the bodies of city dwellers in the digital age "will interface with the computer, forming part of an information machine in which the body's limbs and organs will become interchangeable parts" (1992: 387). Grosz's invocation of a cyborgian future that embraces the fusion of bodies and computers as well as the interchangeability of body parts remains a contentious point, particularly in relation to the question of technological accessibility among persons with disabilities and the subjectivity of their prosthetic relations with technology (and this is a question that I will return to in Chapter 5). What is perhaps less problematic, however, is Grosz's claim that digital technology "will fundamentally transform the ways in which we conceive both cities and bodies, and their interrelations" (1992: 387). If indeed the ubiquity of digital technology in the urban environment has the potential to alter our experience of the relationship between bodies and cities, how might the employment of mobile computing

devices in an intermedial performance such as Blast Theory's October 2007 production of *Rider Spoke* affect the audience members' perception of their embodied existence in urban spaces?

3.2 Augmented Reality: *Rider Spoke* as "Pervasive Game"

Blast Theory's *Rider Spoke* premiered on October 11, 2007 at the Barbican Arts Centre in London. Over the course of eight evenings, participants from all over the United Kingdom came to the British capital to take part in what the designers at Blast Theory refer to as a "pervasive game" that lasted for an hour each time it was staged. Rendered as an intermedial urban performance that involves the combinatory use of bicycles and mobile computers, the group's description of *Rider Spoke* as a "pervasive game" deserves further inquiry. "Pervasive games," as computer scientists Steve Benford, Carsten Magerkurth, and Peter Ljungstrand point out, "extend the gaming experience out into the real world – be it on city streets, in the remote wilderness, or a living room" (2005: 54). They explain that as players of pervasive games navigate the physical world with "mobile computing devices" such as mobile computers and mobile phones, "sensors capture information about their current context, including their location, and this is used to deliver a gaming experience that changes according to where they are, what they are doing, and even how they are feeling" (Benford, Magerkurth and Ljungstrand 2005: 54). The agency that such mobile computing devices afford, particularly in terms of their capacity to determine the human users' topographical location, physical actions, and emotions, is indicative of a renegotiation of how human beings relate to the urban environment. For most people living in affluent cities today, the projection of virtual spaces onto material reality is fast becoming a ubiquitous phenomenon. From digitally animated billboards that speak to passers-by to the hologram projection of singing humanoids at live concerts (Japan's animated vocaloid Hatsune

Miku comes to mind), the convergence of the virtual and physical worlds have culminated in the emergence of augmented reality as a technique in the design of digital media events.

According to media scholar Beth Coleman, the design of augmented reality involves the overlaying of informational or visual elements onto the world (2011: 146). “[T]he technical and conceptual role of augmented reality,” as Coleman elucidates, “is to emphasize a layered engagement in which multiple levels of presence and world may exist” (2011: 146). As such, the audience or spectator who is engaged with an augmented reality environment can perceive – often with the help of visual or auditory devices – the “visual or informational overlay” that is layered “on top of objects and embedded in places in the physical world” (2011: 147). As a professional theatre group, the Brighton-based Blast Theory has produced intermedial performances that employ a myriad of digital media devices in an effort to interrogate the interstitial spaces from which questions about agency and embodiment in digital culture emerge. “Blast Theory,” as Coleman informs us, “creates immersive experiences that engage real-world and network events” (2011: 145). The overlaying of virtual elements onto physical reality as well as the linking of audience members through a digital network have come to define many of Blast Theory’s intermedial performances. But rather than producing a finished product for the audience members to explore, the designers at Blast Theory prefer to allow their audiences to actively generate the content and even reconfigure the structure of a performance. “Additionally, and crucially,” as Coleman observes, “audience participation represents the final element of their [Blast Theory’s] projects” (2011: 145). This final element is a crucial ingredient in almost all of Blast Theory’s intermedial performances, including *Rider Spoke*.

During the October 2007 production of *Rider Spoke* in London, the performance began with the audience members arriving at the Barbican Arts Centre for registration and a compulsory safety briefing. Some of the participants “brought along their own bikes” to the event, as they

wanted to “experience their local environment – London – from a new perspective” (*D17.3 CCG Final Report 2007*: 20). Others chose to borrow a bicycle from Blast Theory. Nevertheless, all participants were furnished with a Nokia N800 mobile computing device that was mounted on the handlebar of their bicycles. Riding their bicycles out of the Barbican and onto the streets of London, the audience members were greeted with a message on their mobile computers reminding them to cycle safely and to “make sure [they] have stopped before pressing [the] continue” button on the virtual interface (Giannachi 2010: 356). As soon as an audience member came close enough to a location where at least one personal story had been archived, an alert signal would be triggered on the mobile computer. If the audience member wanted to hear that story, he or she could stop cycling and listen to the narrative using a pair of earphones. Conversely, if a location was devoid of any recording, the audience member could press on the door icon on the virtual interface, enter the room on the screen, and hide a message there.

As the designers of *Rider Spoke* explain it, “[the] player’s first task is to find a suitable location at which to record and hide a new audio message,” and this location has to be one that is “not already associated with another players’ recording” (*D17.3 CCG Final Report 2007*: 11). Whenever a participant decided to stop at a particular location, he or she would get to interact with the icons shown on the virtual interface of the mobile computer. This interface comprised a set of cartoonish images “inspired by a combination of sailors’ tattoos, Mexican votive paintings and heraldry, all of which are rich in symbols of travel and identity” (*D17.3 CCG Final Report 2007*: 11). The principal designer of the performance, Matt Adams, describes these artistic icons as “badges of identity” that mark the human body in its embodied existence (“New Frontiers in Performance” 2007: 8). Throughout the performance, each audience member could choose which particular icon – or even a set of icons – they would like to identify with.

As the theatre scholar Gabriella Giannachi notes, “the cartoon-like quality of the interface design” is meant to “generate familiarity” between the audience members and the virtual world in which the audio recordings are hidden (2010: 357). Indeed, the cartoonish interface on the mobile computer can help the audience members to differentiate between the physical world of the urban environment and the virtual spaces in which personal stories can be hidden or discovered. “The overall metaphor for the interface,” as the designers of *Rider Spoke* elucidate, “is one of hiding and finding audio messages at places that are represented graphically by various buildings or houses that the player enters and leaves” (*D17.3 CCG Final Report 2007*: 11). Of course, the audience members do not physically enter these houses shown on the screen of the mobile device. However, we can see how the metaphorical significance of the virtual interface as a hiding place seems to converge with the physical location in the city that is associated with the depositing and retrieval of personal messages. As Giannachi observes, these “[h]iding places, in which memories [are] deposited, [combine] the properties of the physical location and the electronic location as reported by the mobile device, which [uses] information about nearby Wi-Fi access points to determine the location of each participant” in the performance (2010: 357). In this sense, *Rider Spoke* resembles a game of “hide and seek,” as participants traverse the cityscape in search of places to store their own stories or to uncover the narratives of the other participants in the performance.

What is so “pervasive” about the game-like quality of *Rider Spoke* is not the popularity of “hide and seek” as a children’s game but how the audience members engage with the ubiquity of the technological implements (i.e., mobile computing devices linked wirelessly to a network of databases) that facilitate the storage and retrieval of personal narratives. While some of the participants in the October 2007 production assumed that the Nokia N800 mobile devices were equipped with satellite navigational capabilities such as the Global Positioning System (GPS), it

was the technology of Wi-Fi fingerprinting rather than GPS that afforded the mobile computers with an agency for locative awareness.²⁰ Wi-Fi is a wireless technology that involves the setting up of local area networks through which different computing devices – laptops, smartphones, or wireless printers – connect to the Internet or exchange information with each other. The technique of Wi-Fi Fingerprinting enables the building of a locative network that capitalizes on the ubiquity of Wi-Fi access points (or “hotspots”) across the urban environments of most cities in the world today. In contrast to GPS, which offers data on the topographic position of an object or a building in space, the use of Wi-Fi Fingerprinting in *Rider Spoke* “focuses on locations rather than positions” (*D17.3 CCG Final Report* 46). Even though GPS can tell us the real-time positions of objects, buildings, automobiles, and even people in a certain geographic area, it does not offer us a sense of the computing activity – which is also an indication of human activity – that is unique to a particular location.

As Martin Flintham informs us, it is possible to identify a place in the city through the “constellation of access points,” each with a unique identification, that is available only at that location (“New Frontiers in Performance” 2007: 11). The configuration of access points at a given location allows Flintham and his colleagues in the Mixed Reality Lab at the University of Nottingham to construct a Wi-Fi Fingerprint that identifies the location as a specific place in the city. What this means is that whenever the participants in *Rider Spoke* enter a wireless access point with a unique Wi-Fi Fingerprint, “they can see whatever content or audio or messages that somebody has left at [that] location” (“New Frontiers in Performance” 2007: 11). I should clarify that the storage of the audio recordings and messages in the performance does not happen by way

²⁰ As the designers of *Rider Spoke* point out, the reason for choosing Wi-Fi Fingerprinting over the GPS is that “GPS had proven to be problematic in densely built urban environments, where the limited view to the sky would hinder GPS to work precisely” (*D17.3 CCG Final Report* 2007: 47). Using GPS in the performance would probably give rise to situations where audience members will be unable to access the narratives stored at a particular location due to the loss of locative capabilities on the mobile computer.

of Wi-Fi Fingerprinting. Instead, the Wi-Fi Fingerprints serve as a locative trigger that pulls the relevant recordings from a database and presents them on the mobile computers for the audience members to select and listen. By seeing and hearing the individualized data that other audience members have “hidden” at a certain place in the city, the participants in *Rider Spoke* can partake in the sharing of physical and virtual spaces.

While the main objective for the audience members is to hide and discover personal stories at various locations in the city, the use of Wi-Fi Fingerprinting endows the mobile computers with a locative agency that affects the way that the human participants perceive the role of digital technology in shaping their interactions with the urban environment. Given the availability of in-built global positioning systems (GPS) on most mobile devices today, it might not be surprising that the locative awareness mobilized by Wi-Fi Fingerprinting could lead some audience members to rely on the mobile computer as a navigational tool rather than a device that facilitates the sharing of personal stories with the other participants in the performance. But what the locative awareness of the mobile computing devices demonstrates is the distribution of agency between the audience members and the technological implements (the conglomeration of mobile computers, the Wi-Fi Fingerprinting technology, and the network of databases) that co-determine the overall experience of the performance. For instance, if the mobile computer cannot detect the Wi-Fi Fingerprint at a given location, which is probably due to the weak signals emitted at that wireless access point, the audience member who is cycling around the area would not realize that there are audio recordings “hidden” there. Conversely, the audience member can also choose to ignore the locative alerts that the mobile computer delivers at a certain location and continue riding. Both of these scenarios are capable of altering the audience member’s experience of the performance. Indeed, the locative awareness that the mobile computers possess serves to remind the human participants in *Rider Spoke* of the co-determining relations that they

share with the technological systems that could potentially affect the quality of their encounters with the urban environment. Nevertheless, some audience members might still be inclined to rely on the mobile computer as a navigational tool rather than a means by which to share their personal narratives with the other participants in the performance.

One participant who got lost during the October 2007 production of *Rider Spoke* in London was frustrated with the lack of navigational technologies (such as GPS) on the mobile computer. Cycling around the British capital for the first time, he or she was not well acquainted with the labyrinth of narrow streets and winding alleyways that frustrate even the most seasoned commuter in the city. Reflecting on his or her experience, the participant remonstrated:

I had a right mind to go and pop Blast Theory one in the eye – you left me guys!
[...] [*sic*] i just thought that the machine was going to use gps to direct me back.
all that i got was a little swallow and some hand drawn buildings that were NOT
sufficient in terms of showing people and asking them if they recognised it as a
landmark! (*D17.3 CCG Final Report 2007: 34*)

The way that this participant got lost during the performance in London, which was supposedly due to the absence of GPS on the mobile computer, gives us an idea of how we might have become overly dependent on the navigational applications that digital devices offer. Fortunately for this individual, he or she managed to return home with the help of passers-by who provided directions. I should note that as a safety precaution, the designers at Blast Theory did ensure that every bike was furnished with an emergency under-seat map that the participants could consult, in the event that they were unable to find their way back to the Barbican Arts Centre. At the same time, the prospect of getting lost in a city with which some audience members are unacquainted infuses the performance with a tangible sense of danger and vulnerability. Given that most people living in large urban centres today tend to rely on GPS and online maps in order to find their way

around the city, it is worth considering how the combinatory use of bicycles and mobile computing devices in *Rider Spoke* might affect the audience members' perception of embodiment and space. Turning to Michel de Certeau's exposition on spatial practices in the city, Guy Debord's theory of the *dérive*, and Bruno Latour's Actor-Network Theory, the following section will examine the ways in which the interplay between embodied practice of urban mobility and the use of mobile computers to record personal stories in *Rider Spoke* establishes an actor-network that is sustained by the associations between human and nonhuman actors.

3.3 Embodiment, Technology, and the Perception of Space

Writing on the intersection of new media technologies and the city in performance, the theatre scholar Gabriella Giannachi contends that Blast Theory mobilizes numerous levels of perception in the audience members in order to make them aware of how their bodies are situated in space. Giannachi discerns that a “dialectical tension” exists in *Rider Spoke* “between surroundings which are at once familiar and *unheimlich*, real and virtual, informational and material” (2007: 59). She argues that it is this dialectical tension between the dualistic attributes embodied by the different locations in the performance that “continuously dislocates the viewers who through this process of *Verfremdung* are allowed a multiple perception of their own ontological position” in the urban landscape (2007: 59). Giannachi's use of *Verfremdung* is derived from Bertolt Brecht's *Verfremdungseffekt* or “distancing effect”.²¹ The deployment of the distancing effect in performance, as Brecht elucidates, “prevents the audience from losing itself passively and completely in the character created by the actor,” and thereby affords them the role

²¹ John Willett notes that Brecht's *verfremdungseffekt* or “distancing effect” requires the performer to address the audience directly, to the extent that the “audience can no longer have the illusion of being the unseen spectator at an event which is really taking place” (1964: 91). As Willett explains, this method of spectator address breaks down the imaginary fourth wall between the performers and the audience.

of “a consciously critical observer” (qtd. in Willet 1964: 91). If we accept Giannachi’s point that the process of *Verfremdung* in *Rider Spoke* mobilizes “a multiple perception” of the audience members’ “ontological position” in the city, then it is essential that we not only acknowledge the embodied nature of such a perceptual engagement but also its potential to de-familiarize the urban environment for the human participants involved in the performance.

The overlaying of auditory and visual information onto the urban environment in London produces an augmented reality event in which the graphical representation of a room and the audio recording of a personal story can exist alongside the materiality of a road intersection, a building, or a tree. This grafting of various visual, auditory, and informational spaces onto specific locations in the city transforms the urban landscape into what Giannachi calls “a mixed reality palimpsest” that comprises “a user-generated repository of more or less ‘truthful’ ephemeral memories” (2007: 357). The production of such a “mixed reality palimpsest” through a combination of technological and human interventions serves to de-familiarize the environment in which the audience members perform the hiding and seeking of recorded narratives. Even for audience members who are familiar with the city, the possibility of exploring how the different forms of space relate to a certain location offers them “a new perspective” from which to “experience their local environment” (*DI7.3 CCG Final Report 2007*: 20). Indeed, as one participant reported in the post-show survey, he or she “thought it might be interesting to be made to look at London in a different way” (*DI7.3 CCG Final Report 2007*: 21). The suggestion that *Rider Spoke* is capable of making the audience members look at their city in a different way points to the influence of intermedial performance on the human perception of space.

In an interview with Gabriella Giannachi, the lead designer of *Rider Spoke*, Matt Adams, speaks of the “disparity between the city as a place of quotidian banality that’s based around drudgery and servicing our various needs on the one hand and the city as a fantastic place for

otherness and endless possibilities and where multiple worlds are nested in one another” (2005). What the intermedial performance captures through the juxtaposition of virtual and real elements at various locations in the city is the creative potential that unfolds from this disparity between the everyday practices of city life (commuting to and from work, for example) and the ability of city dwellers to transform existing places into generative spaces for recreation, art, and critical thinking. Such a flexible treatment of spaces in the city is reflected in the artistic philosophy that undergirds the production of *Rider Spoke*. By refusing to define the concept or theme of the performance in concrete terms, Adams believes that he is able to encourage people to think about “the ways that technology is mediating their relationships with other players and the artwork generally” (2005). In other words, Adams and his team are deploying a dramaturgical approach that fosters critical reflection among the audience members on the ways in which mobile technology might influence their experience of the urban spaces that constitute the city.

It is apparent that the designers of *Rider Spoke* are practising what I call “critical techno-dramaturgy,” as they seek to engage with the audience members’ perception of how mobile computing technology intervenes in their relationships with the urban environment as well as the human participants in the performance. “Critical techno-dramaturgy,” as I have outlined in Chapter 2, is a dramaturgical method involving two inter-related approaches: (1) the deliberate structuring of the interplay between the human participants and the new media technologies featured on the intermedial stage in ways that destabilize the audience’s familiarity with how they might be embodied with these technologies; and (2) the capacity of the intermedial performance to engage with the different perceptual modes of the audience members. In the case of *Rider Spoke*, the practice of “critical techno-dramaturgy” is embodied by the mapping of visual, auditory, and informational content onto physical locations through the use of mobile computing devices, as well as the employment of low-tech bicycles to facilitate mobility among the audience

members. As such, Blast Theory's techno-dramaturgical approach raises important questions about the embodiment of human beings with technology and its effects on the human perception of space. Moreover, by harnessing the technological affordances of mobile computing devices and the locative potential of Wi-Fi Fingerprinting to connect each audience member to the personal stories of other audience members, questions pertaining to the associations between human and nonhuman agents in intermedial performance have become particularly apposite in our analysis of *Rider Spoke*.

In order to understand how mobile computing devices can influence the human perception of space, we must first examine the dialectical relationship between "space" and "place". As the French philosopher Michel de Certeau elucidates in *The Practice of Everyday Life*, "space" is conceived as a "practiced place," in the sense that it emerges from the spatial practices of human beings, whereas "place" is regarded as "an indication of stability" that entails the situation of various elements at specific locations (1984: 117). What de Certeau's theorization reveals is that spaces tend to articulate the fluidity of the "spatial operations" that transpire at a particular location, while places are static markers of the position of elements, such as a building or a tree (1984: 118). We can think of the Barbican Arts Centre in London as a *place* that is defined by the distinct positions of the elements (for example, the theatre, the concert hall, and the atrium) that it houses. But when the participants in *Rider Spoke* begin to ride their bicycles on the streets of London and record their stories on the mobile computers, their actions serve to actualize a multitude of narrative spaces that can be associated with particular places like the Barbican or Cheapside Street in the financial nucleus of London. This transformation of places into spaces is predicated on the spatial practices of the audience members who cycle across the city at nightfall in search of different locations at which to listen to the personal stories of other audience members or to record their own. This free-flowing act of travelling through the urban spaces of

London on bicycles – as opposed to the adoption of a pre-determined route – seems to cohere with the French sociologist Guy Debord’s urban theory.

Debord was a co-founder of the Situationist movement in France. Operating in the 1960s, the Situationists endeavoured to critique the excesses of capitalism and consumer culture in urban life through the embodied production of art in the city. Much of the philosophical legitimacy of the Situationist movement hinges on Debord’s notion of the “spectacle”. Writing in *The Society of the Spectacle*, Debord asserts that, “[i]n societies dominated by modern conditions of production, life is presented as an immense accumulation of spectacles. Everything that was directly lived has receded into a representation” (1977: 1). Debord believes that society’s adoption of a capitalist mode of production that privileges the consumption of commodities and images has impeded the ability of human beings to directly experience the reality in which they live. However, he is quick to emphasize that, “[t]he spectacle is not a collection of images, but a social relation among people, mediated by images” (1977: 4). Images mediate the relationships between city dwellers, and as a result of such an imagistic mediation, the society of the spectacle comes to fruition. For this reason, Debord was also concerned about the weakening of collective social bonds among city dwellers and their experience of urban isolation. He argues that the technological products of the capitalist economic system are capable of inducing urban isolation, particularly as:

The economic system founded on isolation is a circular *production of isolation*.

The technology is based on isolation, and the technical process isolates in turn.

From the automobile to television, all the goods selected by the spectacular system are also its weapons for a constant reinforcement of the conditions of isolation of ‘lonely crowds’. (Debord 1977: 28)

Both the automobile and the television can isolate the human subject by erecting an enclosed space that forecloses the potential for any physical interaction with the external reality. Driving a car to work or watching television at home is akin to living in a box, thereby inducing an isolating experience that stands in contrast to the embodied acts of walking and cycling in the city. Choosing to walk or cycle, as opposed to watching television at home or travelling in an automobile, unfolds the possibility of encountering other people along the way, whether or not we are acquainted with them. The fortuity of such embodied experiences speaks directly to Debord's psycho-geographic concept of the *dérive*.

According to Debord, the Situationists conceived of psycho-geography as “the study of specific effects of the geographical environment, consciously organized or not, on the emotions and behaviour of individuals” (“Introduction” 1955). In order to understand the psychological effects of human interactions with the physical environment, Debord and the Situationists devised the embodied practice of the *dérive*, which literally means “drifting” in French. The *dérive*, as Debord theorizes it, is a playful and generative “technique of rapid passage through varied ambiances” (“Theory” 1958: 1). In contrast to strolling, the participants in the *dérive* need to be aware of the “psycho-geographical effects” of the spaces that they encounter in the city (“Theory” 1958: 1). These spaces may include bridges, tunnels, as well as secluded passages adorned with murals or graffiti. For this reason, a *dérive* session typically involves “one or more persons [who] during a certain period drop their relations, their work and leisure activities, and all their other usual motives for movement and action, and let themselves be drawn by the attractions of the terrain and the encounters they find there” (“Theory” 1958: 1). Consequently, participants in a *dérive* are encouraged to not only interact with the environmental structures that define the urban spaces through which they drift but also to allow the shape and contour of each location to affect their general perception of space in the city.

In *Rider Spoke*, the use of mobile computers intervenes in the audience members' perception of space, as they drift through the streets of London. Without conforming to a pre-determined itinerary, the participants in the intermedial performance are able to wander around the city and explore the different locales in the urban landscape on their own terms. As such, we can say that *Rider Spoke* operates as a *dérive* in which the audience members are free to engage with the urban terrain and the activities that transpire at various locations. However, what sets the *dérive* in this performance apart from the *dérive* developed by the Situationists is the combinatory use of bicycles and mobile computing devices to facilitate movement (or drifting) through the urban environment and the production of narrative space through the recording of personal stories on mobile computers. Rather than walking through the city, the audience members are embodied with the bicycles that partake in their journey to different places in the city. Furthermore, the operation of the *dérive* in *Rider Spoke* affords the audience members the opportunity to connect with the thoughts and feelings of other audience members in a network of social relations that is mediated through audio recordings. But perhaps the definition of "network" in our analysis of the performance should be expanded to include the human associations with such nonhuman entities as mobile communication devices that contribute to the establishment and maintenance of social relations in a city.

Commenting on the associational quality of networks, the French sociologist and philosopher of technology Bruno Latour asserts that the relations between the various human and nonhuman actors in the network are constantly changing and evolving (2005: 8). As a result, these relations need to be consistently "performed" in order to prevent the network from fading away (2005: 8-9). In other words, the existence of a network relies on the relational performances between human and nonhuman actors rather than a predefined social structure. Latour analyzes the relationships between various actors in a network through what he calls "Actor-Network

Theory” or “ANT”. As an analytical model, ANT is not interested in the “social ties” between individual things. Instead, the meaning of the word “social” in Latour’s formulation of ANT refers to the “momentary association” between different actors, as modifications can be made to the organization of these actors at any given moment (2005: 65). Hence, the network that is the subject of analysis in ANT is characterized by how it gathers together various entities in order to reveal new combinations that can be explored (2005: 65).

Despite its focus on the associational relations between actors in a network, ANT does not endeavour to determine the intentions of individual by claiming to “ever know if society is ‘really’ made of small individual calculative agents or of huge macro-actors” (2005: 30). ANT, according to Latour, is relativist in the sense that it aims “to render the social connections [between actors] traceable” (2005: 30). As such, it is important to study the traces left by the formation of groups without imposing a predetermined framework onto the network of associations. However, as Latour points out, social aggregates are not always made of “human” relationships (2005: 42). For this reason, we need to also consider the traces of nonhuman interactions in the network. Looking at *Rider Spoke*, we can see that the communication between the mobile computer and the wireless access points at various locations in London constitutes a nonhuman interaction that enables the human actors to discover the personal stories that have been hidden at those locations. If the associational relations between the mobile computing device and the Wi-Fi hotspots are disrupted or destroyed, the human actors in the performance would not be able to perform their stories. In this case, the network of associations among the human and nonhuman actors would cease to materialize.

In terms of how the actor-network performs, Latour insists that the actor,²² whether it is human or nonhuman, “is not the source of an action but the moving target of a vast array of entities swarming toward it” (2005: 46). An actor acts with, and is “*made to act*,” by other actors (2005: 46). Invoking the implicit tautology of action, wherein the distinction between “doing” and “being done to” is fraught with ambiguity, Latour reminds us that it is “never clear who and what is acting when we act since an actor on stage is never alone in acting” (2005: 46). An actor becomes an actor-network insofar as it acts only as a result of its associations with other actors. The human participants in *Rider Spoke* do not act on their own but alongside the bicycles, mobile computers, wireless access points, the audio recordings of personal stories, and the urban spaces that contribute heterogeneously to the sustenance of the actor-network. Besides, as Latour observes, action in an actor-network is distributed among the different actors (2005: 50). What this means is that the sources that inspire the actor to act – i.e., the sources of agency in the actor-network – are multiple (2005: 50).

For Latour, having agency means to make a difference to something by transforming it. In *Rider Spoke*, the human actors possess the agency to create a repository of personal stories that could potentially affect the thoughts and feelings of the audience members who listen to the narratives. However, we cannot necessarily claim that the human actors are the source of their own agency. According to Blast Theory, many of the participants in the performance (about 70%) have reported that the places at which they recorded their stories have affected the quality of their narratives. As one participant remarks in the post-show comments: “When hiding in old

²² Latour’s clarification of what he means by “actor” in his formulation of actor-network theory (ANT) is instructive: “An “actor” in ANT is a semiotic definition – an actant –, that is something that acts or to which activity is granted by others. It implies *no* special motivation of *human individual* actors, nor of humans in general. An actant can literally be anything provided it is granted to be the source of an action” (Latour 1997: 373). Latour’s ANT is not concerned about the intention of an actor, be it human or nonhuman, but rather its performance in the network.

alleys that reminded me of what Victorian London might have looked like, I think I romanticised the answers a bit more” (*D17.3 CCG Final Report 2007*: 30). Understanding the performative nature of recording personal stories in a public area, this participant sought to dramatize his or her narrative to suit what he or she perceives to be the mood associated with a certain location.

Another participant notes how “I wasn’t going to speak at length about my father whilst standing in a grimy back alley that stank of excrement” (*D17.3 CCG Final Report 2007*: 30). It is interesting that both participants regard the old back alleys of London in remarkably different ways. One participant perceives the old back alleys as characteristic of the romantic charm of Victorian London, whereas the other participant appears to be affected by the negative aspects of London’s back alleys, particularly the stench that they exude. Looking back at the post-show comments provided by these two participants, it seems apparent that the physical attributes of the locations have influenced the quality of their narratives. However, neither the locations nor the human actors can be deemed as the source of the action to record the personal narratives. Instead, it is the action that a human actor performs at a specific location that reinforces the actor-network.

Performance, as the theatre scholar Susan Kozel argues, is “never simply [an] exposition from [the] body outward” (2007: 70). As a performance scholar and a dancer, Kozel holds that the act of performing “involves the awareness of being in a state of reception and initiation between inside and outside, modulation and response,” as the human body interacts with a myriad of entities and spaces (2007: 70). Being aware of one’s action does not mean that the action originates in the human actor. Rather, the human actor is constantly receiving the effects of external stimuli and responding to them through actions. Kozel makes the point that we as human actors are thinking and aware of our actions as we perform them. Action is therefore entwined with a conscious sense of awareness. “Performance,” as Kozel sees it, “entails a reflective

intentionality on the part of the performer herself, a decision to see/feel/hear herself as performing while she is performing, a decision to see/feel/hear others performing while she watches them perform” (2007: 69). We should not confuse the reflective intentionality of the performer with the intention to perform an action. Recalling Latour’s observation of how actors always perform alongside other actors, we are reminded that the performer’s intention to act is always already informed by the actions of other performers. The human performer does not act passively in response to the actions of others. By being aware of his or her actions and those performed by others, the performer gets to reflect on the embodied character of the human body and its relationship with space.

Riding a bicycle from one location to another in the city allows the audience members in *Rider Spoke* to experience a heightened sense of their embodiment within space. In addition to the physical toil that comes with peddling a bicycle across the urban landscape for over an hour, the audience members also have to interact with the virtual interface on the mobile computer and record stories on the device. In light of what the designers call “the dual-task-based nature of the experience,” whereby the audience members get to wander around the city on bicycles while interacting with a mobile computing device, many participants claim that the performance made them feel “physically awakened and engaged” (*DI7.3 CCG Final Report 2007*: 36). At the same time, some of them express fear for their personal safety as they traverse the narrow streets of London at night. The need to pay attention to one’s surroundings while focusing on the combinatory task of riding a bicycle and interacting with the virtual interface on a mobile computer can be physically and mentally demanding for the audience members involved in the performance. Having to keep a constant lookout for both vehicular and pedestrian traffic, they push and encounter the limits of their cognitive abilities and physical coordination. It is this

experience of physical vulnerability and cognitive strain that reinforces the audience members' sense of embodiment.

As mentioned in the previous chapter, the body as a physiological entity stands in contrast to the phenomenological experience of embodiment, even though the human experience of embodiment is rooted in the material existence of the body. In her analysis of the cultural construction of the body in the age of digital technology, N. Katherine Hayles makes a careful distinction between the body as a cultural concept and the experience of embodiment.

“Regardless of how it is imagined,” she explains:

‘The body’ generalizes from a group of samples and in this sense always misses someone’s particular body, which necessarily departs in greater or lesser measure from the culturally constructed norm. At the other end of the spectrum lie our experiences of embodiment. While these experiences are also culturally constructed, they are not entirely so, for they emerge from the complex interactions between conscious mind and the physiological structures that are the result of millennia of biological evolution. (2002: 297)

Hayles believes that the cultural construction of the body assumes a normative ideal of the human body by which all bodies are measured, whereas our sense of embodiment results from the interactions between the conscious mind and the physiology of the human body. In this sense, our experience of embodiment is always already a subjective experience that evolves in accordance with the changes in the constitution of our bodies and minds. “Embodiment,” as Hayles conceives it, “is experienced from the inside, from the feelings, emotions, and sensations that constitute the vibrant living textures of our lives” (2002: 297). Changes to our bodies may alter our sense of embodiment, but they will not destroy it. Hence, losing a part of our physical body will not result in a total loss of our sense of embodiment, which is an internal experience.

To understand the possibility of retaining our sense of embodiment in the face of technological mediation, let us revisit the combinatory use of bicycles and mobile computers in *Rider Spoke*. Riding on bicycles outfitted with mobile computing devices on the handlebars, the participants in this intermedial performance are required to cycle through a labyrinth of streets and obscure passages in search of a number of chosen locations where they can listen to and record personal messages. As these participants cycle across London, the physical effort required to rotate the pedals that keep the wheels moving allows the riders to be conscious of their embodied existence. In this way, the participants in the performance are able to sustain their sense of embodiment while exercising the lower extremities of their bodies. As Susan Kozel remarks in her phenomenological study of embodiment in intermedial performance, “we perceive through our technologies, we create through them, and they are entwined with our bodies” (2007: 77). Kozel believes that our engagement with technology can reveal aspects of embodiment. “[B]y means of intentional performance with technologies,” she contends, “we can regard technologies not as tools, but as filters or membranes for our encounters with others” (2007: 70). Indeed, the technological implements employed in *Rider Spoke* – the bicycle, the mobile computer, and the Wi-Fi Fingerprinting technology – are more than just tools that support the actualization of the performance. As nonhuman actors in the actor-network, which is a network of associations between human and nonhuman actors, these technological implements mediate the relationships that the audience members share with the physical and narrative spaces that they encounter in the performance.

What sets the embodied act of cycling apart from walking is that cycling requires you to be in constant contact with a technological contraption that facilitates mobility; you have to rotate the pedals in order to move forward with the bicycle. However, while the physical exertion that comes with cycling may serve to reinforce the audience members’ sense of embodiment, it might

be tempting to assume that this feeling of embodiment would cease whenever the locative alert is sounded on the mobile computing device and the audience members are told to stop at a specific location. This assumption seems all the more plausible when we consider how the participants are immersed in the virtual world of the mobile device, as they listen to personal stories and record their own. But even as the virtual content in the mobile device appears to isolate the perception of the audience members (particularly as they focus on searching for and listening to personal stories recorded by other riders), the human-computer interaction is one that simultaneously engages the visual, auditory, oral, and haptic senses. Besides listening to and orally recording personal stories, the movement of the participants' eyes in search of story titles on the screen is accompanied by the tactile interaction of the finger that presses the touch-screen interface in order to select the desired narrative. Despite the lower physical intensity involved here, the audience members are still able to experience their own embodiment through the coordination of the body's cognitive and physical functions, which are similarly activated when riding a bicycle.

Being physically engaged with the bicycle and the mobile computer presents the audience members with the opportunity to critically reflect on their sense of embodiment as well as their perception of space. As one participant reports, the experience of *Rider Spoke* “certainly provoked me into my own personal analysis of space, its fictionalisation and the use of technology to intervene in our thinking of and use of space and place” (*D17.3 CCG Final Report* 2007: 23). We can gather from this response that the participant discerns the critical potential of the performance and how it encourages the audience members to reflect on technology's effects on the human perception of space. Our perception of space, according to Merleau-Ponty, is conditioned by the “phenomenology” of our existence in the world (2002: 340). We need to be aware of our physical existence in the world in order to perceive the objects, spaces, and places

that constitute that world. Spatial perception, as Merleau-Ponty understands it, is formed around what he calls “a sensible nucleus” through which we can verify our experience of the objects, spaces, and places that we encounter (2002: 342). Looking at how humans perceive the physical environment, the British anthropologist Tim Ingold proposes that what we regard as “places do not have locations but histories. Bound together by the itineraries of their inhabitants, places exist not in space but as nodes in a matrix of movement” (2000: 219). For Ingold, the existence of places hinges on the movement of their inhabitants rather than their topographical position. Places evolve in tandem with the activities of the people who populate them. As more urban dwellers begin to employ digital technology such as mobile phones with in-built cameras and sound recorders to chronicle their activities in the city, places have now become nodes for the production of creative spaces. Given that these creative spaces can be shared between individuals through a wireless network, the next section examines how the use of voice recordings in *Rider Spoke* actuates the transindividual transmission of memories among the audience members.

3.4 The Voice of Transindividual Memories

The recording of personal stories on mobile devices at various locations across the city of London foregrounds the role that digital technology plays in facilitating the transmission of thoughts, feelings, and knowledge from one individual to another. The French philosopher Gilbert Simondon holds that the process of individuation is always already social, as “the forces of the future harboured within a number of living individuals lead to a collective structuration” (*LPC* 184). However, as I have discussed in Chapter 2, the individuation of psychic individuals as a collective does not presuppose the existence of a community. Rather, the collective emerges from the *process* of individuating psychic individuals. This passage from psychic to collective individuation results in what Simondon refers to as “transindividuation”. Simondon argues that

the process of transindividuation embodies an “interhuman relation” that is mobilized by “the intermediary of the technical object” (*LPC* 29). It is the technical object, he contends, that “carries with it something of the being that produced it” (*LPC* 29). In other words, the technical object serves to actualize the conservation of memories that can be transmitted from one person to another across the dimensions of space and time. For the participants in *Rider Spoke*, one of the technical objects takes the form of voice recordings that not only archive their personal narratives but also enable the sharing of these stories with other audience members.

Upon pressing the “start” button on the screen of the mobile computing device, the audience members would hear the calm voice of Ju Row Farr, a co-founder of Blast Theory, who asks them to find a place where they feel most comfortable recording their stories. As the mobile technology researcher Jason Farman explains, the participants in the October 2007 production of *Rider Spoke* were “prompted to either ‘Hide,’ which allowed them to find a location related to one of Farr’s prompts, such as ‘Find a place that reminds you of your father and record a story about it,’ or ‘Find others,’ which allowed users to ‘seek’ other people’s narratives located throughout the city” (2012: 104). The audience members were required to physically identify different places at which to either record their stories or tune in to the narratives of other audience members. Even though they did not get to see one another during the performance, they were able to interact with each other through their recorded voices. Farman regards the transmission of human voices through the technological mediation of the mobile computer as a perceptible means by which to “establish embodied connections and a sense of presence between interlocutors” (2012: 105). To understand how the use of sound makes it possible for the audience members to perceive the presence of other audience members and to experience “embodied connections” with them, we must consider the way that humans experience sound.

Walter J. Ong, in his analysis of oral culture, contends that sound envelopes the listener and “incorporates” him or her into the auditory world (1982: 72). Sound, he explains, “pours into the hearer,” as opposed to sight, which “situates the observer outside what he [or she] views, at a distance” (1982: 72). Ong sees vision as the dissecting sense that allows the human subject to discriminate between the different things that he or she encounters by moving the eyes from one object to the next. Sound, however, can be experienced from multiple directions at the same time. Because it is impossible for the human being to direct his or her ears towards the source from which a specific sound originates, Ong believes that sound is capable of unifying the listener’s sense of the world (1982: 72). He observes that in an oral culture, words are experienced only as sounds. In light of the auditory character of speech, “the phenomenology of sound,” as Ong perceives it, “enters deeply into human beings’ feel for existence” (1982: 73). Since the phenomenological experience of sound is capable of heightening the human being’s sense of existence, perhaps the medium of sound (the human voice, to be exact) might also help the audience members in *Rider Spoke* to discern the embodied presence of the other audience members who are involved in the same performance.

The transindividual transmission of audio recordings from one audience member to another engenders a sense of community among all the participants in the performance, as they tune in to the personal narratives that have been digitally “hidden” at various locations across London. However, as Simondon reminds us, the emergence of a community of psychic individuals is not predetermined. Rather, each audience member individuates himself or herself by crafting and recording personal stories on the mobile computing device. As the audio recordings of these stories are shared among the participants of the performance, each audience member is able to connect with the feelings and thoughts of another audience member through the phenomenological experience of his or her vocal presence on the earpiece connected to the

mobile device. Hearing the recorded voices of other individuals, as opposed to reading a textual rendering of their stories, creates a tangible sense of presence and proximity among all the participants in the performance. But in contrast to the immediate and unfiltered quality of “live” voices, the audience members in *Rider Spoke* do not experience this sense of aural proximity directly. Instead, the audio recordings of the audience members’ voices mediate the aural proximity that they share.

“Mediated aural proximity,” as the British media theorist Michael Bull asserts, “constitutes states of ‘we-ness’ whereby ‘direct’ experience is either substituted or transformed by a mediated, technological form of aural experience” (Bull 2007: 6). The possibility of generating a sense of “we-ness” among the audience members in *Rider Spoke* is actualized by the technological mediation of their aural experiences in the performance. Commenting on the use of technology in Blast Theory’s performances, the Australian communications researcher Rowan Wilken reasons that while “mobiles [mobile computing devices] can be used to reinforce existing social networks (connecting known with known), they also have the potential to open up new social and interactive possibilities (perhaps through connecting known with unknown, and stranger with stranger)” (2013: 179). Indeed, the use of mobile computing devices in an intermedial performance does present audience members with the opportunity to establish new connections with strangers. In addition, the awareness that there are strangers listening to the audio recordings may inspire some audience members to be more inventive with the content that they produce during the course of the performance.

In the October 2007 production of *Rider Spoke*, some participants attempted to dress up their stories to make them sound more appealing to the other audience members who might come across the recordings at a later time. As one participant remarked in the post-show comments, “I was much more performative. I often made things and characters up to make it interesting, both

for me and the other listeners” (*D17.3 CCG Final Report 2007: 25*). The inventiveness of the audience members as they construct their narratives reveals their awareness of the unknown listeners for whom they are performing the voice recordings. Yet, whether the content of these recordings are factual or fictional matters less than the reality that they have been composed by living individuals who are present at a specific location and at a particular time as they record their stories. Regardless of the content of the personal stories, each audio track contains the memories of the individuals who perform the voice recordings. In turn, by sharing the audio recordings among the participants in the performance, each audience member is able to hear the voice of transindividual memories being transmitted from one individual to another. Moreover, many of the audio recordings also contain ambient sounds that offer the listener an auditory impression of the locations at which the stories have been recorded. As a result, each audience member is able to connect intimately with the voices of other audience members as well as the auditory signals that represent the context within which the recordings occurred.

Referring to the exchange of recorded voices among the participants in *Rider Spoke*, Gabriella Giannachi argues that the performance constitutes “a ‘living’ archive of different types of voices who either witnessed a particular event or whose recollections were witnessed by others” (2010: 357). Giannachi makes the point that the audience members are not simply recording the events that they have encountered in their lives. As they perform their stories in public, the audience members “not only became the unwitting performers of the piece” but were also instrumental in transforming “bystanders into performers by presenting what they saw to others” (2010: 357). Far from being passive witnesses of the performativity of the audience members who are recording their personal narratives, the bystanders are active participants in the transindividual transmission of individual memories. By electing to record video clips of the audience members’ auditory performances on mobile phones or to orally relate what they

witnessed to friends and family members, the bystanders are able to extend the network of transindividual relations in the performance to include people who did not encounter the performance event in person. But despite the sharing of transindividual relations among the participants, several of them did express their frustration with what they perceive to be “the lack of any real interactivity or feeling of connection” with other audience members (*D17.3 CCG Final Report 2007*: 25). These participants claim that the performance did not provide them with an avenue through which to respond to the stories that they hear, an oversight that seems to diminish the potential for establishing a reciprocal relationship with other audience members. By curtailing the vocal reciprocity among the audience members, *Rider Spoke* foregrounds the politics of voice that undergirds the relationship between speakers and listeners.

In a commentary on the politics of voice, the British media scholar Nick Couldry regards the act of listening as an ethical gesture through which the listener opens up towards the other. Couldry argues that the listening is “the act of recognizing what others have to say, recognizing that they [...] like all human beings, have the capacity to give an account of their lives that is reflexive and continuous, an ongoing, embodied process of reflection” (2009: 579-580). Speaking and listening are both embodied processes that are informed by the self-reflexive capacity of the human actors involved in the reciprocal exchange of voices. Couldry believes that the human capacity to give a vocal account of their lives “is an irreducible part of their human agency” (2009: 580). For him, it is the act of listening that recognizes that agency. As such, he concludes that speaking is an embodied process of recognizing the voice of the other as a reflexive human agent (2009: 580). In other words, having “voice,” as Couldry sees it, is a reciprocal process that gives “voice” to other people by honouring their capacity to respond.

While having the opportunity to respond to the audio recordings in *Rider Spoke* may have heightened the audience members’ sense of interactivity in the performance, the capacity to listen

to the voices of other audience members through the mobile computing device does offer each individual participant the opportunity to make “a connection [...] via place to another person’s thoughts, feelings, [and] recollections” of the events in that person’s life (*D17.3 CCG Final Report 2007: 27*). In fact, most of the participants in the performance reported a preference for stories that present “an insight into the person’s life and relationships” (*D17.3 CCG Final Report 2007: 28*). Having the opportunity to engage with the private stories of strangers seems to induce a feeling of intimacy among the audience members. By listening to the personal narratives depicted in the voice recordings, “[i]ntimate details of relationships could be vicariously experienced, peopling an otherwise impersonal environment with divorces, ex-wives, girlfriends and stories about their fathers” (*D17.3 CCG Final Report 2007: 28*). With the intervention of the audio recording capability of the mobile computer, these personal stories can be conserved as voice recordings and shared among the participants in the performance. Moreover, the ability to experience the intimacy of someone else’s voice allows each audience member to perceive the embodied existence of other audience members in the urban landscape. However, there also seems to be a connection between the places that the audience members traverse and the narrative spaces that they fashion at those locations.

The connection between the details of personal stories and the places at which they are recorded is rendered salient in *Rider Spoke* when audience members consider the dramatic potential of the setting in which they perform the voice recordings. As one participant explains: “I usually looked for picturesque locations to stop. Places that looked suitable for a bit of reflection. Sometimes I looked for a marriage with the location and the mission – making a promise on the steps of the Old Bailey” (*D17.3 CCG Final Report 2007: 31*). The Old Bailey is a historic court building in London. From the seventeenth century to the nineteenth century, the building served as a place for public hangings. Given that a legal oath of truth is often taken

during court proceedings, making a promise on the steps of a court building seems to be an appropriate gesture. Besides, anyone listening to this participant's narrative (even someone who is unacquainted with London) would be able to discern a relationship between the Old Bailey and the significance of making promises at that place. In turn, the connection between place and the production of social space through the exchange of personal narratives could potentially affect the spatial perception of human beings. Looking closely at the September 2013 production of *Landline: Halifax to Vancouver*, the following section will examine how text messaging on mobile phones can shape the human perception of connectivity and intimacy, especially when the interlocutors are located in two different cities.

3.5 Connectivity and Intimacy in *Landline*

Devised by Dustin Harvey from the Secret Theatre in Halifax and Adrienne Wong from the Vancouver-based Newworld Theatre, *Landline* is an intermedial performance that connects two individuals from two different cities located on the opposite coasts of Canada. The performance made its first run from September 20th to 22nd, 2013, during which the organizers provided each audience member with a mobile phone and an iPod that featured an audio guide. The purpose of this audio guide was to direct the audience members towards certain elements in the city that stood out for them. As they tuned their ears to the voice of Adrienne Wong and her audio prompts on the iPod, the audience members from Halifax and Vancouver exchanged text messages with each other using mobile phones as they walked around their home city. Thus, *Landline* is not only an intermedial performance that foregrounds the interplay between the iPod and the mobile phone but also an ambulatory performance that engages the auditory, visual, and kinaesthetic senses of the audience members who are in contact with one another despite the physical distance that separates them.

On the face of it, *Landline* looks like an updated version of Blast Theory's *Rider Spoke* in its use of mobile devices (in this case, the iPod and the mobile phone) and its incorporation of the city as a platform on which the audience members can physically explore the ways that digital technology intervenes in their relationship with urban spaces. However, what sets this intermedial performance apart from *Rider Spoke* is its emphasis on pedestrianism and the instant connectivity afforded by text messaging on mobile phones. Instead of riding a bicycle and listening to site-specific audio recordings on mobile computers, as is the case with *Rider Spoke*, the combinatory act of traversing the urban environment on foot and connecting with another person in real-time through text messaging enables the audience members in *Landline* to choreograph an intimate encounter with each other as well as the environmental features of their home city. As stated in the introductory remarks in the published script, *Landline* is "designed to relocate and make connections between cities nationally and internationally" (2014: 70). Consequently, the notions of connectivity and intimacy are rendered salient in the performance, as the audience members attempt to forge an intimate social connection with one another and the urban landscapes in which they exist as embodied beings.

Making its debut in September 2013, *Landline* is considered a relatively new performance. For this reason, there is a paucity of scholarly literature about the project and its impact on the development of social relationships in the age of mobile telecommunications. Nevertheless, I intend to examine how this intermedial performance can help us understand the effects of such mobile technological devices as the iPod and the mobile phone on the human perception of embodiment and the production of social space in an urban setting. As the audience members from Halifax and Vancouver entered the "bases" – office spaces that the organizers use as command centres for the performance – in their respective home cities, they each received a mobile phone and an iPod that had been preloaded with an audio guide narrated by Adrienne

Wong. I should note that the iPod used in the September 2013 production of *Landline* was not equipped with Wi-Fi. As such, the audience members could not access the Internet or send text messages using the audio player. To facilitate the exchange of text messages between the participants who were located in two separate cities, the audience members had to rely on their own mobile phones. While most of us living in North America would be familiar with the functions of the mobile phone and the iPod (including the non-Wi-Fi versions), we may not be aware of the different ways in which these two digital devices condition our perception of the spaces that surround us in the city.

Focusing on the impact of mobile technologies on everyday life, Michael Bull argues that the iPod and the mobile phone operate as “technologies of separation” that allow individuals to “retreat from urban space” and to “remove themselves” from the “physicality” of inter-personal interactions in the city (2007: 28). Even as we traverse the public spaces of the urban landscape, we may not be participating in face-to-face interactions with the people whom we encounter in the city. Instead, we are more likely to turn our attention to the mobile phone and the iPod that travel with us as mobile companions on our journeys across the city. “Mobility,” as Bull explains, “is inscribed into both the iPod and mobile phone, as is their potential to reorder users’ experience of time and space” (2007: 67). Whenever we use a mobile phone to make calls and exchange text messages or turn on an iPod to listen to music and audio narratives, we are modulating our perception of time and space through our embodiment with the technological devices. We may not always be conscious of how the mobile phone and the iPod affect our experience of the world, but there are qualitative differences between the effects of each of these digital devices on our perception of space.

To illustrate the differing effects of the mobile phone and the iPod (specifically the non-Wi-Fi version of the audio player), Bull distinguishes between what he calls “continuous” and

“discontinuous” mobile technologies. For him, the mobile phone represents a “discontinuous” mobile technology, as “the contingency of the world becomes apparent with each unexpected call, received or not” (2007: 68). With mobile phones, he reasons, the arrival of a call or a text message can disrupt the seemingly continuous flow of events in the urban environment, whereas the non-Wi-Fi enabled iPod represents a “continuous” mobile technology that isolates the user from the auditory stimuli of the surrounding world.²³ “The experience of continuity,” as Bull asserts, “is most commonly evoked through the use of an iPod whereby users construct seamless auditory bubbles for themselves as they move through daily life communing with the products of the culture industry” (2007: 68). Equipped with ear buds that are designed to cancel out, though not completely, the sounds of the urban environment, users of the non-Wi-Fi enabled iPod “banish the contingency of daily life through immersing themselves within their very own private utopia in which they do not speak, but listen [...] through the spaces of the city” (2007: 68). By using the iPod as a mobile technology, the inhabitants of the city can transform the public spaces of the urban landscape into private spaces for auditory immersion. For Bull, it is the immersive experience in a private auditory space afforded by the non-Wi-Fi enabled iPod that allows the users of this mobile technology to perceive themselves as “living in the continuous rhythm of unproblematic reception” and social isolation (2007: 68). But it is worth noting that Bull’s distinction between “continuous” and “discontinuous” mobile technologies may not necessarily apply to the Wi-Fi enabled iPod, which collapses the audio playback function of the non-Wi-Fi enabled iPod and the text messaging and web browsing capabilities of a mobile phone or smartphone into a single portable device. With all these functions contained in the same device, it

²³ Bull’s observations about the iPod were written before the September 2007 release of the Apple iPod Touch, which was the company’s first audio player with Wi-Fi connectivity and a touchscreen interface. Almost all iPod players today can be used with Wi-Fi for browsing the web and also for texting. For this reason, Bull’s description of the iPod as a “continuous” mobile technology only applies to the earlier, non-Wi-Fi enabled versions of the device.

seems that the immersive auditory experience that an audio player affords could be disrupted by the “alerts” that go off whenever a text message or an email is received on the Wi-Fi enabled iPod – in particular, the iPod Touch.

In *Landline*, the playing of the audio guide on the iPod opens up an auditory space that shuts out the ambient sounds from the surrounding urban environment. As the sound of the audio guide streams into the ears of the audience members, it is as if they and Wong are simultaneously present at the same location, thereby conjuring a sense of intimacy between them and the voice of the narrator. But *Landline* is not a performance that seeks to perpetuate the illusion of a seamless auditory experience that isolates the audience members from the sensory stimuli of the physical environment. Rather, the performance is designed to remind the audience members of their embodied existence in the city. In order to problematize the conventional use of the iPod as a medium that brings forth a private auditory space for the listener, the audio guide is designed to prompt the audience members to pay attention to the spaces and structures around them.

Right from the start of the performance, the narrator makes the following request: “May I suggest you take notice of the place you are in? Look up. Are there any birds in the sky? [...] Notice the structures, the buildings. Does the light reflect off them in a certain way? Observe the city as if you were seeing it for the first time” (*Landline* 2014: 71). The use of the phrase “May I suggest” reveals that the narrator’s questions and remarks are meant to encourage, and not instruct, the participants in the performance to account for things – buildings, random objects, and animals – that might otherwise escape their gaze. But rather than simply observing the nonhuman and human entities that inhabit the urban spaces of their home city, the audience members in *Landline* are urged to reflect on their own behaviour and performances, with the narrator prompting them to “[t]ake notice of any people walking on the street,” particularly those who are “listening to iPods” or “texting” (2014: 71). Like the participants in *Rider Spoke* who

travel across the city on bicycles in search of audio recordings, *Landline* uses the audio guide to invite the audience members “to stop and find a location for a scene” (2014: 71). These chosen locations in Halifax and Vancouver serve as physical sites at which the audience members from both cities can partake in a virtual rendezvous that transpires over text messaging. Once the audience members have arrived at a particular location in their respective home cities, they are free to “play the scene” in whichever way they choose, as the voice of the audio guide recedes and the real-time exchange of text messages ensues (2014: 71).

The combinatory use of the iPod for receiving auditory prompts and the mobile phone for initiating textual communication has significant effects on the audience members’ perception of connectivity and the experience of intimacy in the age of mobile telecommunications. As Bull observes, in contrast to the continuous soundscape that the iPod conjures, the use of the mobile phone, which he dubs a “discontinuous” mobile technology, “punctuates daily life with the sound of absent others” (2007: 68). “Mobile phones,” he opines, “construct mobile sound bubbles of discourse – simultaneously private and public as the user both speaks and listens” (2007: 68). However, Bull’s point is frustrated by the use of the text messaging function on mobile phones, which forecloses, albeit temporally, the potential for constructing such “mobile sound bubbles of discourse” that intervene in the public spaces of the urban landscape (2007: 68). With text messaging, the human voice of the mobile phone user no longer intervenes in public space. In the same way that the use of the iPod generates immersive auditory spaces, the act of texting in an urban environment allows mobile phone users to retreat into a private text-based universe that

connects them to another person located somewhere else while diverting their attention from the sights and sounds of the physical environment that surrounds them.²⁴

The inhabitants of the modern city are constantly on the move. Looking at “a world in which physical mobility is the norm,” Bull asserts that “the connectivity engendered in the mobile phone is emblematic of both, the desire for intimate contact with others and the end of shared social urban space” (2007: 86). But despite the absence of physical, face-to-face encounters between the audience members in *Landline*, the use of mobile phones for exchanging text messages opens up an experience of connectivity and intimacy that seems fraught in *Rider Spoke*, where the sharing of personal narratives does not occur in a simultaneous fashion. Unlike the use of voice recordings in the Blast Theory performance, through which one could experience the auditory trace of an unseen interlocutor, the efficacy of the connection between the audience members in *Landline* rests on their capacity to imagine how the other person looks and sounds and to do so solely on the basis of personal descriptions delivered by way of text messages. The ability of individuals living in geographically distinct locations to experience a sense of connection through the intervention of technological implements seems to resonate with Benedict Anderson’s concept of the “imagined community”.

The “imagined community” describes a collective social imagination through which people perceive themselves to be part of a socially constructed group. In light of the massive size of human communities living in modern nation states, Anderson surmises that “members” of these communities “will never know most of their fellow members [...] yet in the minds of each lies the image of their communion” (1991: 6). However, there is a difference between the production of the “imagined community” in the pre-digital era and its manifestation in

²⁴ Bull purports that the connectivity embodied by the mobile phone offers an opportunity for producing intimate relationships with others over the mobile telephone network at the expense of the sharing of urban space through face-to-face interactions with other city dwellers (2007: 86).

contemporary technoculture. Before the arrival of digital technology, this image of social communion was mobilized by the broadcasting of national news on printed newspapers, radio, and television. With the availability of short messaging services (SMS), online forums, and a myriad of social media platforms in our present digital age, members of the “imagined community” can experience a sense of social connection by turning to the mobile phone or the Internet as means of instant communication.

Building on this technologically mediated sense of social connection between the audience members in Halifax and Vancouver, *Landline* deploys a critical techno-dramaturgy that engages the audience members’ perception of the interplay between embodiment, technology, and space. For the participants in this intermedial performance, the ability to communicate with someone from the opposite end of the country through text messaging incorporates them into the “imagined community” that spans the topographical width of Canada, a landmass that cuts across five different time zones. In order to construct a perceptual frame through which to experience this long-distance connection, the audio guide reminds each audience member that “there is a person 5,725 km away [...], and despite all that distance, the two of [them] are engaged in the same activity” at the same time (*Landline* 2014: 71). Whereas the participants in *Rider Spoke* could only listen to audio narratives on the mobile computer without having the opportunity to communicate with the other participants who recorded them, the audience members in *Landline* could respond to each other’s stories by exchanging text messages on their mobile phones. Besides, the announcement of the exact distance between Halifax and Vancouver in the audio guide might also help to shape the audience members’ perception of the vastness of the country that they call home. They may even come to appreciate how telephony has connected people

from distant cities for over a century.²⁵ As the audience members mobilize their fingers to type messages on the mobile phones, the significance of the performance's title, "Landline," is rendered salient. Just as traditional landline telephony relied on copper wires that connected the voices of people located in different places, an invisible line of connection between the interlocutors has been created in *Landline*.

In their study of the psychology of intimacy, Karen J. Prager and Linda J. Roberts delineate the three fundamental operations of intimacy: "self-revealing behavior, positive involvement with the other, and shared understandings" (2004: 45). Participants in a communicative relationship can experience a sense of intimacy when they are able to engage one another by revealing details about their lives or empathizing with the viewpoints of the other person. "Within the intermedia space," as the performance scholar Bruce Barton elucidates, "the informed spectator anticipates the heightened self-disclosure of increased visibility, engagement, perhaps even interactivity" (2010: 46). In the case of *Landline*, one audience member named Garry from Halifax willingly confesses to his Vancouver-based "scene-partner" Chelsea that he was "sexually assaulted in Africa" (2014: 79). Whereas Chelsea appears guarded in her initial interactions with Garry, revealing only the briefest of information about her graduation from the University of British Columbia and her recent engagement, Garry's forthcoming attitude evokes a feeling of gratitude in Chelsea who thanks her "scene-partner" "for being so honest" (2014: 79). Instead of judging Garry's character or expressing doubt about his confession, Chelsea recognizes the contingency and ambiguity of virtual communication by engaging positively with Garry's remarks. Bruce Barton's description of the production of intimate experiences in intermedial performance is instructive:

²⁵ Bull makes the point that the use of the mobile phone "embodies a dynamic between the illusion of total connectivity and the inherent contingency surrounding the availability of others" (Bull 2007: 81). The caller or the sender of a text message expects a response from the person on the other end of the line.

Intermedial intimacy is, thus, not generated through the *portrayal* of shared cultural attitudes and beliefs (a relationship that reinforces ‘timeless’ and ‘universal’ values), but rather through the *performance* of shared perceptual frames and dynamics (interaction that posits ambiguity and de/reorientation as the constants of contemporary existence). (2010: 46)

The feeling of intimacy experienced by Chelsea and Garry depends on their shared perception of the ambiguous quality of their communication. But as we have seen in Chapter 2, an individual’s ability to perceive does not amount to a passive reception of external stimuli. According to Maaïke Bleeker, perception “is a mode of acting” rather than “something that happens to us” (2010: 38). The performance of perception entails an “active engagement” through which the experience of the surrounding world becomes “visible, audible, and tangible, and all at the same time” (2010: 38). For this reason, both Chelsea and Garry have to perform their recognition of the ambiguous quality of their text-based conversation in order to generate what Barton calls “intermedial intimacy,” even if the credibility of their text messages remains dubious. Regardless of the veracity of Garry’s confession, his willingness to share what is ostensibly an embarrassingly private detail helps to create a perceptible sense of intimacy between him and Chelsea, as they feel positively engaged with each other.

As their text-based conversation ensues, Chelsea feels comfortable enough to inquire about Garry’s life by asking if he had “always lived in Halifax” (2014: 79). A few minutes later, the two of them begin to ponder over the question of destiny. But just as these interlocutors are discovering each other on a more personal level, the audio guide on the iPod prompts them to commence a textual version of the children’s game, “Catch”. Chelsea begins by texting “stop

light” to Garry who replies with the appropriate monosyllabic word “car”.²⁶ There is confusion at first, as Chelsea checks in with Garry to clarify if the game has already started. The playful exchange of monosyllabic words continues for three more minutes. When the game is over, both Chelsea and Garry have already completed their walk across the downtown area of their home cities of Halifax and Vancouver. By prompting the audience members to switch from the spontaneous exchange of text messages to a playful bartering of monosyllabic words, the audio guide is reminding them of their role as participants in an intermedial performance. Eventually, as the auditory space generated by the audio guide on the iPod intersects the virtual space of the text messaging application on the mobile phone, the audience members’ experience of intimacy through text-based conversations is punctuated by auditory diversions and ambient sounds that direct their attention towards their own embodiment with technology and the urban environment. As we enter the concluding section of this chapter, I will explore the ways in which the interplay between the embodied act of pedestrianism and the use of mobile phones in the city catalyzes the production of social space among the audience members in *Landline*.

3.6 Pedestrianism, Mobile Phones, and the Production of Social Space

In contrast to the use of bicycles as a mode of transportation in *Rider Spoke*, the audience members in *Landline* rely on pedestrianism as a physical means by which to travel from one location to another in their home city. Walking through the city unfolds an experience that is qualitatively different as compared to riding a bicycle through the urban landscape. When you walk down a street, you are more likely to notice interesting details, such as the graffiti on the

²⁶ “Catch” is a game that is often played between two or more children or between parents and their children. In its physical form, one person would throw an object, be it a ball or a Frisbee, towards another person who would attempt to catch it. If the second person manages to catch hold of the object, he or she would throw it back towards the first person, and the game would continue. The textual version of “Catch” in *Landline* builds on the gameplay of the physical version, as the audience members engage in a mutual exchange of monosyllabic words.

walls of buildings or the ornate design of old signage. However, if you happen to cycle down that same path on a busy day, the need to safely navigate the path without knocking somebody down might hamper your ability to pay attention to the activities along the sidewalks. Equipped with an iPod and a mobile phone, the audience members in *Landline* are sent out to the streets of their home city to chart their own journey. Listening to the prompts provided by the audio guide, the participants are encouraged to find specific locations in the city where a virtual rendezvous with their “scene partner” can take place. Once a location has been found, text messages are exchanged between the audience members located at opposite ends of the country. Pedestrianism is just as important as the exchange of text messages in this performance, as both activities serve to facilitate the production of social space among the audience members. But before we analyze how this production of social space is actualized in *Landline*, we must account for the performativity of pedestrianism.

Standing on the 110th floor of the original World Trade Center, Michel de Certeau surveys the urban landscape of New York City, mapping out the position of streets and buildings as they spread out in every direction across the city. Witnessing the urban sprawl, de Certeau describes a scene in which the “gigantic mass” of buildings and roads “is immobilized before the eyes,” thus allowing to him read the city as one would read a text (1984: 91). This is a panoptic perspective that looks at the urban environment from above rather than attending to the flurry of activity that transpires on the ground. Indeed, de Certeau’s purpose for introducing this perspective at the beginning of his essay, “Walking in the City,” is not to encourage a “plan” view of the city, but rather to emphasize the importance of recognizing the quotidian spatial practices of the city’s inhabitants. “The ordinary practitioners of the city,” de Certeau observes, “live ‘down below,’ below the thresholds at which visibility begins” (1984: 93). Traversing the urban landscape at street level, walking becomes a viable means by which these ordinary practitioners experience

the city. For de Certeau, the local spatial practices of the city's inhabitants are "foreign to the 'geometrical' or 'geographical' space of visual, panoptical, or theoretical constructions" (1984: 93). Detracting from the Cartesian vision of space as conforming to the grid-like strictures of three-dimensional axes, de Certeau sees the localized spatial practices of the city's inhabitants, which account for mobile, poetic, and metaphorical experiences of space, as urban operations that subvert the "clear text of the planned and readable city" (1984: 93).

As a spatial practice, pedestrianism is predicated on the mobility of the human body through space. In an essay on performance and the city, theatre scholars D.J. Hopkins and Shelley Orr point out that "[d]e Certeau offers pedestrianism as a kind of writing, a physical activity that intercepts the textuality imposed on the city as a control mechanism" (2007: 37). Maps, street signs, as well as paved roads and sidewalks serve to reinforce the textuality of the city as a readable space, as these structures are designed to control and regulate the movement of human beings through urban spaces. However, what the embodied act of pedestrianism offers to the city's inhabitants is the opportunity to resist the official perspective of the city. According to Hopkins and Orr, "[t]he textuality imposed from the panoptic perspective of the 110th floor of the World Trade Center is disrupted not by a putative writerly form of walking, but by the physical performance of urban pedestrians" (2007: 47). Hopkins and Orr make the point that pedestrians can produce new meaning through their performances in the city, as the "fictional text of the city," the text that is officially sanctioned by the urban authorities, "is adapted, appropriated, improvised upon, innovated, and/or disregarded" (2007: 47). This capacity to produce new meaning through pedestrian performance also endows the city's inhabitants with the freedom to drift through the urban landscape in a manner that resonates with Guy Debord's theory of the *dérive*.

Earlier in this chapter, we looked at how the *dérive* entails a playful and generative passage or drifting through various urban spaces that the pedestrian might find surprising and stimulating. In *Landline*, the audience members possess the liberty to drift through the streets of Halifax and Vancouver without having to submit to a predefined route on a map. In my interview with one of the designers of the performance, Dustin Harvey, it is revealed that the project is inspired by a Situationist game called “A Possible Rendezvous”.²⁷ The game requires the player to travel to a specific location at a particular time with the expectation that someone would be there waiting. Harvey explains that *Landline* seeks to ignite the same possibility of unexpected social connection by “asking the audience members to find locations in their home city, even though their usual motivations for find a particular location have changed” (“Landline Interview” 2014). For instance, if an audience member used to go to BC Place in Vancouver to watch soccer, the motivation for being there during the performance would certainly be different. No longer would sports provide the impetus for travelling to BC Place, but rather the anticipation that this location might conjure significant memories and feelings that will inform the conversations between the audience member and his or her “scene partner” in Halifax.

The significance of BC Place, a Vancouver sports stadium wrapped in tarpaulin and colourful lights, comes to the fore when one of the audience members, Chelsea, informs her “scene partner” in Halifax that she is “at a structure outside bc place [*sic*]” (*Landline* 2014: 78). Even though she does not reveal the identity of this structure, she is forthcoming about its effect on her: “It reminds of Ubc where I recently graduated [*sic*]” (2014: 78). Adding that her graduation “was a big time of change” for her, Chelsea’s description of how the structure outside BC place triggers memories of her past demonstrates the influence of urban locations on the

²⁷ Brian Massumi describes the tactic in “A Possible Rendezvous” as one “where the arbitrary imperative of being at a particular time and place for an imposed purpose gives rise to an intensified living of potential” (2003: 46). The potential to encounter strangers at a public space undergirds the Situationist approach to “drifting” in the city.

conversations between the interlocutors in *Landline*. While Garry in Halifax cannot see BC Place or the structure that Chelsea alludes to, he can imagine how they look based on the memories that these entities conjure for Chelsea. Furthermore, by drawing a connection between the structure at BC Place and Chelsea's memory of her graduation, Garry can also imagine how his "scene partner" is embodied in that particular location along Beatty Street in downtown Vancouver.

As the French phenomenologist Gaston Bachelard describes in his study of the poetics of space, "[t]he image offered us by reading the poem now becomes really our own. It takes root in us. It has been given us by another, but we begin to have the impression that we could have created it, that we should have created it" (1994: xxiii). Despite their physical separation, Garry is able to identify with Chelsea's narrative about BC Place and the memories it evokes, as what is expressed in her message is not simply words but the affirmation of their co-presence as embodied beings in communication with one another. For Bachelard, the poetic image is "at once a becoming of expression, and a becoming of our being. Here expression creates being" (1994: xxiii). Not only is Chelsea expressing the memories that BC Place evokes, she is also expressing her existence as an embodied being. In turn, by exchanging text messages with each other, both Chelsea and Garry are partaking in the shared experience of co-presence that emerges from their interactions via text messaging.

Presence and co-presence, as the Oxford Internet researcher Ralph Schroeder elucidates, need not be immersive experiences. He reasons that people can have a sense of being in another place without actually being in that place (2006: 445). However, this sense of connection to another place is not merely a figment of one's imagination. As Schroeder clarifies, "presence and copresence does not just mean that people have an imagined sense of being there or being there together, as for example, in fiction" (2006: 445). Instead, the users of instant messaging (IM) or short message services (SMS) on mobile phones "talk about their experiences in terms of sensory

experience” (2006: 445). What this means is that in order for the audience members in *Landline* to experience co-presence during the exchange of text messages, they need to feel like they are present at the same space as the other person with whom they are communicating. This experience of what Beth Coleman calls “sensory presence [...] represents an actual relation with others; I am present to *your* thoughts and feelings” (2011: 120). By responding to Chelsea’s description of BC Place and the memories it conjures, Garry is sharing the same perception of sensory presence as his “scene partner” located more than five thousand kilometres away.

Being co-present in their virtual communication, the conversation between Chelsea and Garry is certainly not a one-sided affair. When Garry mentions that he is standing by the harbour in Halifax, Chelsea inquires into the significance of the location. Responding to her query, Garry explains that the harbour reminds him of Africa. The common feature that stands out in Chelsea and Garry’s description of the places in their home cities is the way that these locations evoke memories of other places in the same city or elsewhere – BC Place is reminiscent of UBC (University of British Columbia) for Chelsea, whereas Halifax harbour evokes memories of Africa for Garry. In another instance in their conversation, Chelsea reveals that she is standing at the library steps where she and her high school friend, Chloe, used to hang out. Concurrently, Garry is at a parking garage in Halifax, a place that is “like death,” as it reminds him of a friend who died. As audience members in *Landline*, Chelsea and Garry are not only talking about the physical spaces that they encounter in their home cities; they are also producing new narrative spaces that allow them to fashion meaningful conversations with one another. By exchanging narratives about the places in their hometowns, the two interlocutors are able to produce a social space that is contingent on their ability to articulate the relationship between the materiality of a location and the memories or images that the place evokes.

To understand how the production of social space between two individuals residing in different cities might be possible, we must recognize what Henry Lefebvre characterizes as “an immediate relationship between the body and its space, between the body’s deployment in space and its occupation in space” (1991: 170). “Can the body,” Lefebvre wonders, “with its capacity for action, and its various energies, be said to create space?” (1991: 170). For him, living bodies are not only embodied in space. Rather, they also create the spaces that they inhabit. Lefebvre notes that even before the living body affects the material world by fashioning tools and objects, “each living body is space and has its space: it produces itself in space and it also produces that space” (1991: 170). However, to speak of living bodies producing space is not the same thing as presupposing that spatial production unfolds upon a blank slate. As Lefebvre informs us, there is no *a priori* empty space that exists before the content that fills it (1991: 15). Instead, space is produced in conjunction with the emergence of living bodies. For Chelsea and Garry, as well as other audience members in *Landline*, there is no pre-existing social space between the interlocutors in Halifax and Vancouver. By establishing a line of communication through text messaging, the audience members are producing social spaces that enable them to experience a sense of intimacy with another person located in a different city. However, as Lefebvre points out, the production of social space should not be perceived as a manufactured “thing” or an end product (1991: 101). Rather, social space is “at once *work and product* – a materialization of ‘social being’” (1991: 101-2). In other words, the production of social space is always already a social practice between embodied beings.

According to Lefebvre, the production of any space, including social space, is an embodied activity based on lived experience (1991: 137). However, as Jason Farman argues in his analysis of mobile media, “embodiment is not dependent on physical space” (2012: 22). Instead, space can be created when bodies are enacted across various forms of digital media

(2012: 22). Farman believes that what we consider to be “our sense of embodied self can be developed and thrive from interactions that take place across geographically distant places” (2012: 23). In *Landline*, the audience members are not only embodied with the iPod and the mobile phone to which they are tethered but also with the urban spaces of their home city and the city in which their “scene partner” resides. Even though each audience member can only be physically present in one city at a time, the designers of the performance are able to deploy techno-dramaturgical strategies that allow the audience members to imagine being present in a city that is far away from their hometown. One strategy involves the layering of ambient sounds beneath the audio guide that plays on the iPod. The ambient sounds recorded in one city are superimposed onto a different city, such that when the audience members put on the headsets, they can hear the sounds from the other city but not their own. At one point in the performance, the audience members in Halifax can hear the voices of people chatting with one another as they tune in to their iPods, even when there is nobody near them. In another instance, the participants in Vancouver who are listening to their iPods can hear the roar of a motorcycle passing by, only to realize seconds later that there are no vehicles heading in their direction. There is a gap between what the audience members hear on their iPods and what they see with their eyes.

The superimposition of ambient sounds recorded in one city onto a different city disorients the audience members in a way that alters their perception of space. Rather than searching for what Merleau-Ponty calls “anchoring points” or visual markers that would orientate their perception of their home city (2002: 289-90), the audience members in *Landline* are able to project an image of themselves traversing the urban spaces of the other city. In his analysis of spatial perception, the Canadian psychologist Colin Ellard argues that space can exist as the object of mental projection, as human beings are capable of visualizing their “*imagined position*” in a particular space even without being physically present in that space (2009: 129). What this

means is that the audience members in Vancouver or Halifax would be able to imagine themselves being present on the streets of the other city whenever the ambient sounds from that city interrupts the acoustic flow of the audio guide on the iPod. But as Lefebvre reminds us, the production of space is an embodied activity based on lived experience (1991: 137). In this sense, the social space that the audience members produce is not only the object of mental projection but also a result of an embodied experience that manifests in physical space.

In an instance that illustrates how the embodied activity of the audience members catalyzes the production of social space in *Landline*, the audio guide on the iPod delivers a prompt that requires all of them to find a “vertical object,” perhaps a “tree or a relatively clean lamp-post,” and stand in a way that their shoulders “barely” touch it (2014: 74). As the audience members position themselves besides this vertical object, they are asked to “pour [their] weight into that point of contact,” as one “might pour sand into a bag” (2014: 74). The audio guide then goes on to suggest that the connection between the audience members and the object would become “more solid and dense the more [they] pour in” (2014: 74). As one of the two designers of the performance, Dustin Harvey, explains, when the iPod “prompts the audience members to lean into things,” the request opens up the possibility for them to “use their bodies to imagine the other person and to allow their imagination to manifest that person” (“Landline Interview” 2014). Consequently, by interacting with structures and objects in the urban environment of their home city while exchanging text messages with their “scene partners” located in a different city, the audience members are reminded of their embodied connection with the surrounding urban spaces.

Throughout this chapter, we have seen how technology intervenes in the interactions between humans and urban spaces. The capacity of iPods, mobile phones, and mobile computers to affect the human perception of space and embodiment in *Rider Spoke* and *Landline* draws attention to the agency that these technological devices seem to possess, especially in terms of

their ability to shape the communicative experiences among the audience members. In the next chapter, I will explore the intersection of intermedial performance and techno-anxiety by looking at how intelligent machines that appear to perform autonomously might affect the audience members' perception of these anthropomorphic technological agents in relation to their own bodies. The chapter will focus on the ontological anxiety that impinges on the embodied encounters between the audience members and such performing machines as the Artificial Intelligence (AI) avatar, Jeremiah, in Susan Broadhurst's *Blue Bloodshot Flowers*, and the robotic cabaret dancers in Louis-Philippe Demers's *Tiller Girls*.

Chapter 4:

Autonomous Performing Machines: Techno-Anxiety in

Blue Bloodshot Flowers and Tiller Girls

“Anxiety is the result of the perception of the truth of one’s condition.”

- Ernest Becker, *The Denial of Death*, 1974, p.87

“The struggle to achieve autopoietic status can be understood as a boundary dispute in which one tries to claim the privileged ‘outside’ position of an entity that defines its own goals while forcing one’s opponent to take the ‘inside’ position of an allopoietic component incorporated into a larger system.”

- N. Katherine Hayles, *How We Became Posthuman*, 1999, p.161

Since the dawn of the twenty-first century, a myriad of new technologies, such as laptop computers, mobile tablets, smartphones, social networking platforms, and above all, the Internet, have permeated the many facets of contemporary social life. From education and banking to retail and entertainment, these new technologies have made it more convenient to purchase goods and services online. More significantly, they have also altered the ways in which human beings communicate with one another. Text messaging applications and social networking platforms offer us the opportunity to transmit text-based messages as well as visual and auditory media objects to as many people as possible in the shortest amount of time. But just as new technological devices and systems become ever more pervasive in our daily lives, the prospect of a “robotic future,” where robots thrive alongside human beings, has risen to the fore in technologically advanced societies. This prospect is evidenced by the deployment of humanoid

robots (known as “androids”) as talking guides at the 2005 World Expo in Aichi, Japan (Robertson 2011: 294).

Created by Japanese engineer Hiroshi Ishiguro, the androids at the World Expo in 2005 were designed to look, talk, and move like actual human beings. This anthropocentric impetus to reproduce the physical attributes and behaviour of humans in the form of mechanical robots may have arrived at its apotheosis in 2011 when Ishiguro constructed a male android with facial hair and wrinkles around the eyes. The android, dubbed “Geminoid DK,” was modelled after the Danish communications professor, Henrik Scharfe. Watching the video interview in which Scharfe discussed his research interest in the cultural acceptance of robots while his robotic doppelgänger mimicked his facial expressions and head movements, I was at once beguiled and perturbed by the uncanny similarities between the two figures. Seated behind an office desk, the professor and his technological “double” looked like a pair of identical twins. In a March 2011 report for the Institute of Electrical and Electronic Engineers (IEEE) magazine, *Spectrum*, technology editor Evan Ackerman admits that he found himself “wondering whether this [the Geminoid DK android] was in fact a real robot, or actually a person *pretending* to be a robot” (*IEEE Spectrum* 2011). Ackerman’s incredulous response to Henrik Scharfe’s robotic doppelgänger betrays a self-reflexive feeling of anxiety towards the capacity of robots to replicate the physical attributes and behaviours of human beings. The assumption that only a person can “pretend” to be a robot and not the other way round reveals the underlying tension between humans and such autonomous machines as the Geminoid DK android. Whereas most people would probably be comfortable with a human being dressing up as a robot and performing “robotic” movements, their attitude towards an actual robot’s ability to mimic the appearance and behaviour of humans might be less conciliatory. As such, these contrasting attitudes towards the

status of robots in society present us with an opportunity to investigate the relationship between humans and autonomous machines.

Situating the cultural effects of robotics within the theatrical context, this chapter explores the intersection of intermedial performance and techno-anxiety by looking at how intelligent machines that appear to perform autonomously might affect the audience members' perception of these anthropomorphic technological agents in relation to their own bodies. By drawing on the thinking of Ernest Becker, Søren Kierkegaard, and N. Katherine Hayles on the topics of death and anxiety as well as the "boundary dispute" that pervades human-machine interaction, I will examine the techno-anxiety that impinges on the embodied encounters between the audience members and such performing machines as the Artificial Intelligence (AI) avatar, Jeremiah, in Susan Broadhurst's *Blue Bloodshot Flowers* (2001), and the autonomous robotic dancers in French-Canadian artist Louis-Philippe Demers's *Tiller Girls* (2010). In light of the manifestation of anxiety-inducing phenomena in these intermedial performances, I argue that the audience members' perception of autonomous performing machines involves a negotiation between a secure sense of human agency and the fear of being supplanted by machine actors. My contention is that the autonomy that the performing machines in *Blue Bloodshot Flowers* and *Tiller Girls* exhibit serves to remind the audience members of their existential finitude, an experience that reinforces their feeling of techno-anxiety over the perceived threat that autonomous machines pose to the human condition. In order to understand the human fear of technology, the next section will explore the ways in which the contemporary cultural movement of Neo-Luddism has appropriated the technological wariness of the original British Luddites – a group that was motivated by economic imperatives rather than the absolute rejection of technology – as a means to legitimize the depiction of technology as a powerful force that is on the verge of destroying

humanity. Following this survey of technological fear, the remaining sections of the chapter will be given to close readings of Broadhurst's *Blue Bloodshot Flowers* and Demers' *Tiller Girls*.

4.1 Neo-Luddism and the Fear of Technology

Attitudes towards technology and the notion of “technological progress” vary between individuals, societies, and cultures. On one end of the spectrum, there are the proponents of artificial intelligence and other “cutting-edge” technologies like the MIT robotics researcher Hans Moravec and the inventor Ray Kurzweil who celebrate technology's potential to liberate us from the material finitude of the human body (an issue that I will return to in Chapter 5, which looks at disability and cyborg performance). At the other extreme, there are those who warn that current technologies such as mobile phones and the Internet are deteriorating the intellectual and cognitive development of adults and children alike. The American writer Nicholas Carr broaches this topic in his 2008 essay, “Is Google Making Us Stupid?”, which explores the dangers that the Internet poses to the intellectual development of human beings. A couple of years later, in 2010, Carr published *The Shallows: What the Internet is Doing to Our Brains*, in which he advances the thesis that the Internet is altering the neurological pathways and cognitive functions of the human brain. Citing scientific research on neuroplasticity, Carr claims that using the Internet results in neurological changes that can affect the attention and memory of people who rely on computers and the Internet for reading and other tasks that require long periods of concentration (2011: 32-35). While it might be tempting to dismiss Carr's description of the effects of the Internet as alarmist (and some people might even call him a “Luddite”), it is important to understand the logic of technological anxiety that informs Carr's portentous account of technology.

What does it mean to be a “Luddite” in the digital age? According to the British psychologist Mark J. Brosnan, the adjective “Luddite” has been employed as “a derogatory term

applied to anyone showing vague technophobic leanings” (2002: 155). But being technologically inept does not necessarily imply that one is technophobic. While young, savvy users of computers and the Internet may regard their elders as technologically inept, they may not necessarily be aware of the history and beliefs of the Luddites. In his historiographical study of the early-nineteenth-century British Luddites and the more recent cultural movement known as “Neo-Luddism,” the digital humanities scholar Steven E. Jones notes that the use of the adjective “Luddite” in contemporary discourse varies between individuals who harbour different attitudes towards technology. For people who happen to be “pro” technology, the term is synonymous with “technophobia,” which is a direct reference to anyone who may be averse to technological progress. Jones regards such a pejorative treatment of the term “Luddite” as symptomatic of “defensive anxiety and ideological motivation” on the part of technophiles (2006: 41). As for those who are suspicious of technology’s perceived dominance in contemporary society, Jones purports that expressing “sympathy for the Luddites can merely signal a resistance to technophilic marketing and fashion” (2006: 41). In order to understand why the mystique of the early-nineteenth-century British Luddites continues to hold sway among people who are anxious about the effects of technological advancement, a group of individuals living in technologically advanced societies whom Jones refers to as “neo-Luddites,” we must look back at the history of the original British Luddites and establish the motivations for their resistance against technology.

The historical British Luddites were textile workers who created a myth of Ned Ludd as their leader, whose family name “Ludd” became the defining identity of the movement (Jones 2006: 20). Operating in clandestine fashion between 1811 and 1816, the group’s “community-based actions targeted unfair labor practices” in the industrial heartlands of Nottinghamshire and the West Riding of Yorkshire (Jones 2006: 20). The early-nineteenth-century was a time of intense technological change. With the onset of the Industrial Revolution in major towns and

cities across Britain and Europe, the traditional means of production were radically transformed. As cottage industries that relied heavily on manual labour for textile manufacture gave way to mechanized industrial processes that required far fewer workers, a group of weavers from the English midlands organized themselves into an armed band known as “the Luddite movement”. As the British historian E. P. Thompson elucidates, “[t]he Luddite attacks were confined to particular industrial objectives: the destruction of power-loom (Lancashire), shearing-frames (Yorkshire), and resistance to the break-down of custom in the Midlands framework-knitting industry” (1964: 484). Thompson notes that the weavers involved in the Luddite movement of the 1810s were not disorganized “rioters”. Operating as “smaller, disciplined bands,” they “moved rapidly from village to village at night” (1964: 554). Under the cover of darkness, the weavers destroyed the technological implements that served to mechanize their craft. But despite their rage against the machines, the original Luddites were not fighting against technology in the broader sense. As Jones reminds us, “we have to remember, the historical Luddites were themselves technologists – that is, they were skilled machinists and masters of certain specialized *technes* [...], by which they made their living” (2006: 9). In other words, the struggle of those weavers from the English midlands was an economic one. According to Jones, the historical Luddites were breaking up the knitting machines in order to protect their “living and the right to *their* technology” rather than “some Romantic idyll in an imagined pretechnological nature” (2006: 9). Put simply, the Luddites were not anti-technologists with a penchant for romanticizing nature. But why has the history of the original British Luddites become the primary inspiration for the neo-Luddites of the late-twentieth and early-twenty-first centuries?

Perhaps we could begin by asking: “Who or what is a neo-Luddite?” A neo-Luddite, as Jones elucidates, is “someone whose choice of philosophy or lifestyle is a deliberately symbolic act, a back-formation based on the received idea of a historical labor movement” (2006: 20).

Jones asserts that the neo-Luddites of today operate as a community of intellectuals and middle-class white-collar workers who “look to the Luddites for the moral authority of working-class experience, a grounding in material realities that seem increasingly elusive in today’s alienated, technologically mediated, virtual economy” (2006: 8). Drawing on the image of the early-nineteenth-century British Luddites, the contemporary cultural movement of neo-Luddism is thus “a personal philosophy pitted against technology as an abstract force” (2006: 20). Jones’ description of how the adherents of neo-Luddism perceive technology as an “abstract force” is instructive. In contrast to the historical Luddites who targeted a specific technology – the mechanized stocking frame – for destruction, today’s neo-Luddites do not appear to be interested in destroying any particular technological device. Instead, they choose to embark on a symbolic campaign against technology, which they perceive to be an overarching power that is going out of control and threatening the human condition.

The adherents of neo-Luddism include activists, writers, and journalists who draw inspiration from Kirkpatrick Sale’s *Rebels Against the Future* (1995), which traces the “late twentieth-century antitechnology sentiments to a legendary ‘origin’: the Luddites of 1811” (2006: 23-4). By claiming to be the modern successors of the original British Luddites, the neo-Luddites of today have appropriated the social, political, and economic legacy of the historical Luddites to suit their own symbolic campaign against technological progress. As Jones observes, the neo-Luddite movement emerged during the boom years of the technology industry in the late 1990s. He further notes that this technological boom was motivated by “a collective ideation” among futurists and entrepreneurs “about the infinite power of technology,” particularly in terms of its ability to augment the physical and cognitive limitations of human beings (2006: 23). However, what Jones describes as the “High neo-Luddism” of the late 1990s was also “based on the idea that technology is a powerful, autonomous, inevitable force – but in this case, a force for

destruction and the diminishment of humanity” (2006: 23). From the perspective of the neo-Luddites, technology appears to be escaping the grasp of human mastery, and could potentially turn against its human creators. As such, Jones contends that today’s neo-Luddites allude to the historical legacy of the British Luddites as “a way to declare that technology has a history, and thus has human limits” (2006: 42). By applying “human limits” to technology, the neo-Luddites are able to assuage their anxieties about “the ubiquity and autonomy of the oppressive system” (2006: 8). As Jones points out, neo-Luddism in the twenty-first century “expresses philosophical anxiety about the essential nature of what it means to be human in an age of autonomous technology” (2006: 40). But even those who do not identify themselves as Luddites may “share the fundamental view that what humans have made now threatens to unmake humanity, that our technology has somehow dehumanized us and must be (somehow) resisted” (2006: 43). For this reason, the adherents of neo-Luddism are inclined to believe that any attempt at resisting the flow of technological progress, even if it is merely a symbolic gesture with no palpable outcome, might help to delay or reverse the threat of technological dehumanization.

As the French philosopher Jacques Ellul argues in *The Technological Society*, the autonomy bestowed upon machines has allowed them to perform the productive activities of human beings (1964: 4). For Ellul, the machine “is pure technique,” in the sense that “technique transforms everything it touches into a machine” (1964: 4). In other words, the emergence of autonomous machines in factories that perform the same tasks as human workers has transformed the human being into a mechanical entity whose functions can be dissected and analyzed. Ellul believes that not only are there “dehumanized factories,” where autonomous machines have replaced the labour of human workers, but the human being has also been dehumanized as a result of mechanization (1964: 4). The sense of techno-anxiety that Ellul invokes in his warning about dehumanization is indicative of an anthropocentric impulse to maintain human mastery

over the development and operation of technology. Joining this attempt to foreground the danger of autonomous technology and its potentially dehumanizing effects is the political scientist and philosopher of technology, Langdon Winner, who emphasizes the importance of “rethinking what it means to be human in the first place” (2005: 405). “Far from being an exhausted concept or failed project,” Winner argues:

Being human is a question whose possibilities are very much open to intellectual inquiry and practical realization. The relevant category, in my view, is perhaps less that of ‘human nature’ than of the ‘human condition.’ To face this condition squarely involves, for example, the recognition of mortality as a basic fact of existence. (2005: 405-6)

While it might not be possible to arrive at an absolute definition of what it means to be human, the acknowledgement of our mortality as human beings serves as a reminder of our shared finitude with other nonhuman beings, both living and non-living. Indeed, nothing lives or lasts forever. But perhaps it is this recognition of human mortality that lies at the heart of the techno-anxiety that pervades the relationship between autonomous machines and human beings. If autonomous machines can behave like human beings, then confronting the same machine when it breaks down would serve to remind us of our essential “thingness” – that is, we are as much a thing as any technological device that finds itself in a landfill once it ceases to function. And even if the machine were to operate at the optimal level, we are nonetheless confronted by its potential to outlast us. Amid the expanding role of such autonomous machines as robotic arms and android tour guides in contemporary society, Winner remains concerned about the plight of the human condition in the age of artificial intelligence (AI) and digital technology.

Alluding to the dehumanizing potential of autonomous machines, Winner alleges that “[t]he penchant for placing the technical hardware before the human (and it has come to that in

much of contemporary thinking) is to my mind a terrible blunder, the perfect operational definition of a condition long feared in modern society – dehumanization” (2005: 406). Once again, a hierarchy is established between technology and humans, but this time, the future of the human condition is at risk of being subjugated by the power and perceived dominance of technological devices. For Winner, invoking the prospect of dehumanization has become a convenient means by which to cast technology as a potent force that threatens to alter the physical and cognitive constitution of the human being. While some of us may feel uncomfortable in the presence of a humanoid robot like the Geminoid DK android that mimics the appearance and behaviour of a real-life Danish professor, such a situation does not necessarily imply that we should re-assert the mastery of the human being over all other forms of existence. Instead, it seems to me that the challenge remains as to how we can resist the temptation either to privilege technology over the human or to use it to justify the superiority of the human species over all living and non-living things. I will attempt to address this challenge by exploring the dramaturgical strategies that intermedial performance artists employ in order to encourage the audience members to reflect on the techno-anxiety that arises as a result of their encounter with such autonomous performing machines as the artificial intelligence (AI) avatar, Jeremiah, in Susan Broadhurst’s *Blue Bloodshot Flowers* and the dancing robots in Louis-Philippe Demers’ production of *Tiller Girls*.

4.2 Playing with an AI Avatar in *Blue Bloodshot Flowers*

As the houselights faded in 291 Gallery, an art gallery housed in a deconsecrated Neo-Gothic church in London, the ensuing darkness evoked a feeling of anxiety among the audience

members gathered in the building. Moments later, Jeremiah, an AI avatar,²⁸ appeared on the stage with Elodie Berland, a human actor. While Berland was physically present on the stage, Jeremiah, whose humanlike head was the only body part visible to the audience, appeared as an animated AI avatar on a black curtain. Yet despite *his* virtual existence,²⁹ Jeremiah was capable of seeing the audience (through the use of surveillance cameras) and expressing his emotions in reaction to the movement of bodies and objects within his field of vision. Together, Berland and Jeremiah performed a story about unrequited love. Berland, though human, did not speak in her own voice. Instead, a pre-recorded voiceover served as a memory device that recounted her recollections of a departed lover. Even though some audience members assumed that Jeremiah represented the departed male lover,³⁰ his relationship with Berland remained ambiguous throughout the performance.

Making its debut at the 291 Gallery in August 2001, *Blue Bloodshot Flowers* was an intermedial performance devised by theatre scholar Susan Broadhurst and computer scientist Richard Bowden. Philip Stainer, a British writer and theatre researcher, wrote the original story on which the performance is based. Through the intersection of performance and technology, *Blue Bloodshot Flowers* explored the ontological tension that emerges when technology interacts with the human body on the stage. In an attempt to interrogate the level of anxiety that such an

²⁸ The *Oxford English Dictionary (OED)* notes that the word “avatar” is derived from the Sanskrit, *avatara*, meaning “descent”. In Hinduism, the word refers to a “manifestation of a deity [...] on earth”. In its contemporary meaning, avatar points to the “icon or figure representing a particular person in a computer game, Internet forum, etc.” In Broadhurst’s performance, the AI avatar operates as both an icon of a human person and an interactive machine.

²⁹ The use of the third-person possessive male pronoun “his” to refer to Jeremiah is in keeping with Broadhurst’s terminology, as reflected in her original description of the AI avatar in the production notes on the performance.

³⁰ Initially, Broadhurst and Bowden wanted to design a female avatar or an animated head with the face of a child. In the end, they decided to settle for a male AI avatar, so as to allow the audience members to interpret the meaning of its “virtual presence” in the performance, as well as its relationship with the human actor, Elodie Berland (2004: 49).

encounter between humans and technology might evoke, Broadhurst invited the audience to come onto the stage in the second half of the performance in order to experience for themselves the feeling of interacting with an AI avatar. As they waved their hands and walked about on the stage, the audience members were able to elicit an emotional response from Jeremiah. These emotions ranged from excitement whenever Jeremiah detected rapid physical movement to frustration when he was confronted by slow-paced hand gestures.

Emerging at the cusp of the twenty-first century, *Blue Bloodshot Flowers* exemplified a participatory mode of performance in which the audience members were physically engaged with the work of art. Such an interactive experience presented them with the opportunity to explore the impact of media technologies on the human perception of embodiment and existential finitude. Building on the technological affordances of an artificial intelligence (AI) engine that mimics human emotions, as well as the Geoface facial mapping system (DECface) that constructs anatomically accurate human faces, Broadhurst's technical collaborator, Richard Bowden, developed a computer-generated animated head with the ability to express emotions. By simulating the bone structure of the human skull and applying a digitally compressible mesh over that structure, Bowden was able to alter the facial expression of Jeremiah, and to do so in relation to a range of human emotions, including anger, sadness, and happiness (Broadhurst 2004: 50). Using a purpose-built AI engine, Jeremiah can display emotions that correspond to specific external stimuli in real-time. During the performance in 2001, video surveillance cameras were connected to the AI engine that regulated Jeremiah's emotions. These cameras helped to capture the actions of the human actor, Elodie Berland, as well as the audience members who interacted with Jeremiah by way of hand gestures and bodily movements. In turn, the images of these actions were relayed to the AI engine for processing, thereby generating an appropriate emotional

response on Jeremiah's face. Because of this technical sleight of hand, it seemed as though he was capable of seeing the audience members whenever they moved into his field of vision.

Broadhurst's use of the phrase "artificial intelligence" to describe the computer engine that mobilizes Jeremiah's display of emotions in the performance is fraught with ambiguity, especially in light of recent debates in the field of cognitive computing over what constitutes general intelligence. According to computer scientists Michael I. Jordan and Stuart Russell from the University of California, Berkeley, the "consensus" in artificial intelligence research "is that AI is about the design of intelligence agents" (2001: lxxv). "An agent," Jordan and Russell explain, "is rational to the extent that it can be expected to achieve its goals, given the information available from its perceptual processes" (2001: lxxv). If we accept Jordan and Russell's behaviourist model of artificial intelligence, whereby the intelligence of an agent is contingent on its ability to achieve specific goals by processing perceptual information such as visual stimuli and movement in the environment, then Jeremiah would seem to fit the bill as an intelligent agent. However, the semblance of intelligence on Jeremiah's part in the 2001 production of *Blue Bloodshot Flowers* was frustrated by his slow and sometimes confused reactions to the gestures and actions of the human participants in the performance. Nevertheless, the delay in Jeremiah's responses to external stimuli also provided an opportunity for Broadhurst to explore the perception of human-machine interaction in intermedial performance.

We live in an age where digital avatars and various media simulations have become commonplace, as evidenced by the fashioning of virtual personas and environments in video games, online advertisements, as well as intermedial performances. For this reason, media theorists and designers are seeking to understand the ways in which interactive digital media objects affect the perception of human individuals who come into contact with them. In her study of networked presence in digital environments, Beth Coleman turns to what Byron Reeves and

Clifford Nass dub “the media equation” as a theoretical lens through which to analyze how human beings perceive avatars and other media simulations. For over two decades, Reeves and Nass had conducted numerous experiments on the human perception of simulated objects and discovered that human beings cannot distinguish between real and mediated visual signals. Writing in their book, *The Media Equation*, they contend that, “Individuals’ interactions with computers, television, and new media are fundamentally social and natural, just like interactions in real life” (1996: 5). Reeves and Nass believe that people engage with, and respond to, media stimuli in social rather than technical terms. Their experiments reveal that humans tend to discern a degree of personality in any object – whether it is real or mediated – that possesses human attributes such as a mouth and a pair of eyes. In turn, the perception of humanness in mediated objects mobilizes a social response on the part of the human perceiver.

Building on Reeves and Nass’ point about the sociality of media engagement, Coleman argues that in addition to responding to media technologies in a “social manner,” human beings also “treat images that appear on a screen as real” (2011: 69). Looking at the representational potential of avatars as identity markers, she asserts that humans are inclined to see personality in the things that they encounter. It is this ability to see personality in things that enable human beings to become what Coleman calls “equal opportunity agency attributors,” as even digital avatars are endowed with the agency to facilitate “real-time rich media connections” between human individuals located at separate geographic locations (2011: 70). But digital avatars, including Jeremiah in *Blue Bloodshot Flowers*, are not inert or neutral entities, for they are capable of eliciting intense reactions from human observers. “Avatars,” as Coleman elucidates, “provoke strong human responses because they send strong human signals” (2011: 72). As such, there is always a possibility that negative social attitudes would spill over from the “real” world (i.e., the social reality of everyday life) into the simulated environment of the virtual world. This

scenario is especially likely if the avatar in question possesses traits that correspond to certain stereotypical impressions of race, ethnicity, gender, or sexual orientation. However, while Jeremiah appears as a male avatar with a greyish-blue skin tone, there is no visible indication of his race, ethnicity, or sexual orientation. In contrast to the use of avatars in networked gaming and online forums as virtual identity markers controlled by unseen human agents located across the world, Jeremiah's AI engine enables him to operate as an autonomous digital entity in *Blue Bloodshot Flowers*. Given his autonomy in the performance, he seems to be acting on his own terms as a nonhuman machine rather than representing the personality of an unseen human agent. In this sense, his relationship with Elodie Berland on the stage could be seen as one that transpires between an autonomous machine actor and a biologically human actor.

As mentioned earlier, the 2001 production of *Blue Bloodshot Flowers* featured two actors: Berland, who physically performed on the stage, and Jeremiah, the nonhuman AI avatar that exists as an animated virtual head on a black curtain. Realizing the critical potential that undergirds the juxtaposition of physical and virtual entities in a mediatized environment, Broadhurst sought to question the "apparent seamlessness of performance and technology" by analyzing the impact of new "intelligent" technologies on the "physical body in performance" (2004: 54-5). The appearance of physical and virtual actors in the same performance is reflective of Broadhurst's "belief that tensions exist within the spaces created by the interface of body and technology" (2004: 48). She contends that no body, be it the physical human body or the virtual body of an AI avatar like Jeremiah, can avoid the symbolic power of representation. In the same way that the human body, whether clothed or naked, avails itself to the possibility of representation, Broadhurst purports that what is regarded as "the virtual body (as any other body) inscribes its presence and absence in the very act of its performance, leaving gaps and spaces within its wake" (2004: 48). In other words, the act of performance allows all actors, both

physical and virtual, to register their presence and absence on the stage through the various entrances and exits that mark the progression of the dramatic action.

But whereas the human body as a material reality may continue to exist beyond the final scene of a play, during which the human actor sheds her persona and returns to her daily life, the presence of a virtual body, such as that belonging to Jeremiah, might appear to be confined to the actual duration of the performance. From the perspective of the human audience, it seems that once the show is over and the computer system that animates the AI avatar is switched off, the virtual body would cease to exist. However, the show's programmers are well aware that Jeremiah's virtual body continues to exist as a set of codes and protocols in the memory bank of the computer. Unless a human being or a self-replicating virus attempts to erase all traces of it, the virtual body is always present as bits of data stored in the computer system. Yet the data and the storage medium that contains it remain susceptible to degradation and destruction. This degenerative potential is what the Dutch media theorist José van Dijck describes as the "vulnerability" of digital media. Van Dijck considers the "coded layer of digital data" to be "an additional type of materiality, one that is endlessly pliable and can easily be 'remediated' into different physical formats" (2007: 47). However, just as the human brain is vulnerable to memory loss, "this new type of materiality," she contends, "is equally vulnerable to decay – a degenerative process that is part and parcel of human memory" (2007: 47). Van Dijck's comparison of the vulnerability of digital memory to that of human memory is illuminating, as it implies that the long-term preservation of digital materials cannot be guaranteed. As the formats of software and digital applications become obsolete, she notes, "digital files may start to degrade or become indecipherable" (2007: 48). What this means is that Jeremiah's existence is contingent on the ontological integrity of the digital files that support his virtual presence as an AI avatar in *Blue Bloodshot Flowers*. If these files should become corrupted or incompatible with the formats

of newer software and digital applications, the prevailing iteration of Jeremiah would disappear forever. In this sense, the life of Jeremiah's virtual body is just as vulnerable as Berland's human body, which is always already susceptible to the threat of irrevocable destruction.

In her description of an incident that transpired during the debut of *Blue Bloodshot Flowers* in 2001, Broadhurst alludes to the vulnerable plight of virtual bodies at the hands of human beings. Given that Jeremiah is supported by an artificial intelligence system that evolves through its interactions with the audience members, Broadhurst reveals that she and her team "had no way of controlling his behaviour, which he learned as he went along" (2006: 144). As a result, she could not prevent Jeremiah from displaying what she considers to be "fairly inappropriate behaviour such as demonstrating happiness at an intense moment in the performance" (2006: 144). She did entertain the thought of turning the avatar off whenever it behaved "inappropriately". However, everyone on the production team was "very reluctant to do this," choosing instead to let Jeremiah perform in his own way (2006: 144). Broadhurst's attitude towards Jeremiah is significant on two levels. On the one hand, she is concerned about the possibility of losing control over the behaviour of an autonomous performing machine like Jeremiah. On the other hand, her reluctance to turn the machine off despite its perceptibly "inappropriate behaviour" in the performance suggests that she might have developed an emotional attachment towards the virtual entity. But while Jeremiah's fate may rest in the hands of its human creators, the uncanny resemblance of its facial features and behaviour to those of actual human beings unsettles the audience members as they confront an intelligent machine that is elusive and unfamiliar. In this way, the finite existence of an intelligent virtual entity like Jeremiah, which can be turned off or eradicated by way of human intervention, appears to mirror the existential finitude of human beings.

Coming face to face with an animated head that is capable of reacting to the actions of human beings through the display of humanlike facial expressions, it might be hard for audience members in *Blue Bloodshot Flowers* to overlook the uncanny resemblance of Jeremiah to a real-life human being, both in terms of appearance and behaviour. Even though he does not speak, he is able to learn from his encounter with anyone who comes before him and respond to that person through his facial expressions. “Jeremiah,” as Broadhurst points out, “is capable of not only interacting but also reacting” (2004: 50). Yet Broadhurst and her scientific collaborator, Richard Bowden, do not appear to be interested in creating a direct replica of a living person. Despite the expressivity of his face, Jeremiah is without a body. Such a conspicuous gap in Jeremiah’s anatomy – if we consider him to be a digital rendering of a human being – is all the more jarring when Berland, the human actor, has to rely on the kinaesthetic potential of her body in order to engage with Jeremiah. As I have noted earlier, Berland does not speak in her own voice. Instead, a pre-recorded voiceover narrates the story about her long-lost lover. Furthermore, it is not clear if the recorded voice actually belongs to her. As the performance unfolds, the prominence of the narrative begins to recede, while the intersection of Berland’s embodied actions and Jeremiah’s facial expressions, which are modelled on the muscular movements of the human face, propels the dramatic action forward.

In a March 2005 email to the digital performance theorists, Steve Dixon and Barry Smith, Broadhurst explains that *Blue Bloodshot Flowers* does not seek to abandon the physical body. Rather, the performance affirms the co-presence of physical and virtual entities, as human actors perform alongside new technologies on the same stage as equal partners. “Although much interest is directed toward new technologies such as Jeremiah,” Broadhurst writes, “technology’s most important contribution to art may well be the enhancement and reconfiguration of an aesthetic creative potential which consists of interacting with and reacting to a physical body, not

an abandonment of that body” (Broadhurst qtd. in Dixon 2007: 56). Indeed, it is not through human speech but through the embodied acts of jumping, waving, and tossing flowers with her hands that Elodie Berland is able to elude an emotional reaction from Jeremiah. By focusing the audience members’ attention on the embodied interactions between Berland and Jeremiah, *Blue Bloodshot Flowers* unfolds a critical techno-dramaturgy that probes the ontological tension between physical and virtual bodies in performance as well as the audience members’ perception of autonomous performing machines.

Despite having only an animated head and not a complete body, Jeremiah’s virtuosity as a computer-generated cast member in the performance is marked by the randomness of his facial expressions. Using the Geoface articulated bone model, DECface, a software which affords the flexibility to animate different facial expressions on a humanlike digital face, the computer scientist Richard Bowden assigned the following four emotional expressions to Jeremiah: happiness, sadness, anger, and fear (Bowden, Kaewtrakulpong and Lewin 2002: 126). While Jeremiah’s emotional expressions may be predetermined, their appearance throughout the performance is contingent on the external stimuli (i.e., the actions performed by Berland and the audience members) that Jeremiah picks up through the video surveillance cameras that are supposed to serve as his “eyes”. Other facial movements such as the blinking of the eyes and the frowning of the brow also occur at random, which thereby emphasize the uncanny resemblance of Jeremiah’s face to that of a living person. It is Jeremiah’s capacity to mimic the physical attributes of the human face and the random expressivity of human facial movements that some audience members and performance artists might find unsettling.

Although Broadhurst admits that the random quality of Jeremiah’s behaviour “can be disruptive during a performance,” she nonetheless submits to the view that such “unpredictability adds a further ‘real-life’ dimension to working with this virtual being” (2004: 51). What exactly

Broadhurst means by “real-life” remains uncertain in her discussion of *Blue Bloodshot Flowers*. However, any attempt to approximate “realness” in performance tends to be burdened by questions of authenticity and falsehood, and this dichotomy is foregrounded by Jeremiah’s apparent autonomy as an actor in an intermedial environment. As Steve Dixon observes, some live performance artists who insist on the “enactment of ‘embodied’ authenticity” find limited appeal in what they regard as the “artificiality and falsehood of the digital image” and would refuse to incorporate it into their work (2007: 24). Commenting on what he calls the “digital double” that appears to duplicate the human body as a virtual entity, either in full or in parts, Dixon surmises that such resistance against the incorporation of digital elements into performance art is supplemented by a suspicious attitude towards the endowment of the digital body with “equal status and authenticity to the biological one” (2007: 24). Put differently, the human actor’s presupposed superiority over the “digital double” is reinforced.

In *Blue Bloodshot Flowers*, the autonomy that Jeremiah exhibits might come across as an inferior imitation of human behaviour. Some audience members may even reject the suggestion that Jeremiah exists as an autonomous performing machine that does not require human supervision throughout the performance. Yet, as Dixon points out, “Jeremiah’s vision system, AI, and emotion engine software enable him to be a wholly spontaneous and independent ‘actor,’ [...] whose actions and reactions are not controlled by offstage technicians (he is essentially turned on and let loose)” (2007: 56). In this sense, the organization of processes that instantiate Jeremiah’s behaviour in the performance resembles what the Chilean biologists Humberto Maturana and Francisco Varela refer to as “*autopoiesis* or self-making” (Hayles 1999: 136). In their study of autopoiesis in living systems, Maturana and Varela propose that the “living organization is a circular organization which secures the production or maintenance of the components that specify it in such a manner that the product of their functioning is the very same

organization that produces them” (1980: 48). An autopoietic system is considered a living system insofar as the interactions between the components that comprise the organization of the system (for instance, the interactions between cells in a biological system or the feedback loops between a light-sensitive electric sensor and a sound-emitting device in a photoelectric smoke alarm) are maintained in order for it to function autonomously. Jeremiah appears to be an autonomous living system due to the sustained interactions between the surveillance cameras that serve as the visual system and the AI engine that processes the appropriate emotional reactions in response to physical stimuli on the stage. If any of these components in the overall system were to stop working, Jeremiah’s self-generating autonomy in the performance would be curtailed, as human intervention is required to either repair or replace the problematic component.

Despite the self-reflexive organization of the autopoietic system, however, Maturana and Varela are aware that living systems do not exist in a vacuum (1980: x). In her discussion of Maturana and Varela’s theory of autopoiesis, N. Katherine Hayles makes reference to their concept of “structural coupling” (1999: 138). According to Hayles, the concept holds that “[a]ll living organisms must be structurally coupled to their environments to continue living” (1999: 138). We can see how Jeremiah’s behaviour in *Blue Bloodshot Flowers* coheres with that of a living system, as he is capable of responding directly to the physical stimuli produced by Berland and the audience members on the stage. At the same time, Jeremiah’s reaction to the physical stimuli emerges as a result of the communicative loop between the AI engine that generates a range of emotional responses and the digital avatar that expresses these emotions on the projection screen. What this means is that Jeremiah is structurally coupled with both the digital informational environment of the AI engine that supports his virtual existence in the performance as well as the physical environment of the stage, which consists of cameras, motion sensors, projectors, computers, and the human audience. Thus, it is on the basis of Jeremiah’s structural

coupling with the physical and virtual environments that constitute the intermedial setup of *Blue Bloodshot Flowers* that his identity as an autonomous performing machine can be maintained.

Nevertheless, it is worth noting that even though Jeremiah may be structurally coupled with the physical and virtual environments of the performance, not every audience member would be willing to interact with him. Because Jeremiah's facial expressions and emotional reactions in the performance are spontaneous rather than pre-determined, the autonomy that Jeremiah displays might unsettle some audience members. The British performance theorist Steve Dixon sums up the autonomy of Jeremiah's behaviour as such: "he is essentially turned on and let loose" (2007: 56). Dixon's use of the phrase "turned on and let loose" is curious, for it is reminiscent of the neo-Luddite logic of technological fear, whereby machines become so proficient at exhibiting autonomy that they might eventually go out of (human) control. But despite the efficacy of AI systems in facilitating the autonomy of nonhuman entities like Jeremiah, not everyone is fearful of the prospect of autonomous machines going out of control.

For the MIT robotics engineer, Rodney A. Brooks, whose career is intimately connected to autonomous machines, the rapid production of small autonomous robots is not only economical but also desirable. In a 1989 paper on the role of robots in interplanetary space exploration, Brooks and his colleague, Anita M. Flynn, describe their theory of robotics using the phrase, "Fast, Cheap and Out of Control". Together, they argue for the deployment of "large numbers of mass produced simple autonomous robots that are small," rather than relying on wheeled or legged mobile robots that are huge, heavy, and expensive to construct (1989: 478). According to Brooks and Flynn, "totally autonomous robots can be more reliable than ground controlled robots," as these tiny autonomous robots can make use of "force control with tight sensing feedback loops" to navigate the surface of a foreign planet without the supervision of human agents back on earth (1989: 478). Any problems encountered by the robots during the

mission can be resolved immediately at the scene. Furthermore, Brooks and Flynn believe that the cost of building these robots will also be significantly reduced, “as there is no need for much of the communications equipment, and no need for the ground support maintaining communications” (1989: 478). The operational simplicity of these autonomous robots, coupled with the rapid pace at which they are produced, epitomizes Brooks and Flynn’s desire to create autonomous machines that are “fast, cheap and out of control”.

However, while robotics engineers and scientists such as Brooks and Flynn may find the economic and operational benefits of fully autonomous robots appealing, others might be inclined to interpret the autonomy of performing machines like Jeremiah as a threat to human mastery in the world. Through a combination of technological fear and a prejudicial attitude against autonomous performing machines, an ontological tension between the presupposed authenticity of human actors and the seemingly spurious quality of autonomous virtual entities could potentially emerge in an intermedial performance such as *Blue Bloodshot Flowers*. This ontological tension, I contend, could also heighten the level of techno-anxiety experienced by audience members and performance artists who fear that autonomous performing machines might eventually supplant human actors in performance practice. In the next section, I will examine how Jeremiah’s uncanny resemblance to the facial appearance and behaviour of a human being reminds the audience members of their existential finitude.

4.3 Uncanny Resemblance

To say that Jeremiah bears an uncanny resemblance to the facial appearance and behaviour of a human being would suggest that his presence in *Blue Bloodshot Flowers* evokes feelings of discomfort and anxiety among the audience members who interact with him. The German psychiatrist Ernst Jentsch introduced the notion of the “uncanny” in his 1906 essay, “On

the Psychology of the Uncanny”. While Jentsch defines the uncanny as the fear of anything new and unfamiliar, the Austrian neurologist and psychoanalyst Sigmund Freud asserts that the sheer novelty of a thing is not enough to render it uncanny. Drawing on Jentsch’s foundational work, Freud further develops the definition of the uncanny in his 1919 article, “The Uncanny,” by characterizing the psychological experience as the “unhomely” feeling (“*unheimlich*” in the original German) that stands in direct contrast to the “homely” feeling (“*Heimlich*”). According to Freud, things that are familiar would educe the “homely” feeling, whereas what is considered uncanny is “frightening precisely because it is not known and familiar” (1919 I: para.6). As such, the uncanny is “*unheimlich*” because it elicits the “unhomely” feeling in the human being who encounters a strange and unfamiliar thing.

However, Freud is quick to caution against the assumption that anything new and strange is inherently uncanny (1919 I: para.6). Instead, he believes that “[s]omething has to be added to what is novel and unfamiliar in order to make it uncanny” (1919 I: para.6). In searching for the additional property that renders something uncanny, Freud observes that the word “*heimlich*” describes two different sets of ideas: “on the one hand,” he notes, “it means what is familiar and agreeable, and on the other, what is concealed and kept out of sight” (1919 I: para.3). What these two definitions of “*heimlich*” reveal is that the word “*unheimlich*” essentially refers to that thing which is not only new and unfamiliar but has also been unconcealed and released from hiding. Therefore, the uncanny experience, as Freud understands it, is triggered when a hidden attribute of an unfamiliar thing is suddenly revealed to any human person who comes into contact with it.

As an autonomous performing machine, Jeremiah’s presence in *Blue Bloodshot Flowers* is both fascinating and disconcerting to the audience members. Susan Broadhurst’s techno-dramaturgical strategy for the 2001 production in London involved the separation of the performance into two parts. In the first part, Jeremiah, the AI avatar, performed “a scripted

movement-based interactive piece with [Elodie] Berland,” the human actor (Broadhurst 2011: 144). During this time, the audience members focused their attention on Berland, as they attempted to make sense of her relationship with Jeremiah. However, as Broadhurst notes, “the spectator’s focus shifted to Jeremiah when he decided to display fairly inappropriate behaviour such as demonstrating happiness at an intense moment in the performance” (2011: 144). The intrusiveness of Jeremiah’s behaviour in the first half of the performance offered the audience members a preview of his capabilities as an autonomous performing machine, even though some of them might have assumed that the avatar’s actions throughout the show were programmed by human agents. However, when the AI avatar became the “sole focus during the second part of the performance,” the audience members had, as Broadhurst points out, the opportunity to “interact directly with Jeremiah and to explore his supporting technology” (2011: 144). It was through this interactive portion of the performance that Jeremiah’s capability to respond instantly and spontaneously to physical stimuli was exposed to the audience members. The behaviour of the AI avatar had not been pre-programmed. As the audience members experimented with different ways to capture Jeremiah’s attention, whether by jumping about on the stage or by rapid hand gestures, their affinity towards the AI avatar in the first half of the performance soon gave way to anxiety and confusion about the humanlike facial appearance and behaviour of the autonomous performing machine in the second, unscripted portion of the show.

The video recordings of the interactions between Jeremiah and the audience members during the 2001 production reveal a broad range of responses among the human participants in the performance,³¹ including Elodie Berland, the human actor. Some audience members were eager to test the speed of Jeremiah’s reaction to physical stimuli by clapping their hands and

³¹ The video recordings, director’s notes, and technical information relating to the production of *Blue Bloodshot Flowers* and the artificial intelligence (AI) technology employed in the 2001 performance can be found at: <http://www.brunel.ac.uk/depts/pfa/Jeremiah/index.htm>

stamping their feet simultaneously, while others were cautious in their interactions with the AI avatar. Standing just a few feet away from the black curtain upon which Jeremiah's animated head appears, those wary members of the audience observed how the AI avatar furrowed his brow as a sign of frustration towards the lack of physical stimuli on the stage. Subsequently, as the audience members paced up and down the stage, Jeremiah's eyes followed their track.

Judging from the reaction of the audience members in the video recordings, they seemed unsettled by the uncanny resemblance of the AI avatar's behaviour to that of human beings. Even Berland, the human actor who had spent hours rehearsing with Jeremiah, appeared to be perturbed by the AI avatar's uncanny resemblance to a human being. In a video captured during a rehearsal for the debut performance in London, Berland was seen rehearsing a scene with Jeremiah when she suddenly turned around and scurried off the stage. As she left the stage, her arms and shoulders were trembling, as though in shock. Even though Berland might have felt uncomfortable about the lifelike quality of Jeremiah's facial features and movement at the rehearsal, she did not display any sign of aversion towards the AI avatar during the debut performance in 2001. If it is indeed the case that a human actor who is so intimately connected to an autonomous performing machine can be unsettled by its resemblance to human beings, then to what extent might the audience members' encounter with Jeremiah in *Blue Bloodshot Flowers* be affected by the "uncanny valley" effect?

In an essay published in the journal, *Energy*, in 1970, Japanese robotics professor Masahiro Mori described the ways in which people reacted to robots that approximated the appearance and behaviour of human beings. His hypothesis was that an individual's affinity towards "a humanlike robot" would encounter a sudden "descent into eeriness" as the machine "approached, but failed to attain, a lifelike appearance" (Mori, MacDorman and Kageki 2012). Mori called this abrupt shift in an individual's feelings about a humanlike robot the "uncanny

valley”. Commenting on Mori’s concept of the “uncanny valley,” Karl F. MacDorman notes that Mori himself was convinced that a full-body android would augment the feeling of eeriness experienced by the human observer, as “[m]achines that appeared too lifelike would be unsettling or even frightening inasmuch as they resemble figures from nightmares or films about the living dead” (2005: 399). The connection of the “uncanny valley” effect to the spectre of death is pertinent to our discussion, for the greyish-blue skin tone of Jeremiah’s animated head more closely resembles an apparition than a living person. As Jeremiah’s animated head is suspended against the black curtain at the 291 Gallery in London, his bodiless existence foregrounds the existential finitude of human beings for whom death is an expected inevitability.

Masahiro Mori’s concept of the “uncanny valley” is useful in terms of describing the feeling of eeriness experienced by human beings whenever they encounter a robot that bears an uncanny resemblance to a real-life person. Jeremiah was not only an unfamiliar thing to the audience members; he also had a hidden attribute, which is the capacity to perform autonomously. However, Jeremiah’s performance in *Blue Bloodshot Flowers* does not proceed without a hitch. In fact, there are times at which his responses to the physical stimuli generated by Berland and the audience members are delayed or even chaotic. This incongruence between Jeremiah’s humanlike appearance and the mechanical quality of his reactions to external stimuli might prove to be unsettling for the audience members who interact with him. As MacDorman and Hiroshi Ishiguro explain in a 2006 article on humanlike robots, “the jerkiness of an android’s movements could be unsettling because it elicits a fear of losing bodily control” (2006: 313). The incongruence between Jeremiah’s humanlike appearance and his mechanical behaviour is likely to provoke an uncanny feeling in the audience members, who may be reminded of their physical vulnerabilities. Furthermore, the glitches in Jeremiah’s behaviour during the performance also reveal the technological essence of the computer system that facilitates his virtual existence in

Blue Bloodshot Flowers. By showing that Jeremiah's AI engine is susceptible to delays and errors, the performance alienates the audience members in the same way that the anti-theatrical techniques in Bertolt Brecht's "Epic Theatre" create a critical distance between the spectators and the dramatic action on the stage.

The *verfremdungseffekt* or "alienation effect" in Brechtian theatre seeks to prevent the audience from identifying with the emotions of the characters and the narrative of the performance as a whole (Willett 1964: 91). Through the use of disruptive devices such as placards, film projections, abrupt musical interludes, and choruses that offer critical commentary on the performance, the Brechtian "alienation effect" exposes the artificiality of the theatrical medium. Such anti-theatrical techniques are designed to compel the audience members to deliberate on the issues raised in the performance, and more generally, to reflect on the conventions of theatre practice. Similarly in *Blue Bloodshot Flowers*, the glitches in Jeremiah's behaviour point towards some of the operational problems associated with AI. The incongruence between Jeremiah's humanlike appearance and the mechanical quality of his oftentimes delayed responses to external stimuli is indicative of the limits of AI in replicating the nuances of human facial expression. However, by foregrounding these limits, the audience members are encouraged to think about the ways in which intelligent and autonomous machines like Jeremiah could affect the human condition. Even though Jeremiah is only capable of approximating, rather than fully attaining, the look and movement of the human face, the mismatch between his humanlike appearance and his mechanical behaviour might elicit a feeling of discomfort among the audience members. Yet this eerie feeling that the AI avatar is likely to evoke is not merely a symbolic reaction but a cognitive phenomenon that is grounded in the neurobiology of the human brain.

Recent research in cognitive neuroscience has demonstrated that the occurrence of the "uncanny valley" effect when human beings encounter an android stems from the incongruence

between the appearance and behaviour of the humanlike robot. In a 2011 experiment conducted by cognitive scientist Ayse Pinar Saygin and her colleagues in the field of robotics research, a group of human participants were shown three separate videos.³² The first video depicted a mechanical robot that has been stripped of its external covering, while the second one showed an android that approximates human appearance and movement. The third video featured a real-life human being. In the first video, the mechanical robot displayed “mechanical appearance and movement” (Saygin et. al. 2012: 413). But whereas the human being in the third video exhibited “biological appearance and movement,” the android’s “biological appearance” seemed out of place in relation to its mechanical movement (Saygin et. al. 2012: 413).

Human beings, Saygin and her colleagues explain, have long associated “human appearance with biological motion, and machines (such as robots) with mechanical motion” (2012: 420). In the video featuring the android, the researchers detected an increase in “prediction error” in terms of the correspondence between appearance and behaviour “as the brain negotiates an agent that appears human, but does not move biologically” (2012: 413). When the human observers perceive the look and movement of the android to be incongruent, neural activity in the parietal cortex is the greatest among all regions of the brain. Saygin and her colleagues believe that such a cognitive phenomenon might help to explain the sudden shift in feeling from affinity to disgust that characterizes the “uncanny valley” effect. However, the study did not consider how the apparent incongruence between the biological appearance and mechanical behaviour of a humanlike robot might affect the human being’s perception of his or her mortality and finitude vis-à-vis the humanlike antics of autonomous performing machines like Jeremiah.

³² Using functional magnetic resonance imaging (fMRI) technology, Saygin and her colleagues “explored the selectivity of the human action perception system (APS), [...] for the appearance and/or motion of the perceived agent [robot, android, or human]” (2012: 413). In the videos depicting the robot and the human, the “observed kinematics was congruent with what would be predicted from the appearance of the agent” (2012: 420). In the video with the android, the humanlike appearance of the perceived agent did not match its mechanical movements.

Even though the concept of the “uncanny valley” may help to explain why the audience members in *Blue Bloodshot Flowers* are likely to feel unsettled by the incongruence between Jeremiah’s humanlike appearance and the mechanical quality of his facial movements, we would do well to consider the ways in which the spectators’ anxiety about death and existential finitude influences their perception of autonomous performing machines. As evidenced by the archival videos from the 2001 performance, some audience members did register a certain degree of discomfort as they interacted with Jeremiah. This feeling of unease might have been triggered by the AI avatar’s ability to approximate, but not fully attain, the appearance and behaviour of human beings. Jeremiah is, after all, a machine equipped with the capacity to express emotional reactions towards external stimuli. Yet the question remains as to how the mismatch between the humanlike features of an autonomous performing machine like Jeremiah and the mechanical behaviour of those features might influence the audience members’ anxiety about death and the assumption that machines may soon supplant humans in all facets of life, from the factory floor to theatre performance.

As an autonomous performing machine, Jeremiah is designed to mimic the facial features and movements of the human face. From a dramaturgical perspective, the accuracy of Jeremiah’s mimicry matters less than its symbolic significance in the dramatic action, as the audience members attempt to understand the AI avatar’s identity in the performance. Some may regard him as the ghost of the departed lover to whom the human actor, Elodie Berland, alludes, while others may see him as the lovechild from Berland’s relationship with her long lost lover. Even though the dramatic narrative in *Blue Bloodshot Flowers* does not offer any indication regarding Jeremiah’s relationship with Berland, the AI avatar remains a significant feature in the intermedial performance, especially when the audience members get to physically interact with Jeremiah through such embodied actions as clapping, walking, and jumping. However, as

mentioned earlier, the interactions between Jeremiah and the audience members do not proceed in a seamless fashion all the time.

Looking at the archival videos of the performance, there were times at which the AI avatar took a few seconds to react to a particular physical stimulus performed by an audience member. At other times, the AI avatar appeared to be “confused” about the type of emotional response that should be delivered, an awkward situation that resulted in spontaneous laughter among the spectators. Perhaps the audience members were bemused by the AI avatar’s approximation of human behaviour and the inherent kinks in such a technological endeavour. But it could be argued that the lag in Jeremiah’s reaction to physical stimuli is reminiscent of a malfunctioning machine, an impression that could potentially remind the audience members of their own physical vulnerability and existential finitude. From a critical techno-dramaturgical perspective, the mismatch between Jeremiah’s humanlike facial features and the mechanical behaviour of those features in Broadhurst’s performance gestures towards the idea that human beings and machines share a common finitude. Despite their behavioural differences, both human and nonhuman entities are equally vulnerable to degeneration and destruction. At the same time, Jeremiah’s autonomy might also serve to augment the audience members’ fear of being supplanted by fully autonomous machines. This techno-anxious experience, I claim, is motivated by the human being’s innate fear of death, or what philosophers refer to as “existential dread”. In the following section, I will explore the ways in which the feeling of existential dread is responsible for conditioning the audience members’ experience of techno-anxiety.

4.4 Techno-Anxiety and Existential Dread

In his Pulitzer Prize-winning book, *The Denial of Death*, the cultural anthropologist Ernest Becker posits that all human cultural systems (society, religion, science, civilization) are

symbolic action systems within which humans perform acts of heroism in order to symbolically transcend their mortality. Becker's study builds upon the work of the nineteenth-century Danish existential philosopher Søren Kierkegaard, who grounds his analysis of the human condition in the Biblical myth of the "Fall of Man". The Judeo-Christian story of the "Fall of Man" describes how man emerged from his instinctual animal nature into self-consciousness. With this transformation came an awareness and terror of the human being's finitude. As Becker explains:

The fall into self-consciousness, the emergence from comfortable ignorance in nature, had one great possibility for man: it gave him dread, or anxiety. [...] Man's anxiety is a function of his sheer ambiguity and of his complete powerlessness to overcome that ambiguity, to be straightforwardly an animal or an angel. He cannot live heedless of his fate, nor can he take sure control over that fate and triumph over it by being outside the human condition. (1974: 69).

Because the inevitability of death is intrinsic to the human condition, hero-systems provide human beings with a sense of self worth and "cosmic specialness," which allows them to deny their mortality (Becker 1974: 5). But while hero-systems can take the form of extraordinary actions (jumping in front of an oncoming train to rescue a baby who is stuck on the tracks, for example) or the construction of colossal edifices such as Gothic cathedrals or statues of former rulers, Becker contends that these systems must elicit "[t]he hope and belief that the things that man creates in society are of lasting worth and meaning, that they outlive or outshine death and decay" (1974: 5). Despite the inevitability of death, human beings remain hopeful that they can transcend their mortality by doing or making things (self-sacrificing acts, technological inventions, and even books) that society would value and remember. However, as Becker reminds us, accompanying this human capacity to symbolically overcome the existential limits of death through words, deeds, and objects is the human being's "consciousness of the terror of the

world and his own death and decay” (1974: 69). “The fall into self-consciousness,” as Becker characterizes it, “the emergence from comfortable ignorance in nature, had one great penalty for man: it gave him *dread*, or anxiety” (1974: 69). As a consequence of this fall into self-consciousness, human beings are forced to live in anxiety about their existential finitude in the world, as they contend with the terrifying knowledge that death is inevitable despite their best efforts to overcome it.

In attempting to guard against the existential anxiety about death, the human being develops what Becker calls a “character armour” that endows him or her with a sense of individuality and purpose in life (1974: 70). Human beings are valued, and often times judged, on the basis of the character that they project to the world. However, Becker recognizes that the impulse to build one’s “character armour” is informed by the desire to deny the “creatureliness” of the human animal and the “anxiety that results from the human paradox that man is an animal who is conscious of his animal limitation” (1974: 87). For the audience members in *Blue Bloodshot Flowers*, the artificiality of Jeremiah’s computer-generated emotional responses to external stimuli may remind them of the fragility of their own character. The implication here seems to be the following: since it is possible to program the emotions of an AI avatar in a way that approximates the emotional behaviour of humans, perhaps the character that endows the human being with a sense of individuality and meaning (the impression that one is a loving person, for example) is nothing more than the result of a cultivating regime known as social conditioning. Just as Jeremiah’s humanlike character and intelligent behaviour in the performance operates as a veneer that obscures his true mechanical condition, what lurks beneath the “character armour” of the human being is a vulnerable body that cannot escape its existential finitude. But whereas Jeremiah, as an AI avatar, has not been endowed with the awareness of his condition in the world, the human being has been dealt an existential card that imbues his or her

life with a sense of anxiety about mortality and death. The human animal, I would contend, cannot experience the feeling of techno-anxiety over the purportedly destructive force of technology without being anxious about his or her existential finitude. Coming face to face with a computer-generated entity that displays emotions through its facial expressions intensifies the existential dread that undergirds the audience members' techno-anxiety about the perceived threat that autonomous performing machines pose to the privileged status of human beings in the world.

Becker notes that the human being as "*self-conscious animal*" is privy to the knowledge that "one is food for worms" upon death (1974: 87). Along with this awareness comes a terrifying revelation. The "terror," as Becker aptly elucidates, is "to have emerged from nothing, to have a name, consciousness of self, deep inner feelings, an excruciating inner yearning for life and self-expression – and with all this yet to die" (1974: 87). How dreadful it must be to spend one's entire life building up a respectable character and etching out a meaningful existence through the fashioning of words, deeds, and objects only to be subjected to the finality of death. Drawing upon Kierkegaard's philosophy of *dread*, or what contemporary philosophers refer to as "anxiety," Becker contends that it is only by facing up to dread/anxiety and recognizing the truth of one's situation as a mortal being for whom death is inevitable that human beings are able to "open a new possibility" for themselves (1974: 88). It is important to point out that Kierkegaard distinguishes between dread (anxiety) and fear, the latter of which points to something definite. Whereas fear is projected towards a specific thing, such as the fear of sharks, Kierkegaard defines dread as an existential experience that simultaneously reveals the terrifying finitude and the creative potential of the human condition. Conceived as a generative concept, "dread," in Kierkegaardian terms, "is freedom's reality as possibility for possibility" (1957: 38). Invoking the image of a person standing at the edge of a cliff, he compares the experience of dread to the

“dizziness of freedom” that occurs when the human being confronts a multitude of possibilities while contemplating the finitude of his or her life. According to Kierkegaard:

Dread may be compared with dizziness. He whose eye happens to look down the yawning abyss becomes dizzy. But what is the reason for this? It is just as much in his own eye as in the abyss, for suppose he had not looked down. Hence, anxiety is the dizziness of freedom, which emerges when the spirit wants to posit the synthesis and freedom looks down into its own possibility, laying hold of finiteness to support itself. (1957: 54-5)

Standing at the edge of the precipice, the human being who experiences dread but acknowledges his or her finite existence is afforded the freedom to submit to a myriad of possibilities, each of which contains a unique set of consequences. Choosing to jump off the cliff would result in a situation that drastically differs from the decision to take a step back from the edge and return to safety, which has its own consequences. For this reason, Kierkegaard considers dread to be “a sympathetic antipathy and an antipathetic sympathy” (1957: 38). In other words, dread is at once a feeling of affinity and repulsion.

Thinking back to the archival videos of *Blue Bloodshot Flowers*, particularly the scenes in which Berland (the human actor) and the audience members appeared to be unsettled by Jeremiah’s humanlike demeanour, it seems as though the human participants in the performance were simultaneously attracted to, and repulsed by, the AI avatar’s uncanny resemblance to a human being. By stepping forward to interact with an unfamiliar entity like Jeremiah, Berland’s and the audience members’ ambivalence towards the appearance and behaviour of the AI avatar instantiates Kierkegaard’s theorization of existential dread as a concurrent feeling of affinity and repulsion. But Jeremiah, I claim, is not the object that educes the feeling of existential dread from the human participants in the performance. Rather, it is what the AI avatar reminds them of – that

is, the inevitability of death – that heightens their sense of death anxiety. I mentioned earlier that the fascination that the audience members felt towards Jeremiah in the first, scripted half of the performance was met with apprehension and anxiety in the second, interactive portion of the show. Having the chance to physically interact with Jeremiah offered the audience members a first-hand experience of the apparently intelligent comportment of the autonomous performing machine. But apart from Jeremiah’s uncanny resemblance to the appearance and antics of a human being, the audience members’ experiential transition from affinity to discomfort in response to the AI avatar was also reinforced by the allusions to death in Philip Stainer’s narrative for the intermedial performance.

Unlike most dramatic performances, neither Jeremiah nor Berland delivered the narrative in his or her own voice. Instead, a voiceover was employed throughout the first, scripted half of the performance. As the voice in the voiceover was female, the assumption was that the story told by the disembodied narrator in the recording belonged to Berland, who was physically present on the stage. But despite the ambiguity surrounding Berland’s relationship with Jeremiah, the AI avatar, the allusion to death in Stainer’s narrative was striking. The story began with the female narrator in the voiceover relating an encounter with her long lost lover: “He marked me out, and mapped my surface. His hands moving over my skin, fingertips rough like tiny moving cancers stretching out, trying to leap his broken-down frame into mine” (qtd. in Broadhurst 2004: 49). We can see in these opening lines how the sexual imagery was punctuated by a metaphor of death that compared the movement of the lover’s fingertips to the spread of cancer. Further on in the narrative, the existential anxiety over death became even more pronounced. “I’m sorry I’ve lost you,” said the narrator, even though it was not clear who actually lost whom. But riding on the theme of loss, the narrator continued by explaining that her “metaphor was cancer as a symptom of a fear of death, that simply hastens it, hastens death that is, the result of a paranoid body” (qtd.

in Broadhurst 2004: 49). The invocation of this metaphorical image of a death-fearing, paranoid body ravaged by cancer in Stainer's narrative helped to condition the existential tenor in the remaining parts of *Blue Bloodshot Flowers*. The first, scripted half of the performance reminded the audience members of death and the existential finitude of the body. Having heard the allusion to death in the voiceover while observing the interactions between Berland's physical body and Jeremiah's animated head on the stage, the audience members encountered the second, interactive half of the performance with the image of a "paranoid body" weighing on their minds.

With the spectre of existential finitude and what Becker calls the "terror" of the human condition looming in the background, the audience members entered the stage in the second half of the performance to explore Jeremiah's capabilities. As part of Broadhurst's critical technodramaturgy, the audience members were required to interact with Jeremiah through the performance of embodied actions, ranging from a simple wave of the hand to an elaborate shuffling of the legs aimed at confusing the AI avatar. Finding themselves on the stage as performers whose embodied labour served to elicit a reaction from the AI avatar, the audience members became self-conscious of the capabilities and limits of their bodies. But as Broadhurst reveals, "[o]ne of the most interesting aspects of the Jeremiah Project is how much the performer/spectator projects onto the avatar" (2004: 50). With the cloud of existential dread hanging over the interactive zone on the stage, the audience members might be inclined to project their expectations onto Jeremiah as a defence mechanism by which to assuage their anxiety about the fragility and finitude of the human body.

Building on Ernest Becker's concept of "death denial," the American psychologists Sheldon Solomon, Jeff Greenberg, and Tom Pyszczynski have conducted numerous scientific studies to investigate the death-denying behaviour of human beings in response to instances in which thoughts of mortality and existential finitude are rendered salient in the consciousness of

the human subject. As the founding researchers of the field of *Terror Management Studies*, Solomon, Greenberg, and Pyszczynski developed what they call the “mortality salience hypothesis,” which holds that “if a psychological structure provides protection against the potential terror engendered by knowledge of mortality, then bringing thoughts of mortality into consciousness should increase concern for maintaining that structure” (1998: 25). This impetus to maintain a protective psychological structure might also apply to the audience members in *Blue Bloodshot Flowers*. In attempting to assuage the feeling of techno-anxiety and existential dread that Jeremiah evokes in them, the audience members may endeavour to regard him as an innocuous child or a benign family pet. Such a reaction would appear to be consistent with what Solomon, Greenberg, and Pyszczynski refer to as “*worldview defense*,” an effect whereby the prevalence of mortality salience produces “more positive responses to similar others and more negative responses to those who are different” (1998: 29). It is likely that most of the audience members in Broadhurst’s performance would consider Jeremiah to be an entity that is ontologically different from their biologically human selves. However, by treating Jeremiah as a child or a family pet, the audience members can play on this sense of familiarity with a strange and uncanny virtual entity. In turn, they get to reaffirm their ontological status as human beings, an exclusionary gesture that sets them apart from the autonomous performing machine.

In light of Jeremiah’s display of autonomy and intelligent behaviour in the 2001 production of *Blue Bloodshot Flowers*, the audience members needed to find a way to assuage their anxiety about the AI avatar’s capacity to remind them of their mortality. One strategy they chose was to re-assert human control over the autonomous performing machine by rendering it familiar and determinable to the human observer. According to Broadhurst:

Most people when they first see Jeremiah, find him ‘spooky.’ Then, after the initial contact leads to a degree of familiarity, people tend to treat him as they

would a small child or a family pet. They usually try to make him smile and generally to please him. For instance, his face demonstrates sadness when he is left alone, so much so that many people find it difficult to walk away. (2004: 51)

The “degree of familiarity” that Broadhurst mentions in the above excerpt alludes to the audience members’ attempt at recalibrating their expectations of a strange entity like Jeremiah. In addition to his uncanny resemblance to a real-life human being, Jeremiah also expresses human emotions. Confronted by an unfamiliar machine that exhibits autonomy and humanlike intelligence, the audience members at the 2001 production were inclined to perceive the AI avatar from a perspective with which they were better acquainted.

As the philosopher of technology Hubert Dreyfus elucidates, our being in the world is a constant struggle to overcome the instability of experience (2009: 55). Human perception, Dreyfus goes on to explain, “is motivated by the indeterminacy of experience and our perceptual skills serve to make determinable objects sufficiently determinate for us to get an optimal grip on them” (2009: 55). Getting an “optimal grip” on an unfamiliar entity like Jeremiah would require the audience members to establish a sense of control over the behaviour of the AI avatar. As such, I submit that the familiarity that occurs during the audience members’ encounter with the Jeremiah has little to do with respecting the AI avatar for what it is – a nonhuman entity that operates autonomously. Instead, their familiarity with Jeremiah is motivated by the impulse to interpret the existence of the autonomous performing machine on human terms.

This anthropocentric treatment of Jeremiah’s existence in *Blue Bloodshot Flowers* is apparent in Broadhurst’s characterization of the audience members’ embodied activity in the interactive part of the performance. Her description of the audience members’ attempt to “please” the AI avatar comes across as a patronizing reproach against a petulant machine that demands constant human attention. The assumption here seems to be that treating Jeremiah as a child or a

family pet would allow the audience members to assume the position of an adult whose responsibility it is to entertain the human and nonhuman entities under their charge. As a result, it is difficult for the audience members to walk away when Jeremiah displays a look of sadness on his virtual face, for it would appear to be an irresponsible gesture. Instead, by attempting to make Jeremiah smile, the audience members are able to attain instant gratification for their embodied labour while maintaining their dignity as caring adults. Such is the anthropocentric quality of the coping mechanism employed by the audience members in order to assuage the existential dread that Jeremiah's virtual presence evokes in them. By projecting their expectations onto Jeremiah, the audience members can treat him as a benign toy rather than an autonomous performing machine that is capable of exhibiting intelligent behaviour.

But perhaps we might be demanding too much from the audience members, some of whom may not even be familiar with such intellectual concerns as the prevalence of anthropocentrism in human-machine relations as well as the cultural implications of what Steven E. Jones describes as the fear of "technology as an abstract force" (2006: 20). Yet given the anthropocentric impetus to reassert human control over a nonhuman entity in *Blue Bloodshot Flowers*, particularly in response to the techno-anxiety and existential dread that Jeremiah evokes in the audience members, it would be interesting to examine how an intermedial performance featuring robots as the *only* performers on the stage affects the spectators' perception of human-machine interaction. To this end, the next section will examine the ways in which the autonomous behaviour of the dancing robots in French-Canadian artist Louis-Philippe Demers' 2010 production of *Tiller Girls* exemplify what N. Katherine Hayles, in her discussion of androids, calls the "boundary dispute" that characterizes the robots' "struggle to achieve autopoietic status" (1999: 161). Subsequently, in the final section of this chapter, I will look at how the robots' reinterpretation of a high-kicking dance routine made famous by the human

dancers of the original Tiller Girls unfolds a critical potential for deliberating on the human spectators' anxiety about the autonomy of embodied machine actors on the intermedial stage.

4.5 Autopoietic Machines: Dancing Robots in Louis-Philippe Demers' *Tiller Girls*

Who were the original Tiller Girls? Founded in 1890 by industrialist John Tiller in the English city of Manchester,³³ the British Tiller Girls devised their precision high-kicking routine in 1910 when Tiller instructed his female dancers to link their arms around each other's waist in order to ensure that their movements were synchronized (Burt 1998: 88). Performing as a group, the women wore the same outfit as they delivered their high-kicks in conjunction with the musical accompaniment provided by a live orchestra. What was significant about the Tiller Girls was that the members of the troupe were not selected on the basis of their skills and proficiency in dance. Instead, women of similar height and physique were chosen, as Tiller sought to make his dancers behave like a military marching contingent rather than a group of virtuosic performers. In the end, such a precise and coordinated approach to dance resulted in the loss of individuality among the dancers in the troupe.

At the 2010 edition of the Dutch arts festival "De Wereld van Witter de With" in Rotterdam, twelve autonomous robots emerged as precision line dancers in a theatre studio crammed with curious spectators. Wearing nothing except their metallic "skin" and coloured lights, these robotic dancers performed a sequence of dance movements that reinterpreted the precision high-kicking routine of the world-renowned Tiller Girls dance troupe in Britain. But unlike their human counterparts whose synchronized leg movements became the highlight of their revues, the dancing robots in French-Canadian artist Louis-Philippe Demers' version of the

³³ Kara Reilly notes that the founder of the Tiller Girls dance troupe, John Tiller, had served as a Sergeant in the British Army before becoming a businessman and subsequently, a dance director. This fact may explain Tiller's fascination with precision movements, as is typical in the foot drill practices of the military.

Tiller Girls' dance routine did not perform high-kicks. In fact, Demers' embodied robots did not even imitate the appearance and physical features of real-life human beings. Constructed with the help of Raja Dravid and Max Lungarella from the Swiss robotics company Dynamic Devices, the dancing robots in *Tiller Girls* were developed for the purpose of studying the gaits of artificial intelligence (AI) machines that move autonomously through a particular environment. Each robotic dancer was equipped with a pair of swinging shoulders affixed to a vertical axis that acted as its torso. As for the base of the robot, horizontal branches with downward-pointing tips stretched out in four directions from the vertical axis like the legs of a coat stand. Whenever the robots were in motion, the pointed tips on the horizontal branches would lift off the ground in alternating order, so as to either propel the machines forward or allow them to fall on their sides.

One feature that stood out at the 2010 performance of *Tiller Girls* was that the dancing robots were designed without a head. Such an omission was not only obvious but also intentional. Whereas Jeremiah, the AI avatar in Broadhurst's *Blue Bloodshot Flowers* existed as a humanlike animated head without a body, Demers' robotic dancers had T-shaped metallic bodies that did not approximate the physical form and behaviour of the human being. The robots appeared as machines and performed on their own mechanical terms. Yet they were capable of displaying a greater level of autonomy than the human dancers with the original Tiller Girls. Rather than programming the robots' behaviour beforehand, Demers outfitted each machine with motion sensors, an electronic circuit board that processed sensory information, and a battery pack. As a result, the robots are relatively self-sufficient in terms of their ability to move around the stage without the intervention of a human agent. Moving through the stage environment, the machines were free to respond to the surrounding stimuli by shaking their mechanical torsos from side to side and swinging their shoulders up and down. The decision to endow the robots with the

capacity to sense and interact with their environment without imposing a prescriptive model on their behaviour was in keeping with Demers' preference for a "bottom-up" approach to AI.

In contrast to the "top-down" approach to AI, whereby the robot's computer system is preloaded with a symbolic representation of the space in which it operates, the "bottom-up" approach to AI allows the robot to "learn" about its environment by coming into contact with the animate and inanimate objects around it. Even though the actions that Demers' robots displayed as they interacted with the stage environment may appear rudimentary to the human spectator (the pointed tips at the base of the robots resulted in a gait that resembled the movement of penguins), each robot was able to build on these basic actions to generate elaborate dance movements. Instead of conforming to the uniformity of precision line dancing, as practised by the original Tiller Girls, there were instances in Demers' *Tiller Girls* where a few robotic dancers would fall out of formation and perform unique dance sequences that departed from the actions of the other robots. In this way, Demers' dancing robots seem to exemplify what N. Katherine Hayles – citing Maturana and Varela – refers to as *autopoietic* (or "self-making") machines. I will attend to the autopoietic quality of autonomous dancing robots later in this section. For now, I want to turn our attention to the ways in which Demers' *Tiller Girls* differs in style and artistic purpose from the high-kicking dance routine of the original Tiller Girls of Britain.

During the 2010 production of *Tiller Girls* in Rotterdam, German composer Philip Schulze and media artist Armin Purkrabek joined Demers in crafting a medley of musical tracks, a video montage, and a lighting sequence that corresponded in real-time to the dance movements performed by the robots. Taken as a whole, their music, video, and lighting design complemented the autonomous performances of the twelve robotic dancers. In contrast to the highly disciplined and mechanical performance style of the original Tiller Girls, whereby the human dancers received instructions from a choreographer on how they are expected to act throughout the show,

the behaviour of Demers' robots was unpredictable. Instead of having the robots receive cues from a human choreographer or stage manager, the human members on Demers' team based their music, lighting, and video design on the autonomous movements that the robots displayed, both individually and as a collective. But whereas the human dancers of the original Tiller Girls wore elaborate headdresses with feathers and plumes to attract the audience members' attention during their shows, the robotic dancers in Demers' version of the Tiller Girls' dance routine presented themselves to the spectators as autonomous machines that comprised a few metallic parts and coloured lights. Yet these dancing robots displayed a far greater degree of autonomy and virtuosity than the human dancers of the original Tiller Girls who were required to subsume their individuality and creativity under the synchronized behaviour of the entire dance troupe.

As the theatre historian Kara Reilly observes, “[t]he mass spectacle of the chorus line of between eight and sixteen identically dressed dancers with uniform bodies kicking their perfectly synchronized legs up in the air erased the audience’s visual awareness of each individual dancer” (2013: 117). From the perspective of the audience members, the members of the Tiller Girls existed only as a group, as the dancers “morphed” into what was perceptibly “an uncanny mass object moving in perfect unison” (2013: 117). As Reilly explains, this mass object made up of human beings moving in precise unison seemed uncanny due to its resemblance to the industrial machines of the early-twentieth century (2013: 118). Watching the Tiller Girls in 1927, the German critic Siegfried Kracauer discerned a connection between the high-kicking routine of the dance troupe and the human labour in industrial factories. Referring to the line of female dancers as “the mass ornament,” Kracauer deduced that “the hands in the factory [corresponded] to the legs of the Tiller Girls” (1995: 78). As such, the spectacle of the Tiller Girls as “the mass ornament” provided what Kara Reilly calls “the perfect analogy for industrialization,” as the dancers became “cogs, pistons, moving parts in the larger aesthetic machinery of the dance”

(2013: 118). By subsuming the identities and idiosyncrasies of the dancers under the totalizing regime of precision dancing, the Tiller Girls appeared as a mechanical object on the stage.

While the original Tiller Girls mimicked the operation of the industrial machine through their synchronized high-kicking line dance, the behaviour of the robots in Demers' 2010 production of *Tiller Girls* resembled the expressive movements of break dancers as they trotted out to the stage with their mechanical shoulders swinging like a see-saw. There seems to be an inversion between the expected behaviour of the human dancers with the British Tiller Girls and that of the dancing robots in Demers' performance, as humans start to behave like machines and machines begin to act like humans. It is worth noting that the word "robot," with which most of us are now acquainted, originates from the theatre. In her study of automata and mimesis in theatre history, Kara Reilly notes that it was the Czech playwright Karel Čapek's 1920 science-fiction drama, *R.U.R. (Rossum's Universal Robots)*, that first "dreamed up a new category of automaton workers called Robots" (2011: 148). The word "robot," as Reilly informs us, stems from the Czech *robot*, which denotes "drudgery" or "servitude" (2011: 148). Čapek's futuristic play is set on a remote island where robots have taken the place of human beings in all domains of work. As a result, the humans are afforded more time for rest and recreation. However, a special group of robots have been endowed with the capacity to experience emotions, which thereby allows them to recognize their servitude to the human inhabitants of the island. In an effort to free themselves and their fellow robots from human control, the special group of robots set out on a mission to eliminate all human beings by forming a robots' union.

According to Reilly, Čapek was deeply affected by the death and carnage inflicted by the use of industrial weapons (tanks, machine guns, high explosive ordnance, and zeppelins, to name a few) during the First World War (2011: 149). Having witnessed the lethal consequences of technology during the war, Čapek developed a dramatic narrative that attempted to warn his

readers about the dangers associated with the development of automated machines. The robots' plot to destroy all human beings represents what Reilly describes as the "anxious scepticism about Industrialization," which is encapsulated by "the sincere fear that human beings would become slaves to the machines they had created" (2011: 149). Reilly believes that it is this sense of "anxious scepticism" about the industrial processes of the early-twentieth century that sets robots apart from automata. "Automata," she goes on to explain, "are unique, hand-created entertainers, whereas, Robots are mass-produced workers" (2011: 150). The MIT roboticist Rodney A. Brooks posits that humans tend to be afraid of automata, as these seemingly autonomous machines present "an 'irrational' threat to humans, calling into question their identity, sexuality (the basis of creation?), and powers of domination" (2002: 13). Turning to the history of automata and performance, Brooks draws attention to such eighteenth century European builders of automata as the father and son duo Pierre and Henri Louis Jacquet-Droz, who developed a set of artificial female organ players that "simulated breathing and gaze direction, looking at the audience, her hands, and the music" (2002: 15). But while these musical automata are capable of expressing humanlike behaviour, they do not necessarily possess the same level of autonomy as their robotic counterparts.

Writing on the degree of self-direction that machines manifest, the American physicist Sidney Perkowitz points out that although an automaton may exhibit spontaneous movements, it does not produce these movements by itself (2004: 4). The intervention of a human agent is required in order to assign specific behaviours to an automaton. "A robot," as Perkowitz elucidates, "is an autonomous or semiautonomous machine made to function like a living entity" (2004: 4). While some robots (such as Geminoid DK, the android modelled after the Danish professor, Henrik Scharfe) do appear as humanoids, Perkowitz notes that "most contemporary robots take nonhuman shapes that are useful for their particular applications" (2004: 4).

Detracting from the humanlike features of most historical automata that performed on the theatrical stage, Demers' dancing robots at the 2010 production of *Tiller Girls* were not designed to look like human beings. Apart from taking a nonhuman form, the robots also moved in a mechanical fashion that corresponded with its mechanical appearance.

The congruence between the look and behaviour of Demers' robots stands in contrast to the apparent mismatch in *Blue Bloodshot Flowers* between Jeremiah's humanlike appearance and the lag in his facial movements, which the audience members found to be inconsistent with typical human behaviour. Indeed, the robots in *Tiller Girls* were autonomous dancing machines. Equipped with motion sensors on their metallic bodies, Demers' robots could perform a variety of dance movements (by falling to the side and getting up again, for instance) without the intervention of a human agent. Furthermore, the sensors allowed the robots to interact with the stage environment and to alter their movements in relation to each other's presence in that space. But while Brooks believes that the spontaneous movements of automata can threaten the identity, sexuality, and dominating power of human beings, the autonomous behaviour of Demers' robots raises important questions about what N. Katherine Hayles describes as the "boundary dispute" that conditions the human being's reluctance to recognize the autopoietic status of nonhuman robotic machines.

Referring to the plight of the androids in Philip K. Dick's *Do Androids Dream of Electric Sheep?*,³⁴ Hayles discerns a connection between Dick's depiction of the politics of android-human interactions and Humberto Maturana and Francisco Varela's theorization of *autopoiesis*. According to Hayles, Maturana and Varela's analysis of the political dimensions of autopoietic theory purports that "power struggles" in society "often take the form of an autopoietic system

³⁴ Dick's novel, in which the human protagonist Rick Deckard pursues a mission to hunt down and destroy six renegade androids, was adapted into the 1982 science fiction movie, *Blade Runner*. Dick's story, in both its novelistic and filmic renderings, questions the essential qualities that set androids apart from human beings.

forcing another system to become allopoietic, so that the weaker system is made to serve the goals of the stronger rather than pursuing its own systemic unity” (1999: 160). The term *allopoietic* is the adjectival form of *allopoiesis*, with “allo” meaning “other” and “poiesis” referring to “making” or “bringing forth”. As Hayles explains, “autopoietic unities have as their only goal the continuing production of their autopoiesis,” or “self-making,” whereas “allopoietic unities have as their goal something other than producing their organization” (1999: 141). In other words, the operation of an allopoietic system is subservient to the goals of an autopoietic system.

Hayles observes that in the case of the androids in Dick’s novel, their leader, Roy Baty, recognizes that he and his fellow androids “have been denied the status of the living and consequently forced to serve as slaves rather than function as the autopoietic systems they are capable of becoming” (1999: 161). This reference to the human being’s denial of the androids’ autopoietic status in Dick’s story is instructive, as it foregrounds the “boundary dispute” that pervades the contentious relationship between humans and androids who are capable of defining their own goals and sustaining themselves. “The struggle to achieve autopoietic status,” Hayles posits, “can be understood as a boundary dispute in which one tries to claim the privileged “outside” position of an entity that defines its own goals while forcing one’s opponent to take the “inside” position of an allopoietic component incorporated into a larger system” (1999: 161). The human beings in Dick’s novel would rather treat the androids as a subservient entity than to recognize their autopoietic status as self-making and self-sustaining machines. Even though the robots in Demers’ *Tiller Girls* do not possess the humanlike appearance that the androids in Dick’s novel do, a similar tension between humans and autopoietic machines exists in the performance, as the audience members remain sceptical about the autopoietic quality of the robots’ dance movements on the stage.

Looking at the dancing robots from a distance, it is hard for the audience members to get a sense of how these machines operate, particularly in terms of their ability to enact a variety of dance movements. At the 2010 production of *Tiller Girls* in Rotterdam, some audience members assumed that the robots' behaviour have been pre-programmed, while others thought that an unseen human agent was responsible for manipulating the movements of the machines during the show. However, the asynchronous dance movements that Demers' robots displayed undermined the audience members' assumption that the machines operate strictly in the service of human goals. As opposed to the rigid uniformity of the high-kicking routine performed by the original *Tiller Girls*, Demers' robots moved in a chaotic fashion throughout the stage. Whereas the human dancers in the *Tiller Girls* dance troupe behaved like machines, Demers' robots were free to perform actions that corresponded to their sensory awareness of the surrounding environment.

Operating as autonomous systems, the motion sensors and the processing system on the robots' metallic torsos are in constant communication with one another, sending signals back and forth in order to mobilize the process of self-making that culminates in the display of random dance movements. In defining their own goals, the autonomy of the dancing robots is contingent on the interactive processes that occur between the components that set the machines in motion. It is in this way that Demers' robotic dancers operate as autopoietic machines. During the 2010 production of *Tiller Girls*, a video of the original *Tiller Girls* performing their high-kicking precision dance was projected behind the dancing robots. As the robotic dancers traversed the full extent of the stage, the audience members were confronted with a contradictory sight. In the video, human dancers were seen acting like machines through precision line dancing, while on the stage, machines expressed their creativity through various dance movements. I contend that this reversal of roles between humans and machines in *Tiller Girls* articulates the critical potential in Demers' techno-dramaturgy.

Setting the chaotic expressivity of the robots' dance movements in direct contrast to the enforced uniformity of the original Tiller Girls' high-kicking routine, Demers appears to be taunting the audience members with the call to reflect on the autonomy of machines in robotic performance and the standardization of human behaviour under the machinery of bodily discipline. However, despite the self-making autonomy of the robotic dancers on the stage, the audience members might still be tempted to deny them their status as autopoietic machines by electing to interpret the robots' autonomous behaviour in the show as the result of *unseen* human control. Maturana and Varela define the organization of an autopoietic machine as a network of interactive processes that produces the components that constitute the machine as a unity of productive components (1980: 79). In order to function as an autopoietic system, "an autopoietic machine continuously generates and specifies its own organization through its operation as a system of production of its own components" (1980: 79). What this means is that an autopoietic machine is not defined by the existence of its components alone but by the self-generating network of interactive processes that produces these components and maintains the boundary within which the system is reproduced as an organizational unity.

Demers' dancing robots are considered autopoietic machines because of their capacity to generate the interactive processes between the system's components as well as reproduce the boundary in which the system operates as an autonomous performing entity. Indeed, the robots are at once the machinery and the product of their operations. Rather than conforming to any preconceived goal set by Demers, the robotic dancers in *Tiller Girls* generate their dance movements independently. Motion sensors on the robots pick up sensory data from the stage environment and relay them to the electronic circuit board for processing. Subsequently, the circuit board transmits electrical signals along a stream of wires to the robots' metallic shoulders and torso, thus setting these mechanical parts in motion. The entire system is powered by a

battery pack that is fitted at the base of each robot. Taken together, this network of interactive processes between the motion sensors, the electronic circuit board, the metallic shoulders and torso, and the battery pack allows Demers' robots to operate autonomously as they perform a combination of synchronized and chaotic dance movements on the stage.

In their capacity as autopoietic machines in the 2010 production of *Tiller Girls*, the dancing robots are able to generate and maintain their operational boundaries throughout the performance without the intervention of human agents. "Autopoietic machines," as Maturana and Varela elucidate, "are unities because [...] their operations specify their own boundaries in the process of self-production" (1980: 81). In other words, machines are autopoietic insofar as they are capable of delineating the limits of their operations on their own rather than allowing an external agent to define those limits for them. As for allopoietic machines, however, Maturana and Varela note that the operational "boundaries are defined by the observer, who by specifying its input and output surfaces, specifies what pertains to it in its operations" (1980: 81). The dancing robots in *Tiller Girls* do not imitate the appearance and behaviour of human beings. Instead, they maintain their operational identity as autonomous machines performing mechanical movements. However, the audience members can, by interpreting the behaviour of Demers' robotic dancers on human terms, turn the robots into allopoietic machines that serve the goals of the human observers. In this case, the robots become the objects on which the audience members project their techno-anxiety about robotic automation. I claim that this experience of techno-anxiety about robots behaving autonomously is informed by what the Australian performance scholar Jane Goodall terms "transferred agency". Alluding to the mechanical dance routine of the original *Tiller Girls*, Goodall contends that the human being's anxiety about the loss of agency amid the manifestation of automatic behaviour in human actors is symptomatic of a broader cultural anxiety about automatism and what she calls "the human-machine confusion". Drawing

on Goodall's concept of "transferred agency," the following section will explore the ways in which the autonomous behaviour of the dancing robots in Demers' *Tiller Girls* structures the audience members' perception of automatism in intermedial performance and their fear of losing human agency to autonomous machines.

4.6 Transferred Agency and the Perception of Automatism

When John Tiller instructed the dancers with the original Tiller Girls to suspend their individuality and creativity in order to perform as a disciplined unit of dancers, the audience members in early-twentieth-century Britain witnessed how human actors could express automatic behaviour in almost the same fashion as the monotonous whirring of machines in industrial factories. Like the numerous factory workers who attended to the machines of the industrial complex as "cogs" in the wheel of production, it seemed as though the dancers with the Tiller Girls had lost their agency as individual human beings to the machinery of Tiller's standardizing regime. "Agency," as Jane Goodall describes it, "is an anxious topic," particularly when the "automata and calculating machines" of the late-nineteenth and early-twentieth centuries "imitated human coordination in ways that suggested the presence of intelligence and volition" (1997: 441). Commenting on the fear of automatism and the perceived loss of human agency in the industrial era of the early-twentieth-century, Goodall observes that "[a]s the automatic machine became increasingly suggestive of agency, any appearance of the automatic in human behaviour conversely seemed to suggest loss of agency" (1997: 441). But the human anxiety pertaining to agency and the potential for losing it is no less significant in our present age of advanced computing and digital media.

In technologically developed societies across the world, autonomous robots have started to replace human workers in factories, food production facilities, and such service industries as

banking and retail. Apart from civilian industries, the United States military is planning to develop infantry robots that operate autonomously,³⁵ a prospect that has “inspired excitement, speculation and anxiety about Terminator-style robots on the future battlefield” (Tucker 2014: para.1). While the robotizing of human labour might lead to anxious speculations about the effects of automatism on the status of human beings in contemporary society, the incorporation of robotic actors into theatre performance affords the possibility of exploring the impact of automatism on the intermedial stage. Just as the high-kicking precision line dance of the original Tiller Girls heightened anxieties about the loss of human agency and the manifestation of automatic behaviour among the human dancers in the troupe, the twelve autonomous dancing robots in Demers’ 2010 production of *Tiller Girls* in Rotterdam had the potential to evoke a feeling of techno-anxiety among the audience members about the supposed “transfer of agency” from human actors to autonomous performing machines.

As compared to the puppets, animated figurines, and other automata that perform in accordance with the rules set by their human designers, the human actors in theatre performance are less likely to be perceived as lacking agency. Goodall explains that automatic behaviour in performance is often “associated with enchanted beings (swan maidens, animated dolls), with puppetry and with “wooden” actors who can express nothing more than careful programming by their trainers” (1997: 441-2). However, unlike puppets and animated dolls, the “wooden” actors that Goodall mentions are not mechanical devices. Instead, they are human actors who faithfully carry out the director’s instructions without embellishing their performances through additional vocal and gestural articulations. In this way, the “wooden” actors are deprived of the agency to determine their behaviour in performance, as they subsume their idiosyncrasies under the

³⁵ While some observers may be anxious about the prospect of robotic soldiers swarming cities in the near future, defence writer Patrick Tucker believes that speculations about the capabilities of these “battle bots” do not appear to match the present reality on the ground.

aesthetic regime of the theatre director. Yet Goodall believes that human performers are capable of “playing across the borderline between the agentic and the automatic” (1997: 442). This tension between the agentic and the automatic is all the more salient in performances where every performer has to negotiate between the capacity to harness his or her personal agency and the compulsion to passively accede to the director’s dramaturgical demands.

In the case of the original Tiller Girls, the dancers had to refrain from performing their own interpretation of the high-kicking dance routine, so as to maintain the precision and unity of their leg movements. At the same time, it was possible for any one of the dancers to deviate from the prescribed choreography and fashion their own dance movements, even though such an act would probably lead to one’s departure from the troupe. Nevertheless, amid the expression of automatic behaviour among the human dancers with the original Tiller Girls, Goodall surmises that perhaps “the performer and the machine have some strange affinity that draws out cultural anxieties about becoming automatic” (1997: 442). This cultural anxiety about the manifestation of automatism in performance, as Goodall contends, is embodied by what she refers to as the “transferred agency” from humans to machines. The “transfer of agency” represents a feeling of anxiety that modulates the audience members’ perception of automatic behaviour in performance. As such, it is tempting to assume that humans are behaving more like machines and machines, in turn, are beginning to act like humans. If such a “transfer of agency” from humans to machines holds true, it would be possible to conclude that the human dancers with the original Tiller Girls have lost their agency to perform autonomously, as they submit their bodies to the automatism of the industrial machine. But how might Goodall’s concept of “transferred agency” help us to understand the audience members’ perception of automatism in Demers’ *Tiller Girls*, an intermedial performance in which machines perform mechanical dance movements that proceed from harmony and orderliness to a final state of chaos and asynchrony?

As mentioned earlier, Demers' 2010 production in Rotterdam featured a troupe of robotic dancers that could fashion a variety of dance movements based on their interactions with the stage environment. Demers and his team of designers did not prescribe a fixed set of actions to the machines. Rather than programming the behaviour of each robot beforehand, he chose to create an environment where the robotic dancers are able to operate "in a way that is not very rigid so [that] it could change" in response to that environment (qtd. in Katz and Mayaan). As a theatre practitioner, Demers holds the view that robots do not perform in accordance with the demands of human beings. He believes that by "looking at the differences in morphologies, anatomies and movements" between machines and humans, it is possible to build robots that do not imitate or approximate human behaviour (qtd. in Katz and Mayaan). In Demers' *Tiller Girls*, the robots perform as machines on the stage, thus exposing their limitations and vulnerabilities as human actors do whenever they play to an audience. Yet there remains a tendency among human performers and spectators to interpret the behaviour of autonomous performing machines through the perspective of human agency.

The tendency to subsume the autonomy of robots under the agency and control of human beings, as Goodall suggests, is very much informed by the cultural changes that occurred at the dawn of the twentieth century. Taking a historical view, she notes that with the "demise of colonial slavery" in the late-nineteenth century, the emergence of robots (both fictional and real) in the early-twentieth century fostered a "robot fantasy," whereby "the anthropomorphic machine promises an untroubled dream of power by offering the prospect of guilt-free slavery" (1997: 446). If enslaving a human being was considered unethical in a post-slavery cultural milieu, perhaps the idea of adopting an anthropomorphic machine in the form of a robot to service the needs of humans might help to alleviate the burden of guilt. Towards the middle of the century, anxieties over the possibility of robots going out of control began to condition the literary

sensibilities of science fiction authors and readers. In his 1942 short story, “Runaround,” Isaac Asimov presents a code of programming principles that delineates the parameters of human-robot relations. Dubbed “The Three Laws of Robotics,” the code provides a regulatory framework that governs the behaviour of the robots in the story. The three laws are:

First: A robot may not injure a human being, or through inaction, allow a human being to come to harm.

Second: A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.

Third: A robot must protect its own existence as long as such protection does not conflict with the First and Second Law. (2004: 37)

A general theme runs across all three laws – that is, a robot is obliged to obey the orders of human beings and to place the welfare of their human masters above their own. Furthermore, the self-reflexivity of the laws, particularly the second and the third laws, exposes the influence of the prevailing cultural anxiety towards autonomous machines during the Second World War. By emphasizing the robot’s primary role in ensuring the safety of human beings, Asimov sought to allay his readers’ fear of automatism in machines. At a time where automatic weapons such as machine guns and self-detonating ordnance caused massive destruction across Europe and Asia, the depiction of autonomous robots in Asimov’s story augmented the sense of cultural anxiety over the loss of human agency in the face of automatism. Such anxiety towards the manifestation of automatic behaviour in machines and the fear of losing human agency is foregrounded in Demers’ *Tiller Girls*.

As the twelve dancing robots traverse the expanse of the stage, the autonomy of their behaviour is made apparent whenever two or three robots break away from the main group to perform a different set of dance movements. Some of these robots may bend their metallic torsos

to the side, while others vibrate their robotic shoulders vigorously. As the breakaway robots pursue their respective actions, more robots begin to deviate from the synchronized movements of the main group. Eventually, all twelve robots are performing dance movements that differ from one another, as the sensory information that each robot picks up through its motion sensors is unique to that particular robot. A chaotic scene ensues. The randomness of the robots' movements triggers a dazzling array of twinkling lights that washes over the stage. The sound of cabaret music emanates from the overhead speakers, while a video montage of the original Tiller Girls performing their high-kicking dance routine is projected onto the cyclorama at the upstage area. Consequently, the juxtaposition of the robots' random dance movements with the precision line dance of the original Tiller Girls might evoke a feeling of techno-anxiety among the audience members, as they grapple with a perplexing scene in which human beings exhibit automatic behaviour and robots display flashes of individuality by way of peculiar dance movements.

Demers' techno-dramaturgical decision to juxtapose the automatic behaviour of the original Tiller Girl with the random and idiosyncratic performance of the dancing robots in his version of *Tiller Girls* could potentially frustrate the audience members' expectation of what human beings and machines are capable of doing. The critical question that Demers's techno-dramaturgy poses appears to be the following: How do you perceive the expression of automatism in performance? Whereas the dancing robots in *Tiller Girls* elicits a feeling of techno-anxiety about the autonomy of machines, the high-kicking precision line dance of the original Tiller Girls conjures up an image of automatism that reinforces the human spectator's concern about the loss of agency among the dancers in the troupe. In analyzing the supposed loss of agency among the original Tiller Girls, Goodall turns to Doremy Vernon's historical account of the troupe's evolution since its inception in 1890 until the time of the book's publication in 1988. As a former Tiller Girl, Vernon interviewed over 200 women who had been performing

with the troupe at some point throughout the twentieth century. Goodall points out that what Vernon's account reveals is the impression "that there was no real loss of agency for anyone who joined the kick lines" (1997: 452). Travelling from one venue to the next, the emergence of new challenges at each theatre altered the style of the troupe's performance. "The routine of the stage," as Goodall elucidates, "was counterbalanced by constant unpredictabilities in the situations they encountered through working in so many different theatres, with so many different shows, in so many different parts of the world" (1997: 452). Hence, if the stage in a particular theatre were too small, the dancers would have to reorganize their formation into shorter lines and reduce the height of their kicks.

While the troupe's director can provide the dancers with specific instructions on how to modify their high-kicking routine to suit the situation on the stage, once the dancers have started performing, it is up to each one of them to make their own decision on what they should do to accommodate the constraints of the stage environment. In other words, the agency of the original Tiller Girls resides in their ability to adapt their performances to the unpredictable situations that they encounter at different performance venues. Yet if this is the case, then what is the motivation behind the audience members' anxiety over the loss of agency among the dancers in the troupe? Goodall's contention is that the audience members' assumption that the dancers with the original Tiller Girls have lost their agency amid the exhibition of automatic behaviour in their precision line dance serves as a rhetorical strategy through which to cope with the cultural anxiety about automatism and how it might undermine the privileged status of human beings in society. However, it must be noted that the "transfer of agency" from humans to machine is not a physical transfer but a projection of the human being's anxiety about the loss of agency onto the machine.

"Anxieties about transferred agency," as Goodall reminds us, "are developed through a dichotomous logic that counterposes the human and the machine, the agentic and the automatic,

the vital and the functional, as mutually exclusive equivalents” (1997: 452). Speaking in speculative terms, we could assume that the audience members in Demers’ *Tiller Girls* might be anxious about the possible loss of human agency to autopoietic machines, an experience that could potentially induce a feeling of techno-anxiety towards the autonomy and intelligence of the dancing robots in the performance. Despite the self-sufficiency of these robotic dancers, the audience members might be inclined to perceive the automatism of the machine as a threat against the preservation of human agency. Demers sums up the vexed relations between humans and robots as follows: “Every time I work with a choreographer or dancer I say: stop trying to imitate the robot. [...] And stop trying to be a human next to a robot to show how [much] better you are because we all know this already – just try to think what it is to be a robot and then – dance” (qtd. in Katz and Mayaan). What Demers’ comments suggest is that the fear of losing agency and the feeling of techno-anxiety towards the autonomy of the robotic dancers in *Tiller Girls* are symptomatic of the human propensity to interpret the autonomy of machines on human terms rather than to understand the network of processes that render those machines autonomous.

The human being’s inability or unwillingness to imagine what it is like to be a robot and to empathize with the operational challenges that autonomous machines encounter in the theatre has far-reaching consequences for human-machine relations in everyday life, particularly as scientists, engineers, and artists begin to espouse a rhetoric of disembodiment that emphasizes the obsolescence of the biological body in favour of a “fusion” between the human brain and information technology (i.e., to become a “cyborg”). Such fantasies may empower able-bodied individuals who have the financial and technological resources to work towards fulfilling their dream of “cyborgian fusion”. For persons with disabilities, however, the incorporation of technological implements into their body schema is not always a matter of choice. Anyone with a physical or cognitive disability would be aware that such technological extensions as close

captioning, hearing aids, and prosthetic limbs are oftentimes a necessity. Furthermore, the suggestion that “cyborgian fusion” makes it possible to leave one’s biological body behind tends to be formulated at the expense of persons with disabilities and the struggles – both physical and psychological – that they have to grapple with on a daily basis. In light of the rhetoric of disembodiment that informs the thinking of prominent futurists such as Ray Kurzweil and Hans Moravec, the next chapter will examine the construction of the “cyborg” as a conceptual metaphor and an instantiation of human-machine interaction in intermedial performance. I will be looking at Stelarc’s cyborgian experiment with the actuation of physical performance through an online avatar and Petra Kupperts’ *Cripple Poetics*, wherein two performers with disabilities draw upon the affordances of telematics in order to articulate the physicality of their embodied existence as cyborgs on the intermedial stage.

Chapter 5:

Prosthetic Bodies: Disability, Technology, and the Cyborg in Performance

“I was born human. But this was an accident of fate – a condition merely of time and place. I believe it’s something we have the power to change.”

- Kevin Warwick, “Cyborg 1.0.” *Wired*, 8.02, Feb. 2000

“No reconfigured body, no matter how beautiful, will slow the death of a cyberpunk with AIDS.

Even in the age of the technosocial subject, life is lived through bodies.”

- Allucquère Rosanne Stone, “Will the Real Body Please Stand Up? Boundary Stories about Virtual Cultures,” *Cyberspace: First Steps*, 1992, p.113

When the British cyberneticist Kevin Warwick delivered his keynote address at the Asia-Pacific Youth Science Festival in 2000, details about a series of experiments, known collectively as “Project Cyborg,” were shared with the attendees. As a high school senior at the festival, I was fascinated by the promise of a cyborgian future where the interface between biological bodies and intelligent devices would enable human beings to overcome and transcend their physical and cognitive limits. It was, after all, the dawn of a new millennium. Scientists raised the prospect of travelling to Mars and back, while the quest to map out the entire genome of the human species was in full swing. Across a myriad of media, from magazines to television documentaries, the scientific fervour was hard to miss. During his talk, Warwick unveiled pictures from an experiment that happened two years before, in the summer of 1998. Working with a surgeon, he had implanted a Radio Frequency Identification (RFID) chip beneath his skin. As he moved through the offices of his home department at the University of Reading, the electronic implant

transmitted radio waves to a network of receivers that were retrofitted onto the walls and ceilings. These receivers, in turn, transmitted electromagnetic signals to a computer that had been programmed to respond in accordance with his bodily movements. Warwick reported that throughout the nine-day experiment, he was able to perform “seemingly magical acts simply by walking in a particular direction” (“Cyborg 1.0” 2000). But besides the supposed simplicity of such ‘magical actions’ as controlling doors and turning on the lights in the office without touching a knob or a switch, he also had a relatively simple dream, which was “to become one with his computer” (“Cyborg 1.0” 2000).

In the years following Warwick’s talk at the science festival, he had experimented with more complicated neural interfaces that were integrated into his nervous system. These neural interfaces served to connect his nervous system to the Internet, which he used to communicate with a robotic arm located thousands of miles away, and also to the nervous system of another human being, which facilitated the direct exchange of electrical signals between the nervous systems of two separate individuals. For Warwick, these experiments would pave the way towards establishing what he calls “a cyborg community,” where ordinary human beings become “superhumans” by using chip implants to connect their nervous systems to intelligent machines. But while the pursuit of cyborgian fusion may seem like a lucrative venture for any able-bodied person with the financial resources and relevant technological expertise, the prospect of fusing with computers by way of electrical prostheses such as Warwick’s implants or mechanical extensions in the form of artificial limbs is often celebrated at the expense of individuals with physical or cognitive disabilities. As scientists and engineers such as Warwick, Hans Moravec, and Raymond Kurzweil begin to espouse a rhetoric of disembodiment that emphasizes the obsolescence of the biological body in favour of a “fusion” between the human brain and information technology (i.e., to become a “cyborg”), it seems easy to forget that for persons with

disabilities, the integration of their bodies with various technological implements is not always a matter of choice.

Anyone with a physical or cognitive disability would probably be aware that such technological extensions as close captioning, hearing aids, and prosthetic limbs are oftentimes a necessity rather than a choice. Furthermore, the suggestion that “cyborgian fusion” makes it possible to leave one’s biological body behind in order to exist in a disembodied union with computers tends to overlook, perhaps unwittingly, the struggles that persons with physical or psychological disabilities have to grapple with on a daily basis. In light of the rhetoric of disembodiment that informs the thinking of such prominent futurists as Kurzweil and Moravec, this chapter will examine the construction of the “cyborg” as a conceptual metaphor and an instantiation of human-machine interaction in intermedial performance. To this end, I will be looking at Stelarc’s cyborgian experiment with the actuation of physical performance through an virtual avatar and Petra Kupperts’ *Cripple Poetics*, in which two performers with disabilities draw upon the affordances of 3D tele-immersion technology in order to articulate their embodied existence as cyborgs on the intermedial stage. Consequently, the final section of this chapter will examine the intersection of disability and technology in performance by paying attention to the rhetorical and material connections between disability and the prosthesis. Turning to the work of David Wills and Jay Dolmage, I will explore the generative possibilities that the prosthesis might lend to persons with disabilities, especially when their prosthetic relation with technology challenges the normative account of the body as autonomous, unified, and self-determining.

5.1 Dreaming of Cyborgian Fusion

The disembodied rhetoric of cyborgian fusion espouses the idea that human beings are capable of overcoming their existential finitude through the fusion between the human mind and

intelligent machines. The creation of advanced computational systems allows human beings to ponder over the prospect of transcending the limitations of their mortal bodies by transferring their thoughts and memories into a machine that exhibits high levels of artificial intelligence (AI). Not only would such AI machines unfold the potential for humans to overcome the onset of physical and cognitive decay, and indeed the eventuality of death, the fusion between the human mind and computers could potentially expand the mental capacities of the human being beyond the limits of its biological brain. The robotics scientist and engineer Hans Moravec believes that natural humanity is unpromising material for immortality. The human body in its present iteration is vulnerable to damage, decay, and irrevocable destruction. In light of what he considers as the progression from impressionable plasticity to self-assured rigidity throughout a person's lifetime, Moravec contends that humans need to be reprogrammed for continual adaptability, if it is to become a viable form of life that has the potential to overcome death (1988: 5). In turn, this quest for immortality would require a technological leap that allows the human mind to continue existing beyond the expiration of the body.

Citing the increased life expectancy of people living with artificial organs and other prosthetic body parts, Moravec claims that in the future "such replacement parts will be better than any originals" (1988: 109). If these replacement body parts can augment the capacities of the human being, both in terms of internal bodily functions and the ability to perform such physical tasks as walking and swimming, what would the full replacement of the human body achieve? In addressing this question, Moravec advances the idea of "transplanting a human brain into a specially designed robot body" (1988: 109). Subscribing to the Cartesian philosophy of dualism, whereby the materiality of the body and the supposed immateriality of the mind are treated as separate ontological substances (*Meditations* IV), Moravec presupposes a split between mind and matter that raises the possibility of transcending the finitude of the body through the

technological intervention of robotics. Freed from the mortality of the human body, the mind can continue existing in a new, nonhuman substrate that takes the form of an intelligent machine. However, Moravec believes that a “[human] mind would require many modifications to operate effectively after being rescued from the limitations of a mortal body” (1988: 5). While the “transplant scenario gets our brain out of our body,” he explains, the intellectual performance of the mind continues to be conditioned by the neurophysiology of brain matter (1988: 109). Lamenting the “limited and fixed intelligence of the human brain,” which he perceives to be “our biggest handicap,” Moravec wonders if there is “a way to get our mind out of our brain” (1988: 109). This idea of separating the mind from the brain gestures towards the possibility of storing, transmitting, and replacing thoughts and memories across a variety of media without the support of an organic system, such as the brain or the entire human body. Hence, Moravec’s dream of cyborgian fusion envisions a disembodied existence for human beings, as they acquire higher levels of cognition and intellect by fusing their minds with an intelligent machine.

In her analysis of the emergence of the posthuman in the information age, N. Katherine Hayles notes that the cyborg, as it is conceived in contemporary technoculture, is comprised of “informational pathways connecting the organic body to its prosthetic extensions” (1999: 2). This cyborgian connection, as Hayles observes, “presumes a conception of information as a (disembodied) entity that can flow between carbon-based organic components and silicon-based electronic components to make protein and silicon operate as a single system” (1999: 2). As information passes from organic matter to a myriad of electronic prostheses and back in a self-sustaining fashion, the cyborg no longer requires a body to maintain its viability. “When information loses its body,” Hayles contends, “equating humans and computers is especially easy, for the materiality in which the thinking mind is instantiated appears incidental to its essential nature” (1999: 2). In other words, the human body is regarded as an accidental existence rather

than being the field or reference point of perception and thinking. Responding to Moravec's proposal to download human consciousness into a computer, Hayles reminds us that in order "for information to exist, it must *always* be instantiated in a medium," whether that medium is a piece of paper or a computer screen (1999: 13). But Moravec's dream of cyborgian fusion is more than just a fantasy of Cartesian dualism, which presupposes a split between mind and matter that would pave the way for human consciousness to be fused with an intelligent machine. Instead, his proposal seeks to transcend the limits of human mortality through the technological intervention of robotics and artificial intelligence, as well as to augment the cognitive and intellectual capacities of human beings as they assume a new identity as immortal cyborgs.

In *The Age of Spiritual Machines*, the futurist and inventor Ray Kurzweil announces the end of death for human beings. The "twenty-first century," he claims, "will be different," particularly as "the human species, along with the computational technology it created, will be able to solve age-old problems of need, if not desire" (1999: 2). With the aid of intelligent machines that possess the ability to diagnose and treat a wide range of ailments, it might be possible to cure many debilitating diseases and to eradicate the threat of physical and cognitive degeneration. As computational technology becomes increasingly sophisticated and intelligent, human beings "will be in a position to change the nature of mortality in a postbiological future" (1999: 2). Like Moravec, Kurzweil makes the claim that humans will overcome death by scanning and transferring their minds to computers, literally digitizing themselves as bits of information and going beyond the atoms that constitute the organic body. Gazing into his crystal ball, he claims that by the turn of the next century (i.e., the twenty-second century), "life expectancy is no longer a viable term in relation to intelligent beings" (1999: 280). As intelligent and immortal cyborgs, human beings will exist as information in computer systems and death would become nothing more than a condition of history. Kurzweil argues that our dependence on

hardware (the physical self, for instance) is the fundamental problem with the past. Having a mortal body is considered a hindrance to the advancement of human intelligence, especially as computational technology begins to outstrip the cognitive and intellectual performance of human beings. Thus, Kurzweil foresees that the materialist history of the human species will come to an end when we “cross the divide” that supposedly separates humans and intelligent machines and “instantiate ourselves into our computational technology” (1999: 128-9). But while Moravec and Kurzweil seem convinced that humans will fuse with the intelligent machines that they create, and thereby become immortal cyborgs, they have yet to partake in experiments that endeavour to fuse their organic bodies with electronic implants. Meanwhile, in the United Kingdom, the robotics engineer Kevin Warwick has been attempting to turn his dream of cyborgian fusion into reality. Warwick’s cyborgian experiments are pertinent to my discussion on cyborgs because they serve to foreground the performativity of his decision to undergo surgical procedures that facilitate the fusion of his body with electronic implants that communicate wirelessly with the external environment.

Since the late 1990s, Warwick, a professor of cybernetics who also happens to be a self-styled cyborg, has experimented with the idea of cyborgian fusion by inserting electronic chip implants into his body. In 1998, two years before I saw him in person, he had surgically inserted a transponder into his forearm. As he walked through the offices at his university, the chip sent signals to a variety of analogue and digital devices, thus allowing him to operate “doors, lights, heaters and other computers without lifting a finger (Warwick 2005). Building on the success of the first experiment, Warwick decided in 2002 to insert a microelectrode array directly into the median nerve fibres of his left arm. The aim of this second experiment was to examine how his nervous system could communicate with a computer using neural signals detected and retransmitted by the array. “The procedure,” Warwick explains, “which took a little over two

hours, involved inserting a guiding tube into a two inch incision made above the wrist, inserting the microelectrode array into this tube and firing it into the median fibers below the elbow joint” (2005). This invasive procedure enables him to communicate directly with a computer without relying on his limbs. By fusing his nervous system with the microelectrode array, Warwick bypasses the physical functions of the body in order to establish a feedback loop between the neural signals emitted by his brain and any networked computer system that is situated within range of the electronic array in his arm. This neural link between the human brain and a computer affirms his vision of cyborgian fusion.

In an article written for *Wired* magazine entitled, “Cyborg 1.0,” Warwick offers his theory of the cyborg. Amid the rapid advancement of computational technology in the twenty-first century, he is concerned that human beings “face the distinct possibility of being superseded by highly intelligent machines” (“Cyborg 1.0” 2000). In response to what he considers to be a gap between the abilities of humans and intelligent machines, he seeks to transform himself into a cyborg rather than capitulating to the power of computational technology. “Right now,” Warwick observes, “we’re moving toward a world where machines and humans remain distinct, but instead of just handing everything over to them, I offer a more gradual coevolution with computers” (“Cyborg 1.0” 2000). Citing his own experience with the implantation of an RFID chip beneath his skin, which gave him the ability to open doors and turn on computers without touching them, he argues that the fusion between the organic body and electronic implants would allow human beings to avoid “a future in which intelligent machines rule and humans become second-class citizens” (“Cyborg 1.0” 2000). Yet Warwick’s description of the potentially antagonistic relations between humans and machines appears to overlook the technical event that brings the human as a tool-bearing entity into being.

Earlier in Chapter 2, we looked at how the French philosopher Bernard Stiegler's theory of epiphylogenesis informs our understanding of human-machine interaction as a co-evolutionary relationship that unfolds across time and space. As Stiegler notes in his study of technics and time, "the human invents himself in the technical by inventing the tool – by becoming exteriorized techno-logically" (*TTI* 1998: 141). In other words, Warwick's offer of "a gradual coevolution with computers" is not exactly a new idea, for the invention of technics already constitutes the technical event in which the human is invented. Building on the thinking of the French anthropologist André Leroi-Gourhan, Stiegler contends that the invention of technics marks the invention of the human who is exteriorized by way of its tools. Leroi-Gourhan regards mobility, rather than intelligence, "as the significant feature of evolution toward the human state" (1993: 26). As such, the human quest for mobility motivates the human animal to reach beyond the limits of its hands. "What is specific to the human," as Stiegler elucidates, "is the movement of putting itself outside the range of its own hand, locking onto the animal process of 'liberation'" (*TTI* 1998: 146). Once the hand has been freed from locomotion, the human animal is able to reach beyond the range of its body by inventing tools and using them repeatedly to achieve specific goals. These goals can range from hunting to the wireless control of unmanned aerial vehicles (more commonly known as "drones"). What this means is that the life of the human being is always already intertwined with the tools that it invents. By contrast, Warwick's assumption that humans and machines exist as distinct entities sets up the basis on which a power struggle between both entities might ensue, as evidenced by his fear of humans ceding control to intelligent machines in the future.

Taking an anthropocentric view of technology, which presupposes that "individual liberties and human life are always valued over and above machines," Warwick establishes a new hierarchy of value that places "superhuman" cyborgs above "ordinary" human beings ("Cyborg

1.0” 2000). “[J]ust as humans have always valued themselves above other forms of life,” he claims, “it’s likely that cyborgs will look down on humans who have yet to ‘evolve’” (“Cyborg 1.0” 2000). The anthropocentrism in Warwick’s thinking is apparent, as he transposes the superior attitude that human beings adopt vis-à-vis nonhuman entities to an imaginary future in which the more evolved cyborgs hold themselves in higher regard than technologically inferior humans. But it seems to me that his prediction about the superiority of cyborgs is indicative of an essential misunderstanding of the technological essence of the human being. If Stiegler is right that the invention of technics is the invention of the human, then perhaps the construction of the cyborg could be seen as another phase in the evolution of the human as a technological being.

The dream of cyborgian fusion may be beguiling. Yet the cyborg has less to do with the fusion of the organic body with electronic prostheses. Drawing on Hayles’ interpretation of the cyborg as “a cultural icon and technological artifact” (1999: 24), I claim that the cyborg in both its metaphorical rendering and material instantiation embodies the technological relationship between the human being and the prostheses that it invents. Moreover, this is a relationship that is constantly renegotiated whenever the human individual employs a tool for a particular purpose. In the following section, I will be looking at how Stelarc’s *Movatar* reformulates the relationship between the human body and digital technology by hooking up his body to a computer. This setup enables a digital avatar to manipulate the upper half of the artist’s body via an artificial intelligence (AI) engine that processes visual, auditory, and physical stimuli from the real world. The aim here is to actuate the physical performance of the body by technological means. But as I will argue in the section, Stelarc’s cyborgian experiment overlooks the subjective experiences encountered by persons with disabilities (particularly in regard to their use of prostheses), as he voluntarily disables his arms and cedes control of them to a computer system.

5.2 Dis/abling the Prosthetic Body in Stelarc's *Movatar*

Stelarc is a Cyprus-born Australian artist who specializes in intermedial performances that seek to extend the capacities of the human body through the use of robotic prostheses and electronic actuators that are attached to the artist's body. For over three decades, Stelarc's work has explored the cybernetic feedback loop between technology and the body. The thematic focus in most of his performances hinges on his belief that the "human body is obsolete" amid the rapid development of sophisticated technological systems such as bionic arms and autonomous robots that outstrip the capabilities of human beings. This concept of bodily obsolescence has led Stelarc to develop intermedial performances that augment the capabilities of the human body by connecting it directly to a computer network and allowing that system to control its physical movements. In the 1995 production of *Fractal Flesh*, audience members located at a distant place could actuate the limbs of Stelarc's body by way of an Internet application that conveyed digital data generated at the spectators' location to the performance venue where the artist's body was situated. By enabling people situated faraway to access and manipulate the physical expression of his body, Stelarc believes that the project mobilizes "the displacing of motions from one Net-connected physical body to another" ("Fractal Flesh" 1995). This distribution of agency across bodies located at different nodes in the intermedial performance network produces a "body [Stelarc's] whose proprioception responds not to its internal nervous system but to the external stimulation of globally connected computer networks" ("Fractal Flesh" 1995).

Drawing on the lessons of *Fractal Flesh*, Stelarc reformulated his approach to the external control of the human body through Internet-based computer networks in the 1996 production of *Ping Body*. Whereas the human audience in *Fractal Flesh* could use an Internet application to remotely control the physical movements of Stelarc's body from a distance, in *Ping Body*, the artist's body was directly impacted by the intensity of data transfer on the Internet. Each 'ping'

that the artist's body received was translated into a physical reaction in that same body. "What is being considered" in *Ping Body*, Stelarc explains, "is a body moving not to the promptings of another body in another place," as was the case in *Fractal Flesh*, "but rather to Internet activity itself" ("Ping Body" 1996). By hooking up his body to the Internet, the "proprioception and musculature" of the artist's body was "stimulated not by its internal nervous system but by the external ebb and flow of data" ("Ping Body" 1996). Stelarc sees in *Ping Body* an inversion of what he considers to be the typical human relationship with the Internet, for "instead of the Internet being constructed by the input from people, the Internet constructs the activity of one body" (qtd. in V2 1997: 27). Ceding control of one's bodily movements to the intensity of Internet activity might have reinforced Stelarc's belief in the "obsolescence" of the human body, especially in terms of the body's ability to influence the activities of the physical and virtual environments. However, the passive state of the artist's body in *Fractal Flesh* and *Ping Body*, wherein the body became a vehicle for the physical expression of digital data, discounted the potential of a shared agency that could transpire between the human body and the computer system that influenced its behaviour. Given the lopsided manifestation of agency in these projects, which emphasized the impact of nonhuman technological systems on the human body, Stelarc went on to develop a new performance that endowed his body with some degree of agency as it interacted with a digital avatar on the computer screen.

Conceived as an inverse motion-capture system, Stelarc's *Movatar*,³⁶ which premiered in 2000, made it possible for a digital avatar to physically perform in the real world using the artist's body. At first glance, this performance appears to reiterate the passivity of the human body in *Fractal Flesh* and *Ping Body*. Once again, Stelarc allows the computer system into which his

³⁶ Stelarc's *Movatar* was first performed in August 2000 as part of the "Cybercultures" conference and exhibition at the Casula Powerhouse Arts Centre in Casula, which is a suburb of Sydney, Australia.

body is plugged to control the various parts of his body. But *Movatar* is different from those earlier performances in that the artist has the capacity to influence the behaviour of the digital avatar that is designed to actuate the physical movements of his body. By attaching a set of mechanical prostheses to his upper torso and both his arms, Stelarc voluntarily disables the functions of the upper half of his body (excluding his head) and cedes control of his arms and upper torso to the AI system that modulates the behaviour of the digital avatar on the computer screen. This “motion prosthesis interface,” as Stelarc calls it, “has only 3-degrees-of-freedom for each arm but this [setup] allows 64 possible combinations” of physical action to be actuated by the digital avatar (“*Movatar*” 2000). It is worth noting that this digital avatar mimics the outline of the human body. Each time a physical movement is actuated in the artist’s body, be it the arms or the upper torso, the digital avatar will indicate the specific region where the activity occurs.

As Stelarc’s arms are manipulated by the digital avatar through the transmission of signals from the computer to the motion prosthesis, he is able to move his legs and walk around the performance venue. Along the way, the artist is free to step on a series of floor sensors that can alter the behaviour of the digital avatar, which thereby influences the way in which the muscles in his arms are actuated by the nonhuman entity. For Stelarc, this interface between the physical performance of the human body and the virtual manifestation of the digital avatar generates “a dialogue,” whereby “the body shares its agency with an artificial entity” that is “capable of evolving behaviour” in the physical world (“*Movatar*” 2000). But the question remains as to how this “dialogue” between a virtual body and the physical human body might serve to affirm or undermine Stelarc’s concept of bodily obsolescence? Furthermore, the artist’s voluntary disablement of his arms and upper torso problematizes the use of the motion prosthesis as a performance prop, as persons with disabilities do not always enjoy the luxury of choosing the circumstances under which they may require a particular prosthesis to facilitate the daily

functioning of their bodies. Thus, it is imperative that we examine how the momentary fusion between the human body and a computer system in Stelarc's *Movatar* occurs – perhaps unwittingly – at the expense of persons with disabilities, whose relationship with mechanical and electronic prostheses is oftentimes borne out of necessity rather than choice.

Stelarc's voluntary disablement of his arms and upper torso in *Movatar* calls to mind the story of the "vol-amps" in Bernard Wolfe's mid-twentieth century science fiction novel, *Limbo*. Written in 1952, Wolfe's novel arrived at a time of heightened anxiety about the impact of technology on the human condition in post-World War II America. The story imagines a dystopian future set in the 1990s, a time when a nuclear conflict between the United States and the Soviet Union has only just subsided. In a bid to avoid the horrors of war, groups of wealthy men from both countries decide to voluntarily amputate their limbs and replace them with nuclear-powered prostheses. As these replacement limbs become increasingly sophisticated and reliable, due in part to the miniaturization of nuclear-powered motors, the abilities of the male amputees begin to outstrip those human beings who do not have the financial resources to obtain the prostheses. As a result, a class of "voluntary amputees" or "vol-amps" emerges, as men with status and wealth desire to attain what they perceive to be 'superhuman' abilities by replacing their limbs with nuclear-powered prostheses that enable them to leap across the roofs of skyscrapers without fear. In celebration of the prestige accorded to any male amputee equipped with these powerful prostheses, a cyborg Olympics is held regularly between the United States and the Soviet Union. But while this arrangement may help to ease tensions and minimize the potential for conflict, it also leads to greater competition among the male amputees, with quadruple amputees enjoying higher status and privilege than single and double amputees. This fervour for voluntary amputation and the procurement of prostheses sums up the dystopian quality of Wolfe's *Limbo*, as the characters' desire to become cyborgs by any means possible

foregrounds the plight of human beings who possess a disability and/or are unable to afford the luxury of acquiring technologically advanced prostheses.

In her analysis of the cybernetic syntax in Wolfe's novel, N. Katherine Hayles notes that *Limbo* "envisions polarities joined by a hyphen: human-machine, male-female, text-marginalia," rather than a circuit that integrates these polarities through a series of feedback loops (1999: 115). Hayles regards the hyphenated couplings in *Limbo* as Wolfe's attempt at reaffirming the identity and ontological unity of the human being as an autonomous subject that remains unaffected by the machines with which it interacts. But the difference between the hyphen and the circuit is more than just a case of stylistic preference. Hayles explains that while "the hyphen joins opposites in a metonymic tension that can be seen as maintaining the identity of each, the circuit implies a more reflexive and transformative union" (1999: 115). Every component in a cybernetic circuit could potentially modify, and be modified by, another component within that circuit. Hayles raises the example of the human body that is "integrated into a cybernetic circuit," such that any "modification of the circuit will necessarily modify consciousness as well" (1999: 115). She believes that the idea of a cybernetic circuit that integrates humans and machines through feedback loops should move towards what she calls the "cybernetic splice" (1999: 123). Unlike the hyphen that seeks to retain the distinctive features of the entities that it binds, the splice points to a transformation of the entities that interact within the cybernetic circuit. The modern word 'cybernetics' originates from the Greek root, *kybernetes*, which translates into English as 'steersman'. For Hayles, the image of a 'steersman' "aptly describes the cybernetic man-machine" as one that is "light on its feet, sensitive to change, [and] a being that both is a flow and knows how to go with the flow" (1999: 104). A cybernetic system is one that is adaptive, as entities within the circuit adapt to each other's function. As such, Hayles' concept of the "cybernetic splice" – that is, the splicing of humans and machines in an integrated circuit – offers

an understanding of the cyborg that does not endeavour to subsume one entity in the circuit under the other. Instead, the cyborg here refers to the conjunction of humans and machines in a relationship that is mutually transformative.

Just as humans can alter the way machines operate, machines can also transform the way humans behave, as demonstrated by the ability of the “vol-amps” to perform extraordinary feats with the help of their nuclear-powered prostheses. But the notion that a machine is capable of affecting any human individual who interacts with it could also be perceived as a threat to the autonomy of the human being. As Hayles observes, the predicament of the “vol-amps” in *Limbo* reflect Wolfe’s anxiety towards the “subversive effects of cybernetics” on the identity of human beings as autonomous entities, as the voluntary amputees acquire the ability to perform extraordinary feats that individuals who are deprived of the nuclear-powered prostheses are unable to (1999: 115). While the “vol-amps” appear to be in control of the prostheses that are attached to their torsos, the implication in Wolfe’s novel seems to be that the ontological unity of these prosthetic bodies have been altered to such an extent that they can no longer be recognized as those belonging to human beings. Hayles claims that this expression of cybernetic fear in *Limbo* bears the imprint of Norbert Wiener’s (the founder of twentieth-century cybernetics) anxiety about the curtailment of human agency by what he describes as “inflexible machines”.

“When human atoms,” as Wiener writes in *The Human Use of Human Beings*, “are knit into an organization in which they are used, not in their full right as responsible human beings, but as cogs and levers and rods, it matters little that their raw material is flesh and blood” (1988: 185). For Wiener, a machine becomes inflexible when it does not allow the human being to exercise its agency in the cybernetic system, thereby enslaving the individual as a mechanical element that serves the goals of the machine. Thus, Wiener’s priority, according to Hayles’ reading of his cybernetic theory, is to “construct the boundaries of the cybernetic machine so that

it reinforces rather than threatens the autonomous self” (1999: 105). Policing the boundaries that define the autonomy of the human being would mean that machines are considered cybernetic only when they preserve the autonomous self, and human agency in the cybernetic system is protected. Yet despite Wiener’s – and indeed Wolfe’s – anxiety about the possible erosion of human autonomy and agency in cybernetic systems, the desire of the “vol-amps” in *Limbo* to attain ‘superhuman’ abilities by technological means reveals the prosthetic potential of the human body that avails itself to the prospect of modification and reconstitution, as well as the extension of its abilities through artificial appendages. It is this prosthetic potential that Stelarc exploits in *Movatar*, as he voluntarily disables his arms and upper torso, and connects them to a computer system that is designed to control the movement of these body parts in space.

In contrast to Wolfe’s anxiety about the negative effects of cybernetic systems on the human condition, Stelarc is not so much concerned about protecting the boundaries that define the autonomous agency of the human being. Instead, the overarching premise of his intermedial performances is to reveal the limits of the human body in order to illustrate the functional “obsolescence” of that body. But what does Stelarc mean when he says that the human body is obsolete? “When Stelarc speaks of the ‘obsolete body’,” as Paolo Atzori and Kirk Woolford elucidate, “he means that the body must overcome centuries of prejudices and begin to be considered as an extendible evolutionary structure enhanced with the most disparate technologies, which are more precise, accurate and powerful” (1995). Treating the human body as an “extendible evolutionary structure” presupposes a prosthetic potential that makes it possible to attach powerful prostheses to the seemingly inadequate organic body.

Bernard Stiegler makes the point that the prosthesis not only extends the body but also reconstitutes it. “The prosthesis,” Stiegler notes, “is not a mere extension of the human body; it is the constitution of this body *qua* ‘human’ (the quotation marks belong to the constitution). It is

not a ‘means’ for the human but its end, and we know the essential equivocity of this expression: ‘the end of the human’” (TTI 1998: 152-3). Rather than replacing a lack, the prosthesis is incorporated into the human body as part of its constitution. However, from Stelarc’s point of view, the human body is inadequate in terms of its ability to deliver precise physical actions in performance. To compensate for the presumed functional deficiency of the human body, the artist attaches a computer-controlled ‘motion prosthesis’ to his arms and upper torso as a technological means by which to augment the precision of his physical movements. Stelarc’s thinking about the prosthesis departs from Stiegler’s, as he regards the prosthesis as merely a *means* of making up for the ostensibly inadequate abilities of the human body. In this sense, the prosthesis serves not as an extension of the body’s inherent abilities but as a substitute for the abilities that the body supposedly lacks. As such, *Movatar* foregrounds the interplay between the human body and a virtual avatar imbued with artificial intelligence, as Stelarc fashions a techno-dramaturgy that involves “a kind of dance dialogue by a combination of promoted actions from the avatar and personal responses by the host body” (“Movatar” 2000). In turn, this “dance dialogue” between the actions delivered by the section of the artist’s body that is not attached to the *motion prosthesis* (i.e., his legs) and the computer system that comprises the virtual avatar and its AI engine appears to integrate the human being and the machine into a cybernetic feedback loop.

Detracting from the passivity of the body in Stelarc’s production of *Fractal Flesh* and *Ping Body*, wherein the entire human body is subjected to the electronic control of a remotely located human agent or the flow of informational data on the Internet, neither the artist’s body nor the computer system is in full control of the performance in *Movatar*. As Stelarc explains, “the pneumatically actuated exoskeleton motions of the prosthesis are able to make the upper torso of the body perform in precise and powerful ways whilst the legs can perform with flexibility and freedom” (“Movatar” 2000). But despite the avatar’s ability to “determine what is

done with the body's arms," Stelarc insists that the human performer would still "be able to choose where and for what duration it could be done" ("Movatar" 2000). While the avatar in the computer system is responsible for actuating the physical actions – the twisting, lifting, and turning – of the artist's arms and upper torso, the lower half of the body is given the "flexibility and freedom" to move around the stage and interact with a series of feedback sensors on the floor. Connected directly to the computer system that runs the avatar and actuates the 'motion prosthesis', these sensors can be used to alter the behaviour of the avatar or to halt the performance altogether. According to Stelarc, the main issue of concern in *Movatar* "is not one of who [the avatar or the human body] is in control but rather of a more complex, interactive performing system of real and virtual bodies" ("Movatar" 2000). Yet there seems to be a contradiction in Stelarc's vision of an interactive performance between real and virtual bodies that is not predicated on control, especially given his belief that the human body is obsolete in terms of its abilities and is thus in dire need of technological enhancement. Why then does the body, with its apparent inadequacies, still matter in his performances?

5.3 Matter of Choice: Modifying the Objective Body

The media philosopher Brian Massumi discerns a paradox in Stelarc's thinking about the obsolescence of the human body and the prominent role that this obsolete body plays in the cybernetic experiments that the artist employs in his intermedial performances. "Stelarc," as Massumi observes, "gives every sign of wanting to have it both ways, making his medium the body *and* ideas. But then he goes on to say that the first is 'obsolete,' all the while protesting that his work operates entirely outside of the 'outmoded' metaphysical distinctions of soul-body or mind-brain" (2002: 89). While Stelarc may be adamant that his performances do not affirm the dualist distinction between mind and body, his description of the avatar in *Movatar* as "an

external intelligence” betrays a perspective that holds the mind and the body as separate entities (“Movatar” 2000). By attaching the exoskeleton ‘motion prosthesis’ to his arms and upper torso, the upper part of Stelarc’s body becomes the material that the avatar imbued with artificial intelligence – a mind that exists separately – is capable of animating in the real world. In turn, the exoskeleton ‘motion prosthesis’ becomes “the physical analogue for the muscles of an intelligent avatar,” a separation between intelligence and matter that reinforces the dualist distinction between mind and body (“Movatar” 2000). Treating the human body as a vehicle through which physical actions can be actuated by a virtual entity provides Stelarc with a basis for claiming that the body is obsolete while insisting on the suitability of the body as a medium for performance.

But Stelarc does not seem to be concerned about generating concepts about the human body as it relates to cybernetic systems. Instead, as Massumi points out, Stelarc is interested in “experiencing the body *as* concept” (2002: 89). It is only by plugging the body into a computer system and probing the limits of that body in the cybernetic performance that Stelarc is able to capture a physical experience of ideas about human-machine interaction by “coupling the expression of an idea with the direct experience of it” (qtd. in Atzori and Woolford 1995). For all his pronouncements about the obsolescence of the human body, the physical experience of ideas about cybernetic systems continues to matter to him. Stelarc believes that the body is not lacking but in excess, as it stands ready to unleash its prosthetic potential. “We are all prosthetic bodies,” he claims, “with additional circuitry that allows us to perform beyond the boundaries of our skins and beyond the local space we inhabit” (Stelarc qtd. in Scheer 2005). Describing the body’s prosthetic potential as “additional circuitry” conveys the impression that the body is a machine that is always already modifiable. Furthermore, Stelarc’s use of the phrase “prosthetic bodies” seems to suggest that the human body is also a prosthetic entity in relation to the technological objects that help to enhance its abilities and extend its presence in the world.

As Massumi explains, the body and the object are “extensions of each other,” for not only are objects and things considered prostheses in relation to the body, but the body is also a kind of prosthesis to things and objects (2002: 95). Massumi contends that the body and the object are “differential plug-ins into the same forces, two poles of the same connectability” (2002: 95). Just as the prosthetic object extends the abilities of the body, the body as prosthesis is also capable of augmenting the inherent capacities of the object. The cybernetic feedback loop that transpires between the human body and the computer system in *Movatar*, wherein the artist’s arms become the medium of physical expression for the virtual avatar while his legs are free to step on sensors that alter the avatar’s behaviour, seems to embody Massumi’s point about the body and the object being prosthetic extensions of each other. Indeed, as Stelarc asserts, “the body itself becomes a prosthesis for the manifestation of a virtual entity’s behaviour” (qtd. in Zylinska 2002: 129). But while Stelarc may regard the human body as a prosthetic extension of the virtual avatar, he nonetheless subscribes to a normative conception of the body’s architecture and functioning.

For Stelarc, the body as prosthesis represents “an extendible evolutionary structure” that can be redesigned and extended with prosthetic devices in order to enhance its capabilities (qtd. in Atzori and Woolford 1995). This prosthetic body is construed as a readily modifiable object endowed with the potential for extension and structural reconditioning, as illustrated by the attachment of nuclear-powered prostheses to the crippled bodies of the “vol-amps” in Bernard Wolfe’s *Limbo*. However, what is troubling about the “vol-amps” in Wolfe’s *Limbo* as well as Stelarc’s use of the exoskeleton ‘motion prosthesis’ in *Movatar* is not the integration of the human body into a cybernetic circuit with machines that are powerful and intelligent. Rather, the issue of contention revolves around the voluntary disablement of specific parts of the human body as a prerequisite for augmenting the abilities of that body by way of technological prosthesis. Like the modifiable bodies of the “vol-amps” in *Limbo*, the human body in *Movatar* is

similarly regarded as an object that avails itself to modification, as Stelarc's arms and upper torso are voluntarily disabled for the purpose of allowing a computer-controlled exoskeleton to actuate the physical movements of these body parts. In turn, the freedom accorded to Stelarc's legs as they manipulate the floor sensors that exert a tangible influence on the electronic behaviour of the virtual avatar brings the voluntarily disablement of his upper body into stark relief.

Stelarc believes that what technology offers today is no longer just the extension of the body's operation in the world. With the advancement of medical science in recent decades, miniaturized technological devices can now be implanted into the human body, as evidenced by the electrode array that was directly connected to Kevin Warwick's nervous system in 2002. Such miniaturized prostheses are equipped with the capacity to communicate wirelessly with other digital devices, thereby augmenting the human being's ability to affect the world with minimal physical effort. "Technology," as Stelarc explains in an interview with Marquard Smith, "doesn't contain the body so much as become a component of the body. It's not so much an agent desiring to be invaded by technology but rather a body that positions itself to be indifferent to invasive probes" (2005: 232). A body that is "indifferent" to the invasive prodding of technology is one that avails itself to the prosthetic relation between the organic and the artificial with the censorial interventions of an autonomous agent. As the digital media theorist Anna Munster observes, "Stelarc follows the trajectory of the invasion of the body by technology, its emptying of agency, will and control as it becomes an interface for technology to redistribute and connect back into itself" (2006: 134). In *Movatar*, the human body serves as the site at which a virtual avatar endowed with artificial intelligence is able to enact its agency by actuating the arms and upper torso of the human host. Here, technology invades the body and manipulates its limbs, insofar as the body is capable of enacting the computer's agency in reality and complementing the cybernetic circuit between human and machine. At the same time, Stelarc holds the view that this

“emptying of agency” – to borrow Munster’s turn of phrase – in the interactions between the human body and its technological prostheses might also unleash a sense of freedom for the human subject, as it ponders over a cyborgian future that transcends the limits of biology.

“The fundamental freedom,” according to Stelarc, “is for individuals to determine their own DNA destiny” (1996: 19). Having the freedom to determine how the body should be modified would allow human beings to control their development in what Stelarc refers to as a “post-biological environment,” in which “[b]iological change becomes a matter of choice rather than chance” (1996: 19). Given the opportunity to choose how and when the body should be reconstituted, the evolution of the human being would cease to be an aleatory phenomenon but a regulated and customizable process facilitated by the interface between the human body and technological prostheses. “When we attach or implant *prosthetic devices* to prolong a person’s life,” Stelarc notes, “we have also created the potential to propel post-evolutionary development” (1996: 19). In presenting the evolution of the human body as a matter of choice, Stelarc imagines a future where the evolutionary processes in the body would no longer be dictated by biological factors and the natural environment but by the freedom to select the appropriate prosthetic devices required for the optimal performance of the body. Munster cautions that Stelarc’s notion of a post-biological future, “subtended by a developmental logic of evolution operating via choice, can land us back within the sphere of liberal subjectivity” (2006: 134). The human body as a readily modifiable object thus becomes the vacant site on which the autonomous agency of the liberal subject can be enacted through the interface between the organic body and a myriad of technological devices, including electronic implants.

In light of Stelarc’s treatment of the body as an objective entity with universal attributes that apply to all human beings, Munster believes that the artist “falls into the trap of thinking of bodies as ‘the body,’ in which only one speed – absolute velocity and/or absolute stasis –

unfolds” (2006: 134). Conceiving the human body through the binary distinction between mobility and immobility – or even between ability and disability – forecloses any attempt to consider the peculiarities of bodies that detract from the regularized attributes and behaviours of the objective ‘one-speed’ body. But such binary distinctions seem to fit well into Stelarc’s techno-dramaturgy. “What is important to Stelarc,” as Massumi elucidates, “is approaching the body as an object, in other words, as an objectivized sensible concept whose abstract mode is that of possibility. Stelarc starts at the end. He starts from the pole of possibility *as a limit*, the outside limit of the body’s functionality, its already-extension into the only-thought of instrumental reason” (2002: 102). Through the application of instrumental reason in his performances, Stelarc understands the body as “an impersonal, evolutionary, objective structure” (qtd. in Atzori and Woolford 1995). This impersonal and objective body may evolve over time, albeit through the facilitation of technological extensions rather than biological processes. Consequently, Stelarc’s instrumental treatment of the body disregards the subjectivity of each human individual’s embodied experience of the world, particularly if that individual possesses a disability that impacts the way that he or she relates to technological implements.

Working at the limits of possibility, Stelarc’s performance of *Movatar* presupposes a normative body with standardized architecture and functioning that can be exploited for a multitude of uses. In fact, the artist’s interest in testing the limits of the human body is epitomised by his suspension performances, as he suspends his naked body in midair using a hoisting mechanism comprising of metal cables and hooks that pierce right into his flesh.³⁷ As Massumi

³⁷ One of the most well known of these suspension performances was the “Street Suspension” piece that took place in New York City on July 21, 1984. In this performance, Stelarc’s naked body was suspended by metal hooks connected to a pulley system that connected two buildings on each side of the city’s East 11th Street. The artist’s body was pulled from a fourth floor window of one of the buildings to the middle of the street. Hovering above the throngs of curious pedestrians and vehicular traffic, the suspension performance lasted for twelve minutes (Stelarc “Street Suspension” 1984).

notes, Stelarc “assumes the body as a known object of instrumental reason with known, regularized functions of need and utility” (2002: 102). Subscribing to a normative conception of the body, which consists of a head, a torso, a pair of arms, and a pair of legs, Stelarc applies the instrumental logic of functional utility to the construction of the exoskeleton ‘motion prosthesis’. The result is a prosthetic device that can only be worn by people who possess a pair of arms – prosthetic or otherwise – to which the mechanical arms of the exoskeleton can be attached. And because these mechanical arms extend from a backpack containing an accelerometer and a set of proximity and tilt sensors, the ‘motion prosthesis’ is suitable only for people who have a straight back, and are capable of standing in an upright position.

Regarding the body as an instrumental object with a standard structure allows Stelarc to come up with concrete plans for redesigning the human body, a physical entity that he deems to be obsolete and biologically inadequate to cope with the rapid speed at which technology processes information. As Stelarc puts it, “we can’t continue designing technology for the body because that technology begins to usurp and outperform the body” (qtd. in Atzori and Woolford 1995). For this reason, he believes that the time has come to “design the body to match its machines,” even though the body in question is a normative one (qtd. in Atzori and Woolford 1995). However, as the performance theorists Rosemary Klich and Edward Scheer observe in their analysis of *Movatar*, “Stelarc is not referring to a concept of subjectivity in his work” (2012: 197). Rather, he is communicating “a model of the body as [...] an engineering entity” that is “always modifiable” (2012: 197). It does not seem to matter to Stelarc that his normative model of the body ignores the corporeal experiences of persons with disabilities, as his focus remains on how the human body can be extended by prosthetic devices to become ‘posthuman’. Yet he appears to hold on to a traditional humanist view of what it means to be human.

Responding to an interview question about the ‘humanness’ of persons with disabilities, many of whom require prosthetic devices to help them cope with the functions of daily life, Stelarc outlines his criteria for determining whether these individuals should be regarded as human subjects:

If you are sitting there with a heart pacemaker and an artificial hip and something to augment your liver and kidney functions, would I consider you less human? To be quite honest, most of your body might be made of mechanical, silicon, or chip parts and you behave in a socially acceptable way, you respond to me in a human-like fashion, to me that would make you a kind of human subject. (Stelarc qtd. Atzori and Woolford 1995)

It is worth noting that throughout the interview Stelarc does not explain what he means by suggesting that a person with prosthetic devices attached to his or her body needs to behave in a socially acceptable way or respond in a human-like fashion in order to be treated as a human subject. The use of such phrases as “socially acceptable way” and “human-like fashion” seems to preclude the possibility of deviating, whether deliberately or otherwise, from behavioural norms that have been sanctioned by a given society. While Stelarc may be willing to redesign the human body and to enhance its abilities, a trajectory that seeks to catapult the human being into the realm of the posthuman, his description of what constitutes ‘humanness’ reinforces the liberal humanist definition of the human being as an autonomous, self-determining entity. The implication here appears to be the following: as long as anyone with prosthetic devices attached to his or her body behaves and talks like most (normal) human beings do, that person will be considered, to use Stelarc’s turn of phrase, “a kind of human subject”.

Even though Stelarc’s definition of ‘humanness’ is fraught with ambiguity, it is his use of the verb ‘augment’ in describing the prosthetic devices that aid the functioning of the liver and

the kidney that best indicates his attitude towards the use of prostheses, which is to enhance the performance of the body and its constituent parts. By implying that the purpose of prosthetic devices resides in the augmentation of the body's functions, as opposed to helping people to cope with their ailments or disabilities, Stelarc seems to believe that everyone enjoys the luxury of choosing how and when they might require the use of prostheses. While it is clear that Stelarc's voluntarily disablement of his arms and upper torso in *Movatar* is intended to demonstrate that the human body is obsolete and is thereby in need of technological enhancement, the endeavour has inadvertently neglected the corporeal experiences of persons with disabilities who are oftentimes forced to replace a body part or a bodily function with a prosthetic device.

Yet all is not lost in Stelarc's performance of *Movatar*, as the critical potential of his techno-dramaturgy, however ambiguous it may seem, resides in his quest to explore the human body's relationship with cybernetic systems. Plugging his body into a computer system through a purpose-built exoskeleton 'motion prosthesis', Stelarc invites the audience members to think about the construction of the cyborg as a physical entity that seeks to overcome the limits of the human body – that is, to become *more than human*. There is an apparent anthropocentrism in his understanding of the cyborg, for the cybernetic systems deployed in his intermedial performances are rendered as the means towards the end goal of transcending the human body. As audience members, we are somewhat complicit in Stelarc's dream to become more than human. The theatre scholar Gabriella Giannachi sums up the audience members' relationship with Stelarc the cyborg performer as such: "in watching him, in participating in his bodily activity, we too become part of the post-human performance of 'Stelarc'" (2007: 69). In this way, Stelarc becomes more than a cyborg artist, but rather an embodiment of how the human body can be integrated into a cybernetic circuit with a virtual avatar imbued with artificial intelligence. It is possible that the audience members watching *Movatar* might perceive Stelarc's cyborg body as a

“posthuman” entity that has transcended the obsolescence of the human body. But questions remain as to what it means to be “posthuman” in the digital age, and how a posthumanist approach towards the body and the human being’s sense of embodiment might affect the audience members’ perception of human-machine interaction in intermedial performances, including those that feature persons with disabilities. Given Stelarc’s treatment of the human body as a malleable object that can be technologically modified and enhanced whenever one desires to do so (a perspective that inadvertently overlooks the subjective, embodied experiences of persons with disabilities who are more likely to *require* prosthetic extensions), it would be worthwhile to examine how able-bodied audience members might perceive the intersection of disability and technology in performance.

In order to address the question of the “posthuman” and its implications on our understanding of the body, I will be turning the focus of the next section towards some of the philosophical discussions pertaining to the concept of posthumanism and its treatment of the human experience of perception and embodiment. This philosophical interlude will lay the foundation for a deeper analysis of the relationship between disability, technology, and the figure of the cyborg in performance. Whereas Stelarc’s performance of *Movatar* appears to disregard the embodied experiences of persons with disabilities and the ways in which they interact with technology, there are performers with disabilities, such as Petra Kuppens and Neil Marcus, who have taken to the stage to explore the possibility of cyborg performance. These performers are also keen to explore the ways that the intersection of disability and technology in cyborg performance might affect the audience members’ embodied perception of human-machine interaction. The remaining portion of this chapter will be devoted to addressing these issues in greater detail. But first, I will look at Maurice Merleau-Ponty’s philosophy of perception before proceeding with a discussion of Cary Wolfe’s interpretation of posthumanism and its

implications on the way in which disability might be perceived in an intermedial environment, where persons with disabilities are seen performing alongside a variety of media technologies.

5.4 Embodied Perception and Performance: A Posthumanist Perspective

Merleau-Ponty's work on perception seeks to account for experience by analyzing the ways in which the human being perceives the world. He proposes that the world should be understood as a totality (*L'entourage*) of perceptible things that can be experienced and not as objects of the mind ("The Primacy of Perception" 1964: 16). Perception, as Merleau-Ponty understands it, is not an object of thought. Instead, he believes that the human being experiences perception and its horizon not by explicitly knowing them as preconceived objects but "in action" (*pratiquement*) – that is, by physically engaging with the environment (1964: 12). "To perceive," Merleau-Ponty contends, "is to render oneself present to something through the body. All the while the thing keeps its place within the horizon of the world" (1964: 42). Perception exists insofar as a subject is there to perceive the world. But this does not mean that the world exists only on the basis of perception, as thought does not precede the existence of the world. Rather, as Merleau-Ponty points out, "we can only think the world because we have already experienced it" (1964: 17). In other words, what is perceived is real for every subject that perceives it.

The reality of perception is crucial to how each subject perceives another in an inter-subjective relationship. As Merleau-Ponty explains, it is necessary that "in the perception of another, I find myself in relation with another 'myself', who is, in principle, open to the same truths as I am, in relation to the same being that I am. And this perception is realized" (1964: 17). In order for the inter-subjectivity of perception to work, all subjects must be open to the same truths of the world. There is no mediating language between different subjects that is capable of bringing their perceptions together. Instead, the inter-subjectivity of perception takes place

through the body as the field of perception and action. “From the depths of my subjectivity,” Merleau-Ponty notes, “I see another subjectivity invested with equal rights appear, because the behaviour of the other takes place within my perceptual field” (1964: 18). The inter-subjectivity of perception is therefore an inter-corporeal encounter between subjects that operate within each other’s perceptual field. But while the emphasis on the inter-corporeal dimension of perception may be illustrative of how subjects remain open to each other and to the world, Merleau-Ponty’s account of the inter-subjective relations between perceiving subjects appears to reiterate normative assumptions of perceptual functioning in able-bodied humans.

Recognizing the subjectivity of another being that is endowed with “equal rights” does not translate seamlessly into a respectful acknowledgement of other subjectivities, especially the subjectivities of nonhuman entities that may not be invested with those “equal rights” to which Merleau-Ponty alludes. The term “equal rights” is a slippery one, as it implies a hierarchy of entitlement of which some beings may be deprived on the basis of an anthropocentric view of perception. This issue of anthropocentrism is pertinent to our analysis of intermedial performance, as various forms of analogue and digital media technologies as well as performers with disabilities take to the stage to perform alongside able-bodied actors. Adding to the eclectic mix of media on the intermedial stage is the appearance of such trans-humanist performers as Stelarc, who, as we have seen, aspires to not only extend the physical and cognitive capacities of the human by means of technological prostheses but also supplant the role of the body in favour of a disembodied performance with technology. Such trans-humanist fantasies can influence the ways in which audience members perceive the state of human-machine interactions in intermedial performance, particularly as it pertains to the politics of embodiment. To understand how anthropocentrism might impinge on the emergence of embodied perception in intermedial performance, I turn to Cary Wolfe’s interpretation of posthumanism, in particular, his rejection of

the trans-humanist fantasy of disembodiment, as well as his inclination towards a non-anthropocentric consideration of embodiment and the multiplicity of perceptual modes among different autopoietic beings.

Trans-humanism, as its name suggests, is an aspiration towards the transformation of the human through the augmentation of its capabilities in a variety of domains, including cognition and physical mobility. Wolfe sees this movement as a descendent of what he calls ‘the cyborg strand’ of posthumanism, which seeks to overcome human mortality and deficiencies by technological means. The trans-humanist becomes ‘post-human’ on the basis of a radical transformation of the physical, cognitive, and emotional capabilities of the human being, to the extent that it emerges as a new being with characteristics and qualities that differ drastically from current definitions of human attributes. Citing the observation of the Swedish philosopher Nick Bostrom, Wolfe notes that the trans-humanist form of posthumanism “derives directly from ideals of human perfectibility, rationality, and agency inherited from Renaissance humanism and the Enlightenment” (2010: xiii). Wolfe takes issue with the liberal humanist perspective of the self-certain human being who is endowed with the unique capability to improve its intellectual and physical capacities through learning and the development of technical prostheses that extend its reach into the world. Because trans-humanism has its roots in rational humanism, the question of human agency comes, perhaps inevitably, into play.

According to Wolfe, humanism is very much its own dogma, complete with prejudices and assumptions about the constitution of the human in relation to other living beings. He contends, through the philosopher Etienne Balibar, that social Darwinism – an anthropological idea that has become synonymous with the naturalist maxim, ‘survival of the fittest’ – is paradoxical, in the sense that it extracts humanity from animality by drawing on the characteristics of animality that establishes a competitive ground between different degrees of

humanity (2010: xiv). Such competition between varying degrees of humanity is evidenced by the biotechnological practice of eugenics (that is, the manipulation of human reproductive capabilities for the purpose of fostering an ostensibly superior gene pool) since the time of the Victorian polymath and eugenicist Francis Galton to the United States-led Human Genome Project of the present day.³⁸ Taking as a basis the humanity/animality dichotomy that undergirds social Darwinism, Wolfe asserts that in the case of trans-humanism, what is considered ‘human’ in regard to the anthropological dogma of humanism “is achieved by escaping or repressing not just its animal origins in nature, the biological, and the evolutionary, but more generally by transcending the bonds of materiality and embodiment altogether” (2010: xv). As such, Wolfe suggests that trans-humanism constitutes “an *intensification* of humanism,” an anthropocentric perspective that his interpretation of posthumanism rejects (2010: xv).

Wolfe’s theory of posthumanism stands in contrast to the literary scholar N. Katherine Hayles characterization of the posthuman as the transcendence of human embodiment in her book entitled *How We Became Posthuman*. Alluding to Hans Moravec’s vision of information as pattern that floats freely across time and space without the need to ground itself in a particular instantiation, Hayles notes that for cyberneticists such as Moravec and Marvin Minsky, immortality will be attainable if humans become the information that they create, namely, by transcending “the material constraints that govern the mortal world” (1999: 13). Hayles makes the point that this dematerialized conception of information not only constructs an

³⁸ The term “eugenics” appears to originate from Francis Galton’s book entitled *Inquiries into Human Faculty and Its Development*, London: Macmillan, 1883. In this volume, Galton expresses a desire for “a brief word to express the science of improving stock, which is by no means confined to questions of judicious mating, but which, especially in the case of man, takes cognisance of all influences that tend in however remote a degree to give the more suitable races or strains of blood a better chance of prevailing speedily over the less suitable than they otherwise would have had. The word *eugenics* would sufficient express the idea” (24). What Galton means by eugenics is thus the development of the technological means used to manipulate and control the biological nature of human beings for broader socio-political purposes.

information/matter duality, but also reinforces the ideology of disembodiment that informs the thinking of Moravec and Minsky. Conceiving information without its material instantiations enables cyberneticists to imagine a future in which humans live as informational patterns, thereby abandoning (perhaps forever) the frailty and finitude of their bodies. Responding to this fantasy of disembodiment and dematerialization, Hayles sets out to consider what is “elided, suppressed, and forgotten” when information loses its body, and to do so by “putting back together parts that have lost touch with one another and reaching out toward a complexity too unruly to fit into disembodied ones and zeros [i.e., binary code]” (1999: 13). However, despite the lucidity of Hayles’ ambitions, which is to recuperate the material significance of the body in informatics, Wolfe claims that the critical tone of her project foregrounds a tendency to “associate the posthuman with a kind of triumphant disembodiment” (2010: xv). What Hayles wrongly assumes, in Wolfe’s view, is that the posthuman is synonymous with disembodiment. For Wolfe, the posthuman does not imply the transcendence of embodiment. Rather, it is ‘post-humanist’ – that is, what comes after Humanism and its definition of the human as autonomous and self-determining. In this sense, the posthuman should be seen as a response against the fantasies of a disembodied and autonomous way of being.

Far from being anti-human, posthumanism, as Wolfe clarifies, strives to demonstrate the ways in which the values and aspirations of humanism are undermined by the philosophical and ethical frameworks that conceptualize them. His contention is that the philosophical and theoretical frameworks used by humanism to emphasize the values of respect and equality towards nonhuman animals and persons with disabilities tend to reproduce the normative subjectivity that grounds discrimination in the first place (2010: xvii). Wolfe emphasizes that any notion of the posthuman should not be reduced to standards and patterns that serve merely as an extension of human subjectivity. This is why he finds problematic Hayles’ description of

mutation as an external force that imposes changes on a stable pattern or code, as well as the material world or body. Hayles' interpretation of mutation as "the bifurcation point at which the interplay between pattern and randomness causes the system to evolve in a new direction" assumes a distinction between matter and information (1999: 33). Mutation, as Wolfe points out, cannot be understood through the dialectic between pattern and randomness, whereby each stage in a system's evolution is marked by a rupture from which a new pattern emerges against a backdrop of randomness. Instead, what is needed is a concept of the posthuman that is premised upon an understanding of mutation (in both human and nonhuman systems) as an immanent and ongoing process rather than an expression of code or informational pattern (2010: xviii).

Wolfe's understanding of mutation as an ongoing process that is intrinsic to a particular system appears to correspond with Francisco Varela's notion of 'embodied cognition', which describes the way in which the experiences of an organism are shaped by its embodied actions in the environment. According to Varela, the development of any self-generating organism, be it human or nonhuman, is contingent on its interactions with the environment in which it emerges as an individual. This coupling between an embodied organism and its environment is pertinent to our investigation into the operation of embodied perception. But in resisting an anthropocentric conception of perceptual modes, we would do well to consider what Varela and his former mentor, Humberto Maturana, term the 'embodied enaction' through which each autopoietic organism (i.e., a self-generating form of life) brings forth a world that is different from that of another autopoietic being. As Varela explains in his treatment of embodied cognition, "organism and environment enfold into each other and unfold from one another in the fundamental circularity that is life itself" (1996: 217). What this means is that a structured coupling between organism and environment ensues amid the co-emergence of the self-generating entity and the world with which it interacts, as one cannot exist without the other. For this reason, Wolfe

suggests that if we were to accept that various autopoietic forms of life – including nonhuman animals, persons with disabilities, as well as able-bodied people – bring forth a world that is different for each living being, “then the environment, and with it ‘the body,’ becomes unavoidably a virtual, multidimensional space produced and stabilized by the recursive enactions and structural couplings of autopoietic beings who share what Maturana and Varela call a ‘consensual domain’” (2010: xxiii-iv).

While the virtual and multidimensional qualities of the world might serve to increase the autopoietic system’s connection and sensitivity to the environment, the sharing of a ‘consensual domain’ among all autopoietic beings, including humans and animals, affords the possibility of recasting the notion of embodied perception in a non-anthropocentric light. Wolfe’s interpretation of posthumanism seeks to rethink such modes of human experience as “the normal perceptual modes and affective states of *Homo sapiens* [...] by recontextualizing them in terms of the entire sensorium of other living beings and their own autopoietic ways of ‘bringing forth a world’” (2010: xxv). This repositioning of the human within the shared domain of autopoietic, self-generating systems offers us an opportunity to critically reflect on the roles that different autopoietic entities – both human and nonhuman – play in an intermedial performance context. The key point here is to adopt an attitude of openness towards the multiplicity of perceptual modes and subjectivities within the ‘consensual domain’ shared by different autopoietic beings, which may include nonhuman machines as well as human individuals who happen to possess a disability. At the same time, we should note that Wolfe’s reading of posthumanism also acknowledges the fundamental prostheticity of the human in its coevolution with various forms of technicity and materiality that are radically ‘not-human’, including the language that we use to communicate with one another as well as the media technologies employed in intermedial performances (2010: xxv). As Wolfe explains, “the human is itself a prosthetic being, who from

day one is constituted *as* human by its coevolution with and coconstitution by external archival technologies of various kinds – including language itself as the first archive and prosthesis” (2010: 295). Language as prosthesis exteriorizes and archives the thoughts and memories of the human animal through speech and writing. In turn, the perception of linguistic meaning in speech and writing is modulated by the embodied communicational encounters between different human individuals, whose facility for language may vary in relation to their physical and cognitive conditions and other environmental factors that may affect their speaking and comprehensive abilities. Hence, a posthumanist understanding of embodied perception would entail a critical awareness of the interactions between technics, the human, and the environment.

Having a critical awareness of the embodied interactions between technics, humans, and the environment is useful in terms of analyzing how intermedial performances, including those that feature performers with disabilities and their interactions with technological implements in a theatrical milieu, might influence the audience members’ perception of embodiment vis-à-vis human-machine relations. As cyborgs in performance, performers with disability turn to technology in order to challenge the normative perception of embodiment and subjectivity by articulating the creative potential of the disabled body. What follows is an exploration of how Petra Kupperts and Neil Marcus fashion a cyborgian identity through the recitation of original poetry about their experience with disability and through the use of 3D tele-immersive motion capture technology to articulate the expressive potential of their bodies in *Cripple Poetics: A Love Story*.

5.5 *Cripple Poetics: Disability, Technology, and the Cyborg in Performance*

How do performers with disabilities engage with the idea of the cyborg in performance? What happens when the disabled body performs with digital technology on the stage? And if

theatres had eyes, what kind of body would they see? The theatrical gaze of the human body presupposes a concept of neutrality, which Carrie Sandahl calls “the tyranny of Neutral,” whereby the peculiarities of the actor’s body are moderated, if not standardized, through a rigorous regime of physical conditioning. In an art form that seems to expect a high degree of kinaesthetic involvement from its practitioners, it would appear that the practice of theatre is inherently biased towards the able-bodied actor. But in spite of the perceived abjectness of the disabled body, persons with disabilities do engage in artistic creation, and such efforts include performances that explicitly incorporate digital technology. It is thus important to look at the ways in which disabled performance artists interact with digital technology in such aesthetic endeavours as Petra Kuppers’ production of *Cripple Poetics: A Love Story*. Kuppers’ project is an intermedial performance in which two actors with physical disabilities recite love poems to each other while performing alongside the 3D tele-immersion display of their virtual selves engaging in a dance routine. Drawing on Donna Haraway’s conceptualization of the cyborg as an idea of transgressed boundaries and Allucquère Rosanne Stone’s examination of the ways in which modern technology challenges the definitional boundaries of social identities, I argue that cyborg performance is not simply a fusion of body and technology. Rather, it embraces the cyborgian identity of disabled performance artists who perform at the border between “ability” and “disability,” particularly through their use of digital technology to subvert the social and cultural boundaries that curtail the physical and cognitive potential of the disabled body.

From the perspective of medical science, the physical and cognitive potential of the disabled body appears to be conditioned by what Michel Foucault calls “the clinical gaze.” According to Foucault, the clinical gaze requires an organization of space in order to discriminate between the different inhabitants in any given society. To this end, the people living in that society are transformed into streams of information, as their bodies are divided into such neat and

distinct categories as “able” or “disabled”. Thus, the clinical gaze, as Foucault theorizes it, seeks to medically define the body as able or disabled in a neutral domain that is “homogenous in all its parts and in which comparison is possible and open to any form of pathological event, with no principle of selection or exclusion” (2003: 134). It is only in the supposedly “neutral” domain of the clinic that the attributes of a particular body can be compared to those of another body. In a similar fashion, the theatrical gaze of the body also presupposes a concept of neutrality that determines its suitability for performance. This emphasis on the neutrality of the body is what Carrie Sandahl terms “the tyranny of Neutral,” whereby the actors’ bodies are “stripped of individuality and idiosyncrasy” through an arduous regime of physical training (2005: 262). It is only when the performing body is deemed capable of manifesting the neutral metaphor that a character can be built upon it.

The tyranny of Neutral in theatre practice is predicated upon the medical view of disability, whereby the “fitness” of the actors’ bodies is measured in terms of its capacity to be cured of any physical or emotional infirmity. Such an understanding of the performing body presupposes a normative standard that privileges the *ability* of the actor to seamlessly balance and control his or her body in an efficient manner. In other words, the actor’s body has to be capable of being stripped down into a state of neutrality in order for it to be visually suitable for the performance of a variety of different characters. I should note that the tyranny of the Neutral in theatre practice is not a performance of neutrality. Rather, the purpose here is to build a performance *from* a state of neutrality. As Sandahl explains:

Implicit in the various manifestations of the neutral metaphor is the assumption that a character cannot be built from a position of physical difference. The appropriate actor’s body for any character, even a character that is literally

disabled or symbolically struggling, is not only the able body, but also the extraordinary able body. (2005: 262)

There is a tendency among some theatre directors to assume that only the “extraordinary able body” is capable of delivering a good performance. This aversion towards physical difference seems to feed on the fear that an actor with a disability might not be able to fully comprehend and accurately execute the director’s instructions for playing a particular character, regardless of the fact that the character may be “literally disabled or symbolically struggling”. Such apprehension towards the suitability of persons with disabilities as actors in the theatre is further complicated by the inclusion of technological devices (both digital and analogue) into the performance.

Commenting on the interplay between technology and performance, Christopher Baugh observes that technological devices employed on theatrical stages have shifted from a “means to an end” to “ends in themselves” (2005: 1). Over the past two decades, digital technology has emerged as an important player in contemporary theatre. No longer can we regard technology – be it analogue or digital – as the hidden machinery that supports the creation of the theatrical *mise-en-scène*. Instead, technological devices are now incorporated into the performance itself, as the human actors interact with them in a manner that is imbued with symbolic and phenomenological significance; symbolic because the interactions between humans and technology in the theatre could be read as a commentary on the quotidian relationships that we share with our cellphones, mobile computers, and – even though we may not be conscious of it – the Internet. But the phenomenological significance of the interactions between the actors and the technological devices employed in the performance seems to tend towards the experience of bodies (both human and non-human) as lives in the theatre. Theatre, as Alan Read reminds us, is fundamentally about lives – the lives of people and cultures portrayed by living actors, as well as the oftentimes overlooked lives of the technological implements that partake in the production of

the performance event. As the lives of human and non-human bodies intersect on the same stage, theatre becomes what Read describes as “the phenomena of life itself [...] that negates the boundaries that customarily divides disciplines and fields” (2008: 100). If this dissolution of disciplinary boundaries in the theatre does hold true, then might it be reasonable to assume that theatre offers a suitable medium through which to explore the subversive potential of cyborgian identity, particularly as it pertains to the lives of persons with disabilities?

Who or what is the cyborg? As the theatre scholar Jennifer Parker-Starbuck points out, metaphorically speaking, the cyborg is politically resistant (2011: 1). The cyborg is a provocative yet evasive concept that shape-shifts through history in order to suit the needs of the time. Making its debut in Donna Haraway’s controversial 1985 essay, “A Cyborg Manifesto,” the cyborg as a concept serves to interrogate the binary oppositions that dominate women, people of colour, nature, workers, and animals. Haraway argues that the cyborg is an idea of “transgressed boundaries, potent fusions, and dangerous possibilities which progressive people might explore as one part of needed political work” (1991: 154). However, the cyborg is not purely a metaphorical concept. In her study of cybernetics and posthumanism, N. Katherine Hayles distinguishes between what she calls “actual cyborgs” (people fitted with pacemakers, for example) and the “metaphoric cyborg,” as exemplified by the video game player whose body is incorporated – albeit temporarily – into the cybernetic circuit of the gaming console. Building upon Haraway’s description of the cyborg as a “cybernetic organism, a hybrid of machine and organism,” Hayles maintains that cyborgs are at once entities and metaphors, living beings and narrative constructions (1999: 114). Through the fusion of imaginative significance with literal physicality, humans and machines are spliced together in an integrated circuit that produces the cyborg as a material actuality and a metaphorical construct. For Haraway, the cyborg is a chimera – it is an ironic yet utopian being made from actual and symbolic parts. But what role can the

cyborg play in the theatre? How does its chimeric quality affect the ways in which performance is conceived and experienced? What is Cyborg Theatre?

According to Parker-Starbuck, Cyborg Theatre “differentiates itself from other labels in that it encompasses a range of permutations from the ‘low-tech’ to a complex and integrated cyborgian performance [sic]” (2011: 6). As an inclusive approach towards theatre practice, Parker-Starbuck’s idea of Cyborg Theatre embraces many forms of technological performance in which many types of media are also incorporated (2011: 7). Petra Kuppers’ 2010 production of *Cripple Poetics: A Love Story* is one such performance in which disabled performance artists interact with such technological implements as a wheelchair as well as 3D tele-immersive motion-capture and projection while harnessing the expressive powers of poetry and dance. Kuppers is a professor at the University of Michigan at Ann Arbor and the Artistic Director of the arts collective, *Olimpias*, which she describes as a ‘laboratory of disability culture’ (2011: 2). The name ‘*Olimpias*’ conjures the image of ‘limping gods’, which seems to resonate with the fact that this art collective comprises a group of talented disability performers (2011: 9). In her book, *Disability Culture and Community Performance: Find a Strange and Twisted Shape*, Kuppers remarks that the field of performance studies has historically lacked a method for “talking about this kind of performance work [i.e., disability performance] in ways that do not fall into celebration, sentimentality, or narcissism” (2011: 62). As a disability scholar and performance artist, Kuppers seeks to interrogate the social and political challenges that affect persons with disabilities by pushing the limits of creative expression in the theatre. To this end, she integrates such expressive modes as poetry recitation and dance into the fabric of theatre performance.

In *Cripple Poetics*, Kuppers takes this interdisciplinary approach further by employing 3D tele-immersive motion-capture technology in the recording of the dance that she and her partner, Neil Marcus, performed at the University of California, Berkeley. “Teleimmersion,” as the

computer engineers Gregorij Kurillo and Ruzena Bajcsy elucidate, “is an emerging technology that enables users to collaborate remotely by generating realistic 3D avatars in real time and rendering them inside a shared virtual space” (2013: 29). The three-dimensional (3D) tele-immersive footage of Kuppens and Marcus’s dance routine was captured using a customized 48-camera array at Berkeley’s Tele-immersion Lab. Marcus is an actor, a dancer, and a poet who happens to live in Berkeley. He has dystonia, a neurological movement disorder, whereby the sustained contraction of muscles causes the painful twisting of the body. Kuppens and Marcus’s relationship began when they communicated virtually by way of Instant Messaging (IM). After exchanging messages online for several months, they finally met in person at a dance workshop in Berkeley. *Cripple Poetics* captures the evolution of this relationship, as Kuppens and Marcus exchanged messages and poems that expressed their thoughts and fears about being disabled and in love with each other. First performed in 2010 at the University of Michigan, the production consists of three poetic performances by Kuppens and Marcus. On a screen at the back of the stage, 3D tele-immersive images showing the both of them engaging in a series of circular dance movements appear whenever one poem ends and another one begins. All three poems in *Cripple Poetics* allude to the cycles of birth and rebirth, as the continuity of life that is articulated through the poetic language of the performance is mirrored by the virtual traces of two dancing bodies – Kuppens and Marcus – projected on the screen.

Commencing right after the appearance of the 3D tele-immersive images of Kuppens and Marcus’s dance, the first poem, “Metaphor of Wind in Cripple Poetics,” alludes to the interplay between movement and nature, with deep connections to the creation of a cripple poetics that is “not extraordinary or ordinary” (Kuppens and Marcus 2008: 7). Resisting the characterization of the body as a conglomeration of medical parts, the poem juxtaposes the natural force of the wind with the human body as a living entity made up of flesh and bones. Just as the wind is capable of

acting upon the flower, thereby allowing it to spread its seeds across the vastness of space, the flesh and bones of the human body can be mobilized into action through its engagement in wild salsa dances. As Marcus proclaims in the poem: “There is always wind in my cripple” (Kuppers and Marcus 2008: 7). Without the possibility of movement, be it metaphoric or physical, the cripple body will remain stark and pathetic. In order to aspire towards metaphorical and physical movement, Kuppers and Marcus partake in the labour of poetic performance. For them, the act of performing poetry engenders the possibility of finding a cripple poetics through the interplay of language, experience, and the human senses (Kuppers and Marcus 2008: 112).

Poetic performance is an embodied endeavour that requires the movement of the eyes as the actor reads the words on the printed page, as well as the activation of the mouth and the vocal chords that renders those words audible. It is through the simultaneous movement of eyes and mouth in the act of recitation that Marcus is able to perform the second poem, “I am Salmon,” which recounts a visit that he made as a child to the aquarium in San Francisco, where he watched schools of salmon returning to their birthplace in order to reproduce. At the same time, the same 3D tele-immersive images of Kuppers and Marcus’s dance that greeted the audience at the beginning of the play, braids through the recitation of this poem of rebirth. The tele-immersive images projected on the screen in the background depict the syncopated motion of Kuppers and Marcus’s bodies. Whenever Marcus falls to the ground, Kuppers would pick him up and hug him. The images appear fuzzy and fragmented at first. But in spite of the visual distortion, we can still see the colourful traces of Kuppers and Marcus’s bodies on the screen. As their bodies coalesce in a courtship dance that resembles the flowing movements of a jujitsu master, sounds of birds chirping and flowing water can be heard in the background.

By drawing on the affordances of 3D tele-immersive technology, which captures and projects the performance of their dance routine, cyborg performance in *Cripple Poetics* becomes

a ritual of rebirth. Whereas their in-real-life (i.e., materially and in the flesh) performance seems to be restricted by their disabilities, particularly in terms of mobility, the tele-immersive technology offers Kuppers and Marcus the opportunity to represent themselves differently in a virtual space. As cyborgs in performance, Kuppers and Marcus experience a rebirth through their simultaneous existence in both the physical and virtual realms of the performance. But in order for the audience members to perceive the tele-immersive images employed in *Cripple Poetics* as socially meaningful, they must be warranted to the physical bodies of the human actors on the stage. In other words, the cyborg does not exist merely as a figure of discourse. “By means of warranting,” as the new media theorist Allucquère Rosanne Stone explains, “this discursive entity is tied to an association with a particular physical body, and the two together, the physical and the discursive, constitute the socially apprehensible citizen” (1995: 41). Warranting implies a link between the virtual body and the convergences of discourses that constitute the body in physical space. These discourses may also include non-linguistic gestures that lend meaning to the human body in performance.

Consider, for example, the scene in which Kuppers performs a poem from her wheelchair, while Marcus stands behind her and reads the same poem. They embrace at one point, and when Kuppers leaves her wheelchair and sits on the floor, Marcus decides to join her. Amid the seemingly voyeuristic gaze of the audience members, they kiss. As their dance routine unfolds on the tele-immersive display in the background, Kuppers and Marcus partake in a material engagement that does not dispense with the visceral character of physical intimacy. Drawing on the expressive potential of tele-immersive technology, a performative conversation emerges between the in-real-life performance enacted by Kuppers and Marcus and the tele-immersive images that capture the colourful traces of their dance routine. However, we should not assume

that such interactions between humans and technology would entail the actual fusion of bodies with the machine.

Reacting against the notion of “cyborgian fusion,” Anna Munster posits a differential topology between virtual systems and human bodies by arguing that all human-machine interfaces contain points of connection and separation. Munster believes that the digital enables a relational experience of the movement of the human body. However, she acknowledges that while such an experience is not “of itself corporeal,” it does involve a “capacity for being affected by the diverse speeds, rhythms and flows of information” (2006: 33). For this reason, Munster does not see the virtual as a dematerialized abstraction, but rather “a movement that passes from the abstract incorporeal spaces of information to the concrete actuality of the body” (2006: 17). In this sense, the human body is never completely immersed in the virtual world of information systems, as a “differential interval” continues to exist between the human being and the virtual environments with which it interacts. The maintenance of such a differential interval between the physical and the virtual serves as a reminder of the corporeal relations that characterize the intermedial activities in cyborg performance.

As Jennifer Parker-Starbuck notes, the human bodies in cyborg performance are conceptually mediatized ‘living figures’; they are “[I]iving bodies as opposed to the cinematic or projected figures and technologies with which they co-habit the stage” (2011: 9). The tele-immersive images in *Cripple Poetics* are not alive in the same way that Kuppers and Marcus are alive in the biological sense. Cyborg performance does not involve the treatment of the human being as a machine nor does it imply that the machine employed in the performance should be humanized in order for the human actors and audience members to treat it with care and respect. Kuppers and Marcus, as cyborgs in performance, do not fuse their bodies with the machine. Instead, cyborgs are what Rosanne Stone calls “boundary creatures”; they are “not only

human/machine” – with the splice indicating an intersection rather than a fusion of human and machine – “but creatures of cultural interstice as well” (1995: 178). In their capacity as creatures of cultural interstice, cyborgs harbour the potential to undermine the societal boundaries that inhibit their participation in mainstream society. These boundaries may exist in institutions like governments that prohibit persons with disabilities from taking public office or among certain social groups that exclude, whether consciously or otherwise, anyone who possesses a physical or cognitive disability.

As cyborgs in performance, Kuppers and Marcus deploy a techno-dramaturgy that puts forth a critical perspective on the interface between disability and digital technology. The ‘critical’ element in such a techno-dramaturgical approach resides in its capacity to subvert the normative social attitudes that threaten to suppress the expressive rights of persons with disabilities. This subversive potential reaches its zenith during the final poetic performance in *Cripple Poetics*. As with the recitation of the preceding poems, the tele-immersive images of the dance routine provide a frame for the performance of the third poem entitled “At the Gynecologist.” This poem tells the story of Kuppers and Marcus’s visit to the gynaecologist. While conducting an ultrasound scan of the foetus, the doctor intimates that the baby might resemble Marcus, who has dystonia. It is at this point that the poem makes mention of the nineteenth-century eugenicist, Francis Galton, whose philosophical position concerning disability is embodied by the phrase “galvanized knowledge” (Kuppers and Marcus 2008: 100). The phrase alludes to Galton’s Victorian justification of eugenics as a legitimate scientific practice, an attitude that seems to inform the gynaecologist’s advice to Kuppers: “You might not want children,” says the doctor (2008: 100). In response to this cautionary note, Kuppers remarks that Schrödinger’s cat resides in her womb, an ironic reference that foregrounds the suspended medical status of her unborn child who seems to be dancing on the porous border between

“ability” and “disability”.³⁹ Indeed, until the child is born, her exact medical status remains elusive. However, it is the use of pre-natal ultrasound scanning technology – or what Kuppers calls “eugenic technology” – to interpret the medical status of the foetus that reaffirms the disciplinary power of the clinical gaze (2008: 100). Consequently, in attempting to undermine and resist this deterministic injunction against the reproduction of what is perceived to be a “disabled” and abnormal body, Kuppers and Marcus turn to 3D tele-immersion as a means by which to open up the path towards a cyborgian rebirth.

We have seen how the intersection of poetry and dance in *Cripple Poetics* embodies the interplay between disability, technology, and the cyborg in performance. Rather than a straightforward recitation of poems written by their own hand, Kuppers and Marcus chose to weave a set of tele-immersive images depicting their dance routine into the fabric of their in-real-life poetic performances. The 48-camera array at Berkeley’s Tele-immersion Lab allowed for the all-round recording of physical movements from multiple angles. Such a setup rendered the performers’ dance routine as three-dimensional (3D) digital images rather than a two-dimensional (2D) video footage. By turning to 3D tele-immersive technology, which captured their dance routine as colourful virtual traces, Kuppers and Marcus could dance in an intimate fashion within a virtual environment. Through this suturing of physical and virtual performances, Kuppers and Marcus manage to forge a cyborgian identity that does not entail the fusion of body and machine. Instead, by dancing within the interstitial spaces where materiality and virtuality intersect, Kuppers and Marcus’s cyborgian existence in the performance subverts the social and political boundaries that threaten to curtail the physical and cognitive potential of persons with disabilities.

³⁹ This eponymous cat refers to the feline in Erwin Schrödinger’s twentieth-century thought experiment, which postulates that a cat hidden in a box is suspended ambiguously between live and death until a human person observes it to confirm its status. The use of pre-natal ultrasound to locate medical defects in a foetus mirrors Schrödinger’s experiment by situating the nascent being in a liminal state of existential ambiguity. As soon as the ultrasonic scan is administered on the foetus to verify its medical status, its existence is already arrested by the spectre of death.

But how does the interface between performers with disabilities and the various technological prostheses that they employ in the production of cyborg performance facilitate the articulation of the disabled body as an embodied creative subject? In light of the juxtaposition between the physical and virtual bodies of Koppers and Marcus in *Cripple Poetics*, I will look at the ways in which the prosthetic relations between performers with disabilities and the tools (both digital and non-digital) that they employ on the intermedial stage might influence – and potentially challenge – the audience members’ perception of disability and the disabled body in performance.

5.6 Creative Prostheses and the Embodied Articulation of Disability

Whenever we think of prostheses, images of artificial limbs and various types of mobility support devices such as a walking cane or an electric wheelchair are likely to spring to mind. Such images of artificial extensions to the human body and its field of operation are pertinent to most discussions about disability and the plight of human individuals who happen to possess it. But apart from the supportive role that prostheses play in facilitating the daily functions of persons with disabilities, what seems to be taken for granted is how technological implements, which may range from digital video projection and emails to the natural languages that we use to communicate with one another, are considered prosthetic devices that participate in the creative processes of human artistic production. Prostheses, as the philosopher David Wills contends, “make explicit the very break that constitutes the human body” (1995: 246). Wills describes this constitutive break of the human body as “the mechanist rupture” that embodies the human being’s “relation to and dependence upon the inanimate, the artificial” (1995: 246). The human body is therefore a prosthetic body that relies on technological implements – in essence, “the inanimate, the artificial” – for its survival, as evidenced by the fabrication of tools for hunting, cooking, and construction throughout the course of human history.

According to Wills, the prosthetic body, which “will necessarily be infirm, or lacking, in need of the other,” should not be understood as “an exception but the paradigm for the body itself” (1995: 135-7). The infirm, prosthetic body has to depend on other nonhuman, artificial entities in order to subsist. As Stiegler puts it, the human being is always already technical, as “what is specific to the human is the movement of putting itself outside the range of its own hand” (1999: 146). Reaching beyond the limits of its hands, the human being invents tools and is thereby engaged in a co-evolutionary relationship with technology, which includes the languages that mediate the communicational encounters between individual humans. In this way, the hand and the tool are implicated in a prosthetic union that not only extends each other across space and time but also opens up the possibility of devising communicative gestures. Stiegler surmises that if Leroi-Gourhan’s paleontological claim that “the hand frees speech” holds true, then “language becomes indissociable from technicity and prostheticity” (1999: 145). Language as prosthesis exteriorizes the thoughts of human beings through speech, and subsequently through writing, just as the fabrication of tools, from the spear to the laser-guided missile, extends the range of the body’s activity in the world. In analyzing the transformation of the human into a technological being, David Wills suggests that what he calls the “dorsal turn,” which is a technological turn that begins in the back (in the dorsal spine to be exact), “involves, finally, a turning back to language as primary technological system” (2008: 15). However, Wills is quick to emphasize that language functions not as an instrument to technology, or as “words processed by that technology,” but rather as a “technologized language” through which “an ethics, politics, or sexuality of technology” can be conceptualized (2008: 15). Language as technological prosthesis is more than a means by which to articulate our thoughts, for it allows us to *think back* on what it means to be a technological being. It is in this way that language, which emerges out of the human quest to reach beyond the range of its own hands, is constitutive of human technicity.

In *Cripple Poetics*, Kupperts and Marcus turn to the digital projection of 3D tele-immersive images that capture their dance routine and the recitation of poetry as prosthetic devices – or what I call *creative prostheses* – that enable them to express themselves as performers with disabilities. Far from negating the role of the body in intermedial performance, these creative prostheses complement Kupperts and Marcus’s effort in articulating their experiences with disability through the intersection of pre-recorded digital imagery, live poetry recitation, and the embodied actions of their disabled bodies. As I have discussed in Chapter 1, the embodied actions of the performer in theatre performance assume an ostensive relation to the language that he or she uses in communication with other performers and the audience members who witness the dramatic events unfold. While language as prosthesis can serve to clarify or contradict the embodied actions of the performer, these actions can also complement or complicate the performers’ speech. As the disability scholar Jay Dolmage notes, “prosthesis fuses linguistic and corporeal supplementarity in our embodiment, as beings with a grammar and biology, an idiom and anatomy” (2014: 107). With the aid of stage props such as walking canes and even laptop computers, performers strive to articulate meaning through the braiding of speech, embodied action, and technological devices. But this articulation of meaning by way of linguistic and non-linguistic prostheses is also an articulation of what Dolmage terms “imperfect meaning,” especially as the “fragmentation and incompleteness of discourse mirrors [...] the malleability of the body” that is always already divided and partial (2014: 107-8). It is precisely because the body and its boundaries are malleable – be it as a result of surgery or organic development – that the notion of a unified and natural body is rendered problematic, for the presumed wholeness of the body is frustrated by the non-linear and fragmented quality of linguistic discourse.

The discursive prosthesis, as David Wills points out, is subject to discontinuity, insofar as “the discourse that can be called prosthetic” is “characterized by the limp or zigzag and by an iambic rhythm,” that is, a syncopated progression that departs from linearity (1995: 25). Linguistic discourse moves not in a straight line but in a zigzag motion that is “perhaps not structurally different from a natural gait,” which entails the bidirectional ambulation of the body that propels itself forward by moving sideways at the same time (1995: 25). As such, Wills claims that the zigzag movement of linguistic discourse, which resembles the “natural gait” in its bidirectional ambulation, constitutes “an explicit infraction upon or departure from the straits of linearity” (1995: 25). In light of Wills’ characterization of the structural similarities between the seemingly “natural” gait of the human body (an assumption that I will revisit later in this section) and the non-linearity of linguistic discourse, Dolmage makes the point that “our bodily imperfections are ineluctably tied to our embodied communication, our embodied knowledges” (2014: 108). The way that we acquire knowledge and communicate that knowledge is conditioned by the way that we experience our embodiment and the imperfections that are inherent in our bodies. For Koppers and Marcus in *Cripple Poetics*, their embodied experiences with disability become the ground upon which the poetic depiction of their life stories and the digital rendering of their dance routine are created through the prosthetic facilitation of language and 3D tele-immersion motion capture technology. There is no overarching narrative in the performance to direct the audience members’ attention, as the three poems are presented without any explicit attempt to explain their connection to one another. Instead, each poem exists as a fragment that is framed by the tele-immersive images of Koppers and Marcus’s dance routine. But while the poems are recited in full, the audience members are privy to only a snippet of the pre-recorded dance routine whenever the blurry tele-immersive images appear on the projection screen. This disjuncture between the apparent completeness of poetic language and the blurriness

of the digital imagery is mirrored by the qualitative difference in the manner in which Kupperts and Marcus recite the poems.

Whereas Kupperts' speech is clear and eloquent throughout the performance of *Cripple Poetics*, Marcus's recitation of the poems is slurred and halting. His fragmented speech echoes the imperfections of his body, which bears the marks of dystonia. Yet despite the muscular contortions on his back and around his face, which affects his hand movements and his speech, Marcus continues to recite the poems alongside Kupperts. And as if to complement the eloquence of Kupperts' speech, he wraps his body around hers, resting his head on her shoulders as she speaks. During the performance of the second poem, "I am Salmon," Marcus crawls around Kupperts, who speaks while seated on the ground. The poem recollects Marcus's childhood visit to a counselling group in Seattle with his father, a scene that is juxtaposed with the memory of a visit to the aquarium in the same city. These two places are markers of self-discovery for Marcus. At the counselling group, a counsellor shows him that he is worthy of being loved, and is capable of loving. At the aquarium, Marcus is seen in public for the first time. As he watches a school of salmon swimming behind the window of the tank, he discovers an affinity with the fish. A sense of freedom washes over him at the aquarium, and this is the feeling that he tries to recapture in *Cripple Poetics* by crawling about on the ground like a salmon attempting to swim back out into the vast embrace of the ocean. But midway through Kupperts' recitation of the poem, the tele-immersive images depicting her dance with Marcus re-emerge on the projection screen. This time, the digital imagery of their dance routine reflects their movement from an upright position towards the ground, rolling from side to side on the floor as they help each other to recover from the fall. At this point, both the physical bodies of the performers and their virtual doubles in the tele-immersive footage are similarly in touch with the ground. Such is the common ground that connects the physical with the virtual, the organic with the artificial, and the body with the

prosthetic. However, Kuppers and Marcus's use of poetry and tele-immersive imagery as creative prostheses for the articulation of disability also reveals that the human body is always already partial and incomplete, or as Wills puts it, "infirm, or lacking, in need of the other" (1995: 137).

Acknowledging the imperfection of the human body, including its physical vulnerability and mortality, Kuppers and Marcus's techno-dramaturgy in *Cripple Poetics* does not aspire towards perfection. Instead of hiding the febleness and vulnerability of their bodies, they present themselves as human beings who depend on prostheses to perform the functions of daily life (the wheelchair to facilitate Kuppers' mobility and close captioning technology to accommodate Marcus's speech impairment). And rather than adopting a utilitarian or an instrumentalist approach towards the employment of prostheses, Kuppers and Marcus turn to such prosthetic devices as poetic language and tele-immersive imagery in helping to articulate their embodied experiences with disability. Their decision to turn to these creative prostheses does not necessarily imply that their physical bodies have become, to invoke Stelarc's terminology, 'obsolete'. By foregrounding the prosthetic relations between their imperfect bodies and the creative prostheses that linguistically and visually articulate their embodied experiences with disability, Kuppers and Marcus's intermedial performance frustrate the presupposed unity and completeness of the human body. As Dolmage observes, "when the prosthetic is seen as an added part of the body (or as a discursive addition to the word or the speech), the prosthetic then revokes the surety of wholeness and naturalness as given" (2014: 108). In turning towards the prosthetic, the human body can no longer be understood as the sum of its parts. "Prosthesis," Dolmage goes on to explain, "emphasizes the obliqueness of thought and suggests that the disabled body is the engine for the creation of meaning" (2014: 108). However, this meaning that the disabled body creates through its relationship with the prosthetic appears to tend towards what Dolmage refers to as "imperfect meaning".

In *Cripple Poetics*, the creation of this imperfect meaning eludes linearity and normative logic, as the fragmentary braiding of poetry and pixelated tele-immersive images of disabled bodies dancing in syncopated motion seems to demonstrate. Through the use of these creative prostheses, Koppers and Marcus endeavour to articulate what it means to possess a disability, and to convey that meaning, however imperfect, to the audience members. This conveyance of imperfect meaning by artificial means – i.e., through poetic language and digital imagery – exposes what Dolmage considers to be the human unwillingness to “admit that our knowing of the world is fragmented because our knowing of our bodies and therefore ourselves is fragmented – or, rather, relies on constant augmentation” (2014: 110). Most of us might be inclined to think that only persons with disabilities require prostheses. As long as we are not deemed disabled, our bodies shall remain unified, natural, and autonomous. But such an assumption, as Dolmage points out, “speaks to the normate belief in the organic unity and autonomy of the body,” whereby “our bodies” are perceived as “essential things” that “do not really change” (2014: 111). Dolmage discerns a fear of bodily change among able-bodied persons that informs their fear of disability, which is further “related to a fear of interdependence” (2014: 111). Not many of us would want to admit that we are reliant not only on technological prostheses, but also on other people who are willing to attend to our needs. Amid our insistence on preserving the autonomy and wholeness of our bodies, it seems easy to forget that “embodiment is a phenomenology defined not by boundaries, but by openings” (2014: 111). As prosthetic bodies, our sense of embodiment is contingent on the openings that connect our bodies with other entities.

While the ways in which we are embodied with other human and nonhuman entities may be varied, our embodiment is marked by the possibility of connecting with others. These connections may include our intercorporeal engagements with other human beings and nonhuman animals as well as our prosthetic relations with inanimate and artificial tools – e.g., a walking

cane, the language that we use to communicate, or an instant messaging (IM) system – that augment the radius of our embodied activity. Whatever human or nonhuman entity we may want to engage with, “we *are*,” as Dolmage reminds us, “because language, rhetoric, and embodiment are communally not normal, not ‘able’” (2014: 115). Disability problematizes the human desire for autonomy, as it calls attention to our inter-connectedness with others. “This essential imperfection,” he goes on to say, “often means that we do need others, or we need access to other modes and discourses of being, and this makes our existence essentially prosthetic” (2014: 115). What Koppers and Marcus’s employment of poetic discourse and 3D tele-immersive imagery in the performance of *Cripple Poetics* seems to suggest is that our prosthetic existence is necessarily generative. In light of the juxtaposition between language, digital imagery, and embodied action on the intermedial stage, the audience members may experience the articulation of disability, which is an articulation of difference, through Koppers and Marcus’s embodied associations with the creative prostheses that they employ in the performance. This intercorporeal experience of alterity through the prosthetic relations between language, digital technology, and the disabled body also indicates that the human being’s relation to the prosthetic does not entail the fusion of one’s body with technology or the assertion of human control over the very technological implements that facilitate and complement our existence in the world.

The prosthesis, as David Wills understands it, is not subservient to the human, for “the prosthetic possibility determines the shape of the human, the artificial determines the form of the natural” (1995: 29). The prosthetic device, like every technological tool that the human animal fashions and wields, is incorporated as part of the body’s relation with the world. It is this act of incorporating technological prostheses into the body’s architecture that shapes our perception of the environment in which we live. However, Wills’ use of the word “natural” in his discussion of the prosthetic is problematic, as it rides on the assumption that the organic body exists as a

“natural” entity that stands in contrast to the “artificial” quality of prostheses. Wills’ dichotomous theorization of the relationship between bodies and prostheses calls to mind the way in which prosthetic devices are marketed to persons with disabilities on the basis of what Lorainne Thomas describes as “the product’s ability to allow the user to regain or replicate ‘natural’ functions such as walking, standing or running with ease” (2001: para.15). In her study of advertisements for prosthetic devices, Thomas found that a link is often established between the product and a physically and cognitively demanding activity in which a person with multiple disabilities is engaged. She observes that in many of these advertisements, the prosthetic device is depicted as the artificial catalyst that enables the “disabled body” to regain its “natural” abilities (e.g., walking, jumping, running etc.) as it participates in activities that are associated with “athleticism and courage” (2001: para.15). Such an ableist depiction of the prosthetic, which assumes that the “disabled body” is in need of an artificial device that would help to restore the “natural” state of that body, seems to reinforce the perception that prostheses are meant to “project and protect the individual’s image of the physical self as ‘whole’ and ‘inviolable’” (2001: para.15). However, the presupposition of the body’s “natural” and organic wholeness in the advertisements for prosthetic devices appears to be undermined by the virtual dance performance delivered by Kuppens and Marcus in *Cripple Poetics*.

Kuppens and Marcus have different body structures, which influences their bodily movements. Looking at the 3D tele-immersion footage depicting Kuppens and Marcus’s dance routine, we see that whenever Kuppens tries to swing Marcus’s body around hers in a single, fluid motion, he would fall back to the floor. Due to the muscular contortions in Marcus’s body, he finds it challenging to stand in an upright position for too long. For Kuppens, the paralysis of her lower extremities limits her mobility. Both performers have bodies that differ in physical form and muscular composition. As a result, they tend to move and behave differently. There is no

harmonious fusion between their bodies. Yet their desire to perform a dance routine together at a tele-immersive lab in Berkeley foregrounds what Dolmage characterizes as “the subversive possibility that bodies simply will not agree – that an individual body is not a cohesive and agreeable whole, nor that our encounters with others will ever (or should ever) enact a harmony” (2014: 142). Far from affirming the wholeness and cohesiveness of the body, the human being’s relation to the prosthetic is marked by gaps and fissures that exist within the body, and also in the interactions between different bodies in a myriad of different contexts. But we should not be so quick to conclude that these gaps and fissures in and between bodies would necessarily impede the creative potential of performers with disabilities. Instead, we should pay attention to the ways in which performers with disabilities employ various technological implements as creative prostheses that facilitate the articulation of their subjective experiences with disability.

In *Cripple Poetics*, the recitation of poetry and the projection of 3D tele-immersive images are incorporated into Kuppers and Marcus’s embodied engagement with the audience members who are co-situated in the same intermedial environment. This interface between Kuppers and Marcus’s embodied performance and the creative prostheses – poetic language and digital imagery – that they employ could also influence the way in which the audience members perceive the generative potential of disability, particularly as the disabled body, through its interactions with prosthetic devices, is rendered as the engine of creativity. Rather than being a simple appendage to the disabled body, both digital and non-digital prostheses can help to shape the identity of performers with disabilities who turn to these tools in order to articulate – in a way that is at once poetic and phenomenological – their thoughts and feelings about disability.

In the next chapter, which is also the final chapter of this study, I will examine a creative performance project that uses critical techno-dramaturgy as a strategy for structuring the perception of the embodied audience members in intermedial performance. This is an original

project that directly applies the theoretical questions posed in this dissertation in order to examine the complicity between digital media (particularly video technology) and the archiving of death as what I call *mediated remains*. The inspiration for the project stems from a real-life incident of juvenile detention in Canada that resulted in the suicide of a young woman named Ashley Smith, whose death was witnessed by the prison guards through the mediated gaze of video surveillance. Rendered as an intermedial performance directed by Andy Houston, this project entitled, *From Solitary to Solidarity: Unravelling the Ligatures of Ashley Smith*, which is known as *S2S* for short, interrogates the human perception of incarceration and self-harm in our intensely mediated world, where even instances of death are captured on video. As the media specialist for this project, I was responsible for developing the intermedial elements of the performance. Focusing on the intermedial design of the performance, the chapter will examine how the conceptual framework of critical techno-dramaturgy facilitates the analysis of video technology as a digital memory device that archives the *mediated remains* of death, which comprises the video surveillance footage that immortalizes Ashley's demise.

By juxtaposing the live performative re-enactment of Ashley's time in solitary confinement with the actual archival footage depicting her struggles and eventual suicide in prison, *S2S* addresses the ethical questions concerning the artistic use of material from the digital archive that contains the mediated remains – i.e., the digital traces – of Ashley's death. My hope is that the analysis of this original performance in the final chapter will complement the examination of embodied perception and intermedial performance in the preceding chapters. Moreover, I will demonstrate that this performance serves as an example of how critical techno-dramaturgy can be applied in the production of new creative projects that feature the interplay between embodied performance and digital technology. Building upon Marcel O'Gorman's theory of 'necromedia' and Rebecca Schneider's investigation of historical re-enactment in

theatre performance, I will argue that the intermedial performance of Ashley's story constitutes an artistic reworking of the mediated remains of death. Consequently, the analysis of *S2S* will culminate in a discussion of the ways in which the audience members' embodied and multi-sensorial experience of the performance might affect their perception of death in the digital age.

Chapter 6:

Performing the Mediated Remains of Death in *S2S*

(From Solitary to Solidarity: Unravelling the Ligatures of Ashley Smith)

“Because we know that, once it has been taken, captured, this image will be reproducible in our absence, because we know this *already*, we are already haunted by this future, which brings our death. Our disappearance is already here.”

- Jacques Derrida, *Echographies of Television: Filmed Interviews*, 2002, p.117.

On the morning of December 19, 2013, as the rising sun blazed through the nippy air, members of the public and the news media gathered at a conference room in Toronto to hear the verdict of an inquest into the tragic death in October 2007 of Ashley Smith,⁴⁰ a nineteen-year-old teenager from New Brunswick, at a Kitchener-Waterloo detention facility. Presided by the coroner, Dr. John Carlisle, the jury of five women delivered a “homicide” verdict on Ashley’s case (“Death Ruled a Homicide” 2013). While the findings of the inquest were not legally binding, the verdict revealed that Ashley’s demise in detention was not so much the result of her attempt to commit suicide by tying cloth ligatures around her neck. Rather, the jury believed that it was the inaction of the prison guards that contributed to the young woman’s death, as they stood outside the prison cell and witnessed the final moments of her life by way of video surveillance. There she was, lying on the floor and gasping for air. For more than twenty minutes, the guards did not intervene. They were under strict orders from the prison’s management to stay

⁴⁰ Departing from the naming conventions in academic writing, I will be using the given name “Ashley” rather than the family name “Smith” when referring to Ashley Smith. By using her given name, I wish to emphasize that Ashley was a unique individual with aspirations and ambitions. Out of respect for Ashley, I have chosen to use her given name in order to honour her memory.

clear of Ashley, whom the higher authorities believed to be seeking attention through her suicidal antics. Indeed, the guards were only following orders. These orders eventually became a death warrant for a young woman, who at the time of her demise, had been shifted across seventeen detention facilities throughout Canada and held in solitary confinement for four years. But on the morning of December 19, 2013, “homicide” was the word that weighed heavily on everyone’s mind. The delivery of the verdict, which was streamed live over the Internet, rattled the prison establishment. That establishment had taken to the courts to prevent the public release of the surveillance video showing Ashley’s death in prison. Perhaps whatever happens in prison has to remain in prison. Yet the Internet seems to have become the unofficial custodian of Ashley’s *mediated remains*, which comprises the video surveillance footage and other digital traces that attest to her existence and death. Nevertheless, the availability of these digital traces on the Internet raises an important question: in watching the disturbing footage online or in an intermedial performance that attempts to re-enact – and perhaps reinterpret – Ashley’s story and her predicament in prison, how might we be implicated in the death of another human being?

This concluding chapter is devoted to the discussion of a creative project that uses critical techno-dramaturgy as a strategy for influencing the perception of the embodied audience members in intermedial performance. Produced in March 2014, this is an original project that directly applies the theoretical questions posed in this dissertation in order to examine the complicity between digital media (particularly video technology) and the archiving of death as *mediated remains* (i.e., the digital traces that attest to the historical existence of a human being). The inspiration for the project stems from a real-life incident of juvenile detention in Canada that resulted in the suicide of a young woman named Ashley Smith, whose death was witnessed by the prison guards through the mediated gaze of video surveillance. Rendered as an intermedial performance directed by Andy Houston, this project entitled, *From Solitary to Solidarity*:

Unravelling the Ligatures of Ashley Smith, which will be referred to as *S2S* from this point onwards, interrogates the human perception of incarceration and self-harm in a mediatized world, where even instances of death are captured on video. As the media specialist for this project, I was responsible for developing the intermedial elements of the performance. Focusing on the intermedial design of the performance, this chapter will examine how the conceptual framework of critical techno-dramaturgy facilitates the analysis of video technology as a digital memory device that archives the mediated remains of death, which include the video surveillance footage that immortalizes Ashley's demise. This harrowing footage has since been uploaded to the Internet, and anyone from anywhere can watch the video and share it with whomever they want.

In the original incident on which this performance project is based, the prison guards were instructed by their superiors to remotely monitor Ashley using video surveillance in order to minimize physical contact with her. At the age of fifteen, Ashley was detained for throwing crabapples at a mailman outside her home in New Brunswick. Living in solitary confinement during her detention meant that her existence in relation to the outside world was constantly mediated through video surveillance footage reviewed by correctional service officers. But despite the proliferation of digital and non-digital information related to Ashley's demise during the inquiry process, the public can only access the story of her life in mediated form, whether through online news and documentary coverage on her case or the surveillance footage of her life in prison. The accumulation of these media content on the Internet is akin to what Jacques Derrida terms "archive fever" (and this is a point that I will develop later in this chapter). While Viktor Mayer-Schönberger argues for the "virtues of forgetting" in the digital age by proposing that digital media artefacts be allocated a limited shelf life or "expiration date" that ensures their deletion from digital archives after a certain period of time (2009: xi), there are significant judicial implications pertaining to the elimination of the online digital archive of video clips that

attest to the historicity of Ashley's existence as a human being. Conversely, there are also ethical considerations pertaining to the retention of the video surveillance footage that contain the mediated traces of her life and death under detention.

By juxtaposing the live performative re-enactment of Ashley's time in solitary confinement with the actual archival footage revealing her struggles and eventual suicide in prison, *S2S* confronts the ethical questions concerning the artistic use of material from the digital archive that contains the mediated remains – i.e., the digital traces – of Ashley's death. How should these mediated remains be treated in an artistic environment? Building upon Marcel O'Gorman's theory of "necromedia," which explores the collusion between death and media, as well as Rebecca Schneider's characterization of artistic re-enactment as "performing remains," I argue that the intermedial performance of Ashley's story constitutes an artistic reworking of the mediated remains of death. My contention is that the actual surveillance footage that are presented on the stage are complicit in not only the digital archiving of Ashley's death but also the act of reinterpreting her predicament through the interplay between digital media (especially video technology) and the theatrical performance of thirteen actors who were not previously acquainted with the case. Given how the auditory and visual senses of the audience members might be challenged by the intermedial elements employed in the performance of *S2S*, I will also discuss the ways in which this embodied and multi-sensorial experience might affect their perception of death in the digital age. Finally, I will conclude this dissertation by taking a brief look at some of the issues that have not been addressed in this dissertation, due to the constraint of space. In addition, I will be offering an overview of a new creative project that will apply the concept of critical techno-dramaturgy in order to investigate the role of embodied labour and the perception of time in digital communication.

6.1 Of Ligatures and Open Wounds: Unravelling the Path to *S2S*

The Italian dramaturge Eugenio Barba discerns an intimate relationship between the embodied suffering that an artist experiences and the creative endeavour that he or she pursues. “Often, at the origin of a creative path,” Barba claims, “there is a wound” (2009). This wound may take the form of a physical injury, which tends to be obvious to the people with whom the artist interacts, or a mental scarring that might escape the scrutiny of onlookers. The wound, in both its physical and mental forms, can influence the artist’s craft through a conversation that unfolds between the creative work and the embodied experience of the wound’s impact on the artist’s physical and mental wellbeing. I should clarify that Barba’s discourse on the influence of the wound on creative production applies strictly to the art of theatre and performance. It is not the source of *all* art. “In the exercise of my craft,” Barba goes on to explain, “I have revisited this intimate lesion to deny it, question it or simply be near it. It was the cause of my vulnerability and the source of my needs.” (2009). For Barba, the seemingly paradoxical quality of the wound as the source of one’s insecurity and sustenance provides the artist with the basis upon which a creative piece of work can be fleshed out. In this sense, the wound should by no means be taken for granted as a trivial experience of suffering. Instead, the artist wrestles with the wound that he or she experiences by observing, probing, and challenging it, so as to discover the meaning that the wound might hold for his or her creative endeavour. But the act of engaging directly with one’s wounds carries with it a certain degree of risk, which is something that some, if not most, artists might be reluctant to invest in.

Commenting on the risks involved in the craft of theatre, the British director Tim Etchells makes the point that performance should be conceived as a kind of investment. “Investment,” as Etchells asserts, “is what happens when the performers before us seem bound up unspeakably with what they’re doing – it seems to matter to them, it appears to hurt them or threatens to

pleasure them, it seems to touch them, in some quiet and terrible way” (1999: 48). Performance work not only places physical demands on the performer; it also frustrates his or her emotions and challenges his or her perceptions of the world, which may lead to the questioning of a wide range of issues concerning humans, animals, the environment, and even the use of technology in artistic practice. Etchells identifies a certain complicity of the performer with the material that her or she is working on. Put differently, performance affects performers as much they affect it. We can see the unravelling of this mutual impact between the human performers and the media artefacts – both digital and non-digital – that feature in the University of Waterloo Drama Department’s production of *S2S*, as the performers were encouraged to think about a painful situation in their lives and consider how that personal situation might relate to the media artefacts that attest to Ashley’s predicament during her four-year incarceration and the events that led to her tragic demise. By asking the performers to voluntarily divulge a personal aspect of their lives and to put that information in conversation with such media artefacts as the print and television news reports on the case, documentary interviews with the doctors and nurses who attended to Ashley, and declassified video surveillance footage from the correctional service, Andy Houston, the director of *S2S*, exposed the intimate relationship between the human performers and the assemblage of digital and non-digital material in the performance.

For each performer, this intimate encounter with the nonhuman media objects containing the personal details of an unfamiliar human “other” originated from an open wound that affected his or her life, much like Barba’s characterization of the creative path. While each performer’s creative journey in the production of *S2S* can be traced back to a personal wound in their individual lives, the performance itself also originated from an open wound. This wound was Ashley’s predicament throughout her four-year incarceration. The creation of *S2S* began when Houston came across the CBC’s *The Fifth Estate* documentary investigation into Ashley’s

demise by the journalist, Hana Gartner.⁴¹ Two documentaries on Ashley's case were produced in 2010. The first one, "Out of Control", examined the circumstances that led to her detention in solitary confinement, as well as the final moments of her life at the Grand Valley Institution for Women in Kitchener. The second episode, "Behind the Wall," focused on Ashley's four-month stay at the Regional Psychiatric Centre in Saskatoon. This episode also revealed the legal wrangling that transpired between the CBC and Correctional Service Canada over the release of the video surveillance footage showing the final moments before Ashley's death by asphyxiation in October 2007 at the Grand Valley Institution. The CBC and Ashley's family lawyers had pressured Correctional Service Canada to release the surveillance video to the public ("Behind the Wall" 2010). The correctional service, however, refused to accede to the request on grounds of confidentiality. Subsequently, the Ontario Divisional Court denied the correctional service's motion to withhold the video footage and documents pertaining to Ashley's forced restraint throughout her four years in solitary confinement and her eventual demise in October 2007 ("Inquest to See Treatment Videos" 2012). Consequently, these archival materials were made available to the coroner's inquest and the general public, and the video surveillance footage showing Ashley's death was uploaded to YouTube.

Gartner's *Fifth Estate* investigative report also mentioned that Ashley was diagnosed with Borderline Personality Disorder (BPD) during her four-year ordeal in solitary confinement. The disorder was compounded by her erratic and sometimes violent behaviour (by attacking the prison guards with sharp objects, for instance), which made it challenging for the prison guards to interact with her without resorting to such suppressive techniques as the use of restraining cuffs or sedative drugs to keep her under control ("Out of Control" 2010). For Houston, the *Fifth*

⁴¹ Since 1975, the Canadian Broadcasting Corporation (CBC) has produced the documentary series, *The Fifth Estate*, which offers in-depth analyses into the social, political, and cultural issues that affect Canadian society.

Estate documentaries on Ashley's case revealed a "traumatic wound" that was inflicted by the correctional service's "systemic mismanagement and misunderstanding" of mental health and its implication on the welfare of detainees ("S2S Program" 2014). Even though the correctional service's handling of mental health issues in the prison system did not affect him personally, he was motivated to create a performance that not only shed light on Ashley's story, but also provided an opportunity for the audience members to reflect on the treatment of mental health in a myriad of institutions, including the university system. To this end, Houston mounted a course on devised theatre for senior undergraduates in the Waterloo drama department.

During the Fall 2013 and Winter 2014 terms, around 20 students took part in Houston's course, which required them to watch the *Fifth Estate* documentary on Ashley's story and consider how they might have been impacted by it. When Houston convened a meeting with the students to discuss their reactions to the documentary, the group began to think about Ashley's struggles and eventual demise in prison, as well as the fraught perception of mental illness in the broader society. Thereafter, the undergraduates were invited to contribute to the devising process by weaving their personal narratives about an open wound in their lives into the guiding narrative of the performance, which focused on the prison system's treatment of Ashley's mental health predicament during her incarceration. Houston's approach towards the performance of *S2S* involved the deployment of a method known as *auto-ethnography*. According to the sociologist and communications researcher Carolyn Ellis, auto-ethnography refers to the "research, writing, story, and method that connect the autobiographical and personal to the cultural, social, and political" (2004: xix). She explains that auto-ethnography, "as a form of ethnography," is understood as "part *auto* or self and part *ethno* or culture" (2004: 31). Rejecting the objective and detached methods of inquiry employed by social scientists, the auto-ethnographic method pays attention to the subjective experiences of the self-observing person who is writing or talking

about an aspect in his or her life. Auto-ethnography could therefore be seen as a form of storytelling, as the practitioners of the auto-ethnographic method tend to follow “the conventions of literary writing and expression,” which may include “concrete action, emotion, embodiment, self-consciousness, and introspection portrayed in dialogue, scenes, characterization, and plot” (2004: xix). But beyond its literary features, Houston explains that the auto-ethnographic method “presents self-narrative, or an autobiographical voice, within a particular cultural and political context” (“*S2S Program*” 2014). In the months leading up to the production of *S2S* in March 2014, the cultural and political context was embodied by the inquest into Ashley’s demise. Even though the inquest was drawing to a close when the students in Houston’s course began to think back to a traumatic event in their lives (in essence, an open wound), the auto-ethnographic method presented the students with an opportunity to explore the points of convergence between their personal stories and the physical and mental stresses that Ashley endured during her four-year ordeal in solitary confinement.

While working with his students on the development of the narrative for the performance, Houston discovered how “the institutional comparisons, between a university and a prison, were inevitable” (“*S2S Program*” 2014). Many of the students in the class reported that they too had been coping with mental health issues since they entered the university. Apart from relationship issues and problems within their own families, many students in Houston’s course – some of whom belonged to programs outside of the drama department – also faced a high level of academic stress as they struggled to meet the standards required to pursue their chosen majors. I had the opportunity to speak with Houston’s students during my involvement in the production of *S2S*. An overwhelming majority of them were afraid of failure, and for this reason, they did not want their family members and friends to perceive them as someone who might be considered a “failure in life”. This fear of failure resonated with every person involved in *S2S*, including

Houston and myself. As the students began to share more about the open wounds in their lives, there appears to be a degree of overlap between their physical and mental struggles at university and the oppressive predicament that Ashley endured in prison. But while the prison system asserts its control on detainees by confining them to a single cell with no windows for extended periods, thereby depriving them of physical activity and exposure to sunlight, the university system adopts a subtler approach towards the control of students. By placing a strong emphasis on exams and results, as opposed to a more comprehensive assessment of a student's aptitude and attitude in class, it seems as though today's undergraduates have been corralled into a narrow conveyor belt that is designed to mould them into exemplary workers for a variety of industry. I acknowledge, however, that there can be no direct comparison between Ashley's incarceration as well as the severe mental health issues that she experienced during her detention and the stress experiences of the university students involved in *S2S*. Unlike Ashley who was deprived of an education while she was in prison, the student performers had the means and privilege to attend university. Nevertheless, the common experience of existential stress among the students in Houston's course gestures towards the possibility of forging a sense of *solidarity* that not only binds the students together, but also serves to connect their personal wounds to the plight of others – including Ashley – who may have suffered at the hands of various institutions.

As the artistic director of the production, Houston regarded auto-ethnography “as a way of presenting a story through reflections and refractions of multiple selves in contexts that transform the authorial ‘I’ to an existential ‘we’” (“*S2S* Program” 2014). Working with the scholar-playwright Melanie Bennett, Houston and his students were able to construct a narrative structure for the performance of *S2S*. Weaving multiple personal narratives into a single performance allowed for the movement from the personal experience of *solitude* – as embodied by Ashley's solitary confinement – to the collective experience of *solidarity* and a common

feeling of existential anxiety among people. This experiential transition from the individual to the collective was encapsulated by the title of the performance, *From Solitary to Solidarity: Unravelling the Ligatures of Ashley Smith*. For Houston, the auto-ethnographic approach to performance practice “seemed an effective way of exploring how our multiple layers of experiencing mental health issues in ourselves and through Ashley’s story might connect us all” (“S2S Program” 2014). In an effort to locate the points of convergence that connect the performers’ interpretation of Ashley’s physical and psychological struggles in prison to their own personal encounters with mental health issues, the students involved in S2S were required to congeal their individual narratives about an open wound in their lives into the embodied performance of short sketches. Together with the auto-ethnographic narratives that they had written beforehand, these embodied sketches provided the basis upon which the actual performance could be constructed.

When I joined the production of S2S in the fall of 2013 as a Media Specialist for the project, I had the privilege of watching several of the short sketches performed by Houston’s students at various locations across the Waterloo campus. Out of the seven sketches that I managed to catch a glimpse of, a few of them left a deep and somewhat painful impression on me. Some of these students worked on their own, while others worked in groups of two or three. In order to protect the identities of Houston’s students, I will refer to them by the first letter of their given names. Performer A, for instance, chose a dark and secluded passageway hidden in the basement of the Arts Lecture Hall. Once there, he created a devised sketch that touched on his insecurities about life and the pressures he faced in school that were compelling him to take his own life. Unlike the frequently traversed passageway that led from the Arts Lecture Hall to the South Campus Hall, this relatively unknown passageway led to a dead-end. The similarity between the dead-end encountered by Performer A as he performed in the deserted passageway

and the hopelessness of Ashley's predicament in solitary confinement was hard to miss. The phenomenological experience of being situated in that dark, narrow, and stuffy passageway, a place that was neglected by the university population, mirrored the narrative of academic pressure that Performer A was attempting to convey to his audience. The similarities between Ashley's oppressive predicament in prison and the stresses that Houston's students faced in school was reiterated by a group of three performers who chose the staircase at the north end of the Modern Languages Building to perform their sketch. Two of these performers performed a repetitive but well coordinated hand and foot gesture, slapping their palms and feet together as they moved up and down the staircase. The third performer acted as the prison guard who would instruct them to either stop their movement or carry on with it. With his aviator glasses on, the prison guard harangued the other two performers by slamming his fist against the glass door and using intimidating language towards them. Taken together, the sketches produced by Performer A and the group of three students offered a glimpse into the intersections between the physical and psychological stresses experienced by university students and the curtailment of personal freedom that Ashley had to contend with in prison.

But having spent an entire afternoon watching half a dozen sketches mounted by Houston's students, nothing could have prepared me for the final sketch of the day. Standing on the stage in the main theatre of the Modern Languages Building, Performer M presented a moving sketch in which she revealed that she had attempted suicide in late 2012 by slashing her wrist. Fortunately, a friend discovered her suicide note, and this person went on to alert the emergency services. By the time the ambulance arrived, Performer M had made an incision on her wrist. As the cut was not too deep, the surgeons were able to suture the cutaneous wound without excessive loss of blood. Performer M was nevertheless confined to a single room at the hospital for more than 72 hours. During this time, she was placed under "suicide watch".

Nobody, not even a family member or a friend, was permitted to visit her as she remained in a sterile confinement room by herself, with periodic visits from doctors, nurses, and the police. The hospital staff kept watch on her wellbeing via the video surveillance footage streamed from the confinement room to the control office located next door. For 72 hours, she was shut out from the world. From the perspective of her family and friends, she existed not in the flesh but in mediated form as an image on the video surveillance screen.

Ligatures and open wounds. Performer M's experience with the "suicide watch" regime at the hospital was reminiscent of Ashley's predicament in solitary confinement, even though the circumstances under which they were confined were vastly different. Whereas Performer M was confined to a hospital ward for three days, Ashley was detained in a tiny cell for four years before her tragic demise in prison. Furthermore, while Performer M came from a stable family in Northern Ontario and was able to attend university, Ashley came from a single-parent home and was incarcerated at the young age of 15 for throwing crabapples at a postal worker. Ashley was reported to be performing well in school before her incarceration (Gartner 2010). But her education was cut short by the decision of the correctional service to extend the term of her detention from a few months (as originally mandated by the court) to an eventual period of four years. Performer M, on the other hand, had been an aspiring ballet dancer in high school. She even passed the auditions to enter the prestigious Royal Winnipeg Ballet. However, due to family pressure, she decided to take up Chemistry at the University of Waterloo. Yet she knew all along that she was a performer at heart. As such, she chose to do a minor in drama with the drama department. Their respective predicaments could not be further removed from one another.

But despite the vastly different social and economic backgrounds from which Ashley and Performer M hailed, they had both experienced – in different ways – a traumatic event that affected their lives. Of course, we have to remember that for Ashley, the traumatic event of her

prolonged detention in solitary confinement resulted in her death. Performer M, however, was fortunate enough to survive her suicide attempt. And in the fall of 2013, while attending Houston's course on devised theatre, Performer M, like all her colleagues in that course, learned about Ashley's incarceration. Sensing a strong correlation between Ashley's story of prolonged detention and the circumstances that compelled her to attempt suicide, Performer M fashioned a dance performance that sought to encapsulate the manner in which their lives seemed to have spiralled uncontrollably from a moment of serenity and promise to that of chaos and futility. As she spun her body around in ever contracting circles, she began to describe the tranquility of her childhood in Northern Ontario, which was quickly interrupted by the painful narrative about her abusive relationship with her partner, which forced her to consider death as a means of escape. This was an open wound with which the performer was contending at that very moment when I witnessed her dance on the stage.

As I sat in the main theatre of the Modern Languages Building, watching Performer M and her delicate movements flow through the air with the gracefulness of a swan, I could not imagine how somebody who had experienced such a physically and mentally traumatic event in her life could muster the courage to speak about the ordeal in public, let alone to express that experience through dance. To say that I was awestruck would be an understatement. However, I soon realized the subtle complicity between video surveillance technology and death, as both Ashley and Performer M were subjected to the same isolation and remote monitoring that were designed to prevent them from harming themselves. In Ashley's case, the seemingly innocuous intention behind the monitoring regime deployed by the prison system was fraught with ambiguity, as the prison guards were given strict orders not to intervene when the video surveillance footage revealed that Ashley was tying cloth ligatures around her neck. As such, I wanted to complicate the auto-ethnographic method that Houston employed as a means of

weaving the personal narratives of his student performers with Ashley's life story. One way to do this was to incorporate the video surveillance footage showing Ashley's demise into the performance. In the following section, I will discuss the deployment of Critical Techno-dramaturgy as a dramaturgical method in the production of *S2S*. I will also be exploring the ways in which the creative project applies the theoretical questions posed in this dissertation, and how these questions might be helpful in examining the complicity between video surveillance technology and death.

6.2 Applying Critical Techno-Dramaturgy

Several months before the opening of the performance on March 18, 2014, I attended a production meeting with Houston, his technical director, Gill Lesperance, as well as the drama department's multimedia designer and lecturer, Paul Cegys, to discuss the intermedial aspects of the project. Given my research interest in intermedial performance, I was keen to emphasize that the use of such media elements as digital projection and video surveillance footage should not be conceived as ancillary to the embodied performance delivered by the student performers on the stage. Rather, these media elements should become part of the performance, so as to allow the actors to interact with these elements as they perform their auto-ethnographic narratives. Hence, I proposed a new approach to the integration of digital graphics and video footage into intermedial performance. Instead of projecting these visual elements onto a regular two-dimensional screen situated at the back of the stage, it might be possible to project them onto a translucent piece of fabric wrapped around a box-like structure. The actors could then perform inside the structure and behind the images that have been projected onto the piece of fabric.

Consenting to such an idea, Lesperance developed a digital mock-up of this structure, making improvements along the way to ensure that it was technically feasible to construct it as a

box. After some discussion, Houston and the rest of the creative team decided to name this structure the *media cube*. But Cegys, the multimedia designer for the performance, felt that it was necessary for the actors to interact directly with the images that were being projected onto the fabric. He suggested that the performers don clinical gowns (much like the white gown that Ashley wore while she was in prison), so that the digital images and video surveillance footage could then be projected onto the garment. However, everyone on the creative team, including Cegys, was cognizant of the technical difficulty of projecting images onto the moving bodies of the actors. As such, the team agreed to situate the “media cube” at the middle of the performance area, with three separate digital projectors directed at three different faces on the structure. The cube would then serve as the interstitial space between the mock-up prison cell at the backstage area and the long table at the front of the stage containing reams of paperwork pertaining to Ashley’s case. In this way, the actors could take turns to perform inside this cube while digital images and video footage were being projected on all three sides of the translucent covering that wrapped around the structure (the fourth side was left uncovered in order to allow the actors to enter cube and perform inside of it). With beams of white light shining upwards from under the floorboard, the movement of each performer’s body inside the “media cube” would cast shadows on the translucent fabric. By allowing the shadows cast by the actors’ embodied movements to interfere with the digital projections on the covering of the “media cube,” it was hoped that the audience members would be reminded that a human being with a unique identity and history lies behind every still or moving image showing Ashley’s death in prison and the personal memories of the thirteen performers in *S2S*.

Once the design of the “media cube” was finalized, the creative team and I turned our attention to the dramaturgical aspect of the performance. I shared with them my concept of

Critical Techno-Dramaturgy, which was thought to be helpful in addressing the following three questions about *S2S*:

- 1) How might the use of digital technology in the intermedial performance of *S2S* affect the audience members' perception of existential finitude and the technological memorialization of human existence beyond death?
- 2) What impact might the prosthetic relationship between the human performers and the digital tools that are employed in the performance (including digital projection and live video surveillance technology) have on the audience members' understanding of human-machine relations?
- 3) And most significantly, how might digital media – particularly video surveillance technology – be complicit in the mediation of death in the digital age?

I should note that these were speculative questions that guided the dramaturgical design of the intermedial performance. Due to the constraint of time, I was not able to obtain ethics clearance from the university to conduct interviews with the audience members who attended the production of *S2S* in March 2014. While I have attempted to address some of these speculative questions in Chapters 3, 4, and 5 of this dissertation, being physically involved in the production of *S2S* meant that I could turn the dramaturgical focus of the performance towards all three questions that I have identified as pertinent to the subject matter of the play. As other artists were responsible for creating the intermedial performances that were examined in the preceding chapters of this study, I could only apply the concept of critical techno-dramaturgy as a lens through which to analyze the effects of those projects on the audience members' perception of embodiment and existential finitude in human-machine relations. However, *S2S* presented an opportunity for the creative team to experiment with the actual implementation of critical techno-dramaturgy as a dramaturgical *method* for designing an intermedial performance. Given the

centrality of the “media cube” as the interstitial space within which the digital traces of Ashley’s extended incarceration and the auto-ethnographic performances of the thirteen student actors converge, the deployment of critical techno-dramaturgy in the production of *S2S* could also serve to shed light on the complicity between video surveillance technology and the mediation of death as digital traces that can be rapidly disseminated across the Internet.

Dramaturgy, as Tim Etchells understands it, is the “art of unfolding [...] based on the dynamic deployment of pictorial and non-pictorial elements across the surface of a stage, building layers, contrasts, echoes, repetitions over duration” (2009: 76). Etchells sees dramaturgy as a way of “doing time,” for it entails “the structured unfolding of text, action and image over time,” with each element complementing or challenging the other across the duration of the performance (2009: 76). The phrase “doing time” is often used as a euphemistic expression for serving a prison sentence, and this is an expression that resonates with the subject matter of *S2S*, which focuses on Ashley’s four-year incarceration and subsequent demise in prison. In fact, the expression also resonates with Heidegger’s concept of being and time. The human being, according to Heidegger, is aware of time as it stands in anticipation of death (*Being and Time* 2010: 397-8). As Heidegger’s student, the philosopher of hermeneutics, Hans-George Gadamer, elucidates, the human being is a “thrown projection” that “comes upon itself in the midst of things and has to take itself over as it finds itself” (2008: 218). By having an awareness of time, the human being as “being-towards-death” is thrown violently into the world and encounters the horizon of experience (i.e., time) that anticipates its own death. In this sense, we are all “doing time,” as we are all aware of our own finitude.

While Ashley was “doing time” in prison, she was probably aware of how the passage of time anticipates the inevitability of death. Whereas most detainees would serve out their sentences for a finite period at a specific location, Ashley was held for a previously undetermined

amount of time. Moreover, she was moved across multiple detention facilities in six different provinces from the time she was prosecuted in 2003 to the time of her death in October 2007. The fragmented duration of her incarceration in all of those facilities meant that the four years that she spent in the prison system should not be read as a coherent and linear progression of events. Understanding dramaturgy, or what Etchells calls “pure dramaturgy,” as a way of “doing time” would help us to appreciate how Ashley’s detention was comprised of multiple sensory events (visual, auditory, and kinaesthetic) that unfolded across different time periods and at different spaces. Indeed, the juxtaposition of images and video footage from different time periods in *S2S* calls for a dramaturgical strategy that departs from the linear approach to performance practice, wherein the visual, auditory, and kinaesthetic elements of the piece tend to be subsumed under the narrative structure of the play.

In Chapter 2, I offered an overview of what my concept of critical techno-dramaturgy entails. As mentioned in that chapter, critical techno-dramaturgy consists of two interrelated approaches: (1) Intermediality and De-familiarization; as well as (2) Interactivity and Perceptual Engagement. These two approaches are useful not only in terms of analyzing human-machine relations in intermedial performance but also for the structuring of different media elements in conjunction with the embodied performances delivered by human performers. The first approach, which I refer to as “Intermediality and De-familiarization,” involves the deliberate structuring of the interplay between the human participants (including the audience members) and the new media technologies featured on the intermedial stage in ways that destabilize the audience members’ familiarity with how they might be embodied with these technologies. The aim here is to challenge the audience members’ perception of how humans relate to media technologies. In *S2S*, the still images and video footage pertaining to Ashley’s story were not delivered in the same manner as they would typically appear on the Internet. Instead of simply transplanting these

media elements from the Internet to the stage, the digital traces of Ashley's incarceration and eventual demise were interwoven with photographs and video clips drawn from the personal history of the thirteen actors in the performance. This juxtaposition of images and videos belonging to different individuals unfolded as a series of digital projections on three sides of the "media cube" rather than a two-dimensional, multimedia display that one would expect to see on a computer monitor. Besides, having human actors perform inside the cube and behind the digital projections served to disrupt the audience members' familiarity with how still images and videos are usually consumed as disembodied digital assets in their daily lives. Through the intermedial layering of photographs, video footage, auto-ethnographic narratives, and the embodied performance of the actors within the interstitial space of the "media cube," which separated the mock-up prison cell at the back of the stage and the long boardroom table at the front, the defamiliarization of the audience members' encounter with digital assets in *S2S* paved the way for the second approach in critical techno-dramaturgy to take root. Above all, the performers bring a phenomenological sense of physical "presence" to media (photographs, video footage, and even Facebook profiles) that do not usually connote presence.

The second approach in critical techno-dramaturgy, known as "Interactivity and Perceptual Engagement," emphasizes the role of the audience members as active participants in the creation of meaning in the intermedial performance. By incorporating the audience members as agents who are capable of influencing the action in the representational context of the intermedial performance event, the deployment of critical techno-dramaturgy has the potential to stimulate the audience's critical awareness of the ways in which the rapid development and ubiquitous usage of new technologies affect the individual and society. However, we should note that the experience of interactivity, as Brenda Laurel puts it, is a "thresholdy phenomenon" that is "highly context-dependent" (1991: 21). Nevertheless, the critical potential of the dramaturgical

concept resides in its capacity to engage with the perceptual modes of the audience members. To this end, the creative team for *S2S* decided to construct an engagement space at the gallery outside of the main theatre. The engagement space was designed to introduce the audience members to the subject matter of the performance by encouraging them to interact with exhibits that bear the strongest relationship to Ashley's incarceration. As the space remained open from 9am until the end of each day's performance at 9pm (the production ran for five days in March 2014), the audience members could take their time to interact with the exhibits before and after the play.

Certainly, *S2S* is not the first production in theatre history to incorporate the gallery space as part of the overall experience of the performance event. Rarely do theatre performances exist in complete isolation from the surrounding social and cultural contexts that may contribute to the audience members' perception of the show. As the theatre scholar Marvin Carlson observes, "when we begin to consider the audience experience of the theatrical event, we should soon come to realize that the actual performance of the play is only a part (and historically not always the most important part) of an entire social and cultural experience" (1990: xiii). From the perspective of the audience members, the theatrical event does not necessarily begin at the exact moment when the house lights in the auditorium are dimmed, nor does the whole experience come to an abrupt end when the actors leave the stage after the final curtain call. Instead, as Carlson elucidates, "the physical appearance of the auditorium, the displays in the lobby, the information in the program, and countless other parts of the event as a whole are also part of its semiotic, and it is a rare production indeed that does not build at least some of these into the overall impression it seeks to make upon its audience" (1990: xiii). As such, the creation of an engagement space outside of the auditorium, with interactive exhibits on display, appears to be consistent with the semiotic practices of the theatrical tradition.

Due to the architectural contiguity between the gallery and the main theatre at Waterloo's Modern Languages Building, it was impossible for any audience member to miss the exhibits on display at the engagement space. However, the audience members could choose whether or not to explore the three exhibits before or after the actual performance. In fact, they could even decide not to explore any of the exhibits. The purpose of having the engagement space was not to force the audience members to understand the social and cultural circumstances that led to the creation of *S2S*, particularly Ashley's extended detention and subsequent death in solitary confinement. Instead, the three exhibits were designed to:

- 1) Give the audience members a sense of the physical and mental torments that Ashley had to endure while she was in detention;

As well as to:

- 2) Offer a preliminary indication of how her story might resonate with the personal experiences of the thirteen student performers in the show.

As a result, all three exhibits in the engagement space were dedicated to exploring either one of these two points. The first exhibit was called the "Solitary Confinement Cell," which replicated the dimensions (6 feet by 3 feet by 12 feet) of the actual prison cell in which Ashley resided before her demise. The audience members could enter this simulated cell in order to experience the feeling of being confined to a small area. As the interior walls of the cell were plastered with white paper, the audience members could leave their comments or other markings behind. The second exhibit was a video loop showing Performer M's (the actor who attempted suicide in real life) solitary dance on the bridge connecting the Waterloo campus and the South Campus parking lot along University Avenue. To see the video loop, the audience members had to look through a rectangular slit situated at the upper half of a mock-up prison door. This gesture of looking through a slit into a prison cell resembled the way in which the prison guards would check on

Ashley whenever she called for help. Standing outside and looking in, the guards eschewed all physical contact with their charge.

Finally, we come to the third exhibit known as the “Sound Station”. This exhibit included three different audio clips that were edited from the YouTube videos showing scenes from Ashley’s detention at the Joliette facility in Quebec and the Grand Valley Institution for Women in Kitchener. In creating the audio clips, I chose to generate a cacophonous mash-up of different voices belonging to Ashley, the nurses who attended to her, and the prison guards. In one of these sound clips, white noise was introduced at regular intervals to disrupt the flow of the conversation between Ashley and a female prison guard. In another sound clip, a nurse’s request for Ashley to sleep so that she could go home was reconfigured in such a way that the first half of the sentence was swapped with the second half, thus creating a repetitive loop that mirrored the monotonous rituals of prison life. Deprived of any visual cues, the audience members had to rely solely on the voices of the interlocutors in order to get a sense of the conditions under which Ashley lived as well as the ways in which she was treated by the prison nurses and guards. Perhaps it could be argued that even the nurses and guards themselves were deprived of cues – be they visual or auditory – regarding the severity of Ashley’s physical distress. But as long as a majority of the nurses and guards remain silent about the reasons for their passive responses to Ashley’s physical and psychological struggles (only a few prison officials have spoken briefly about the case in public), we can only speculate on the circumstances that prevented them from helping Ashley.

Taken together, the three exhibits in the engagement space were designed to give the audience members a sense of the issues that they would encounter in the actual performance. Like most art exhibitions, the audience members were invited to walk around the space and partake in an embodied interaction with each of the three exhibits. Along with the “media cube,”

which de-familiarized the audience members' encounter with such digital assets as photographs and videos belonging to other human individuals, the engagement space represented a key component of critical techno-dramaturgy as it engaged directly with the visual, auditory, and kinaesthetic senses of every person who visited that space. But apart from de-familiarizing the audience's encounter with digital media and engaging with their perceptual modes, the performance of *S2S* also included archival material such as online news reports, still images, and video footage that relate to Ashley's case. These digital assets complemented the re-enactment of Ashley's story through the weaving of auto-ethnographic narratives written by thirteen performers, who discovered a correlation between their personal histories and Ashley's life in prison. Yet the incorporation of digital material pertaining to her incarceration, particularly the video surveillance footage showing the final moments of her life, was not without controversy. Even though the footage has been available in the public domain for several years, featuring it in a public performance presented an ethical challenge concerning the artistic use of material showing the actual death of a human being. In the next section, I will examine the role of the archive in performances that seek to re-enact past events, so as to understand how the intermedial re-enactment of Ashley's story in *S2S* might serve as both an archival practice of preserving the *mediated remains* – i.e., the digital traces – of her death and an act of artistic reinterpretation based on the interplay between these remains and the embodied, auto-ethnographic performances of the thirteen student actors.

6.3 Death on Video: Performing Mediated Remains

The intermedial performance of Ashley's story in *S2S* constitutes an artistic reworking of the mediated remains of her death. As the live performative re-enactment of Ashley's life in solitary confinement intersects with the archival footage showing her struggles and eventual

suicide in prison, the actors and producers in *S2S* are confronted with serious ethical questions concerning the artistic use of material from the digital archive that contains the mediated remains of Ashley's death. For this reason, I claim that the incorporation of actual surveillance footage from the prison cell in which Ashley was held in solitary confinement is complicit in not only the archiving of Ashley's death, but also the act of reinterpreting her predicament through the interplay between video technology and the embodied performances of thirteen student actors. These actors have contended with various mental health issues, either on a personal level or in their interactions with family members and friends who happen to possess a mental disability. But while the student actors' decision to reveal their struggles with mental health could help to draw the audience's attention towards the mental health challenges that Ashley faced throughout her time in solitary confinement, it is the juxtaposition between the actors' physical existence on the stage and the video footage showing Ashley's death by asphyxiation that brings the relationship between video technology and death into stark relief.

We live in an era where cameras are so commonplace that they can be found in almost all digital devices that are currently available on the market. Anyone who wants to take a photograph or shoot a video clip of any living or non-living thing can do so at any time of day by turning to the camera application on his or her tablet computer or smartphone. As the media philosopher Marcel O'Gorman observes, "Today, we are all immortalized on the screen, though that screen may not be in a movie theatre" (2015: 12). The relative ease of capturing images in our daily lives might have contributed to the proliferation of videos depicting suicides, homicides, car accidents, and street-side shooting deaths on a variety of social networking platforms. In July 2013, a bystander along Dundas Street in Toronto recorded a smartphone video that captured the moment in which a police officer fired nine gunshots that killed a pocketknife-wielding teenager named Sammy Yatim aboard a streetcar ("Toronto Teen Streetcar Shooting" 2013). The video,

which was taken in the small hours of the night and uploaded to YouTube immediately after the incident, became the epicentre of a controversy surrounding the use of force by police officers in dealing with a lightly armed teenager who appeared to be mentally unstable (“Sammy Yatim ‘Wasn’t Stable,’ Says Witness” 2013). In Ashley’s case, it was a prison guard, rather than a bystander, who captured the video footage of her death. However, the guard did not use a smartphone but a digital camcorder to shoot the harrowing footage showing the slow and painful death of a young woman who was supposed to be on suicide watch.

Several months before her death at the Grand Valley Institution for Women on October 19, 2007, the prison administrators decided to place Ashley under suicide watch, as she had previously attempted to tie cloth ligatures around her neck. Having been instructed to keep watch on her behaviour in the cell at all times, the prison guards relied on closed-circuit television cameras within the cell and a digital camcorder to record her activities throughout the day. In the correctional service’s videos that have been released on YouTube, we can see the digital camcorder being employed by the guards whenever they needed to enter Ashley’s cell to keep her under control (“Ashley Smith Prison Video” 2011). While the surveillance cameras embedded in the ceiling of the cell captured images from a fixed position, the camcorder offered flexibility in terms of the angle at which a particular footage can be shot. From a legal standpoint, the footage captured by the camcorder would bear witness to the conduct of the guards in the event that their interactions with Ashley resulted in a major incident involving injury or death. In this way, the combinatory use of the video surveillance cameras and the digital camcorder served the dual, and somewhat ironic, role of preventing a catastrophe (the death of a detainee) from happening while anticipating the potential occurrence of that catastrophe and its legal implications. Here, video technology appears to operate as an exemplar of what O’Gorman has termed *necromedia*.

O’Gorman devised the theory of necromedia as a critical lens through which to analyze the relationship or “collusion,” as he calls it, between death and technology (2015: 15). As he points out in his recent book, which is aptly entitled, *Necromedia*, the finitude of the human being is intertwined with its technological nature. I say the title is apt because it explicitly acknowledges the finitude of the author as a technological being who knows how to harness the tools (e.g., language, research methods, and word processing skills) required for the production of a book. The book is a medium that exteriorizes and preserves the thoughts and memories of the author. And like all technological artefacts forged by the human animal, the book – and this entire dissertation, for that matter – would likely outlast its producer. The philosopher David Wills notes that if we accept that technology, as André Leroi-Gourhan and Bernard Stiegler have demonstrated, is “a matter of exteriorization, of the human reaching outside itself, [...] then it is also a matter of archivation” (2008: 10). In exteriorizing its memory through the production of the technological artefact, the human being, as Wills contends, produces an archive that accounts for the past in the present moment while remaining “available for a future retrieval” (2008: 10). This understanding of technology as a matter of archivation seems to correspond to O’Gorman’s point about the collusion between the finitude of the human being and its technological nature.

As O’Gorman argues in the opening chapter of his book, “to fully acknowledge human finitude is also to acknowledge our own technological being” (2015: 15). He further notes that it is not “the first use of a flint to crack a skull,” which is essentially a technological act, “that defines the protohuman (and hence prototechnological) moment, but memory of the task, the *repeated* use of the flint to perform the same task (O’Gorman and Stiegler 2010)” (O’Gorman 2015: 13). Thus, it is the human capacity to invent, and more significantly, *reuse* the tool that, as O’Gorman puts it, “exemplifies the ‘matter of archivation’ to which Wills insists we always *look back* upon as a species (2015: 13). In this way, the mortality of the human animal is inextricably

linked to its capacity to produce the technological artefact as an archive. It is on the basis of this relationship between the finitude of the human being and its technological nature that O’Gorman offers the suggestion that “[a]ll media, [...] by pointing at once to both our technicity and finitude, are necromedia” (2015: 15). For the prison guards presiding over Ashley’s activities in her cell, video technology operated as a means by which to watch out for any signs that their charge might be attempting to commit suicide. As the video surveillance cameras and the digital camcorder recorded Ashley’s activities and the guards’ interactions with her, these devices became complicit in anticipating the finitude of the human subjects (including Ashley and the guards) whose images had been immortalized in the footage.

Indeed, the history of the video camera bears witness to the collusion between death and technology that O’Gorman theorizes. In 1882, the French scientist Étienne-Jules Marey invented the chronophotographic gun. This device was capable of capturing and storing twelve frames in one second and on a single picture. Marey used his invention, which was probably the world’s first portable motion picture camera, to shoot images of animals and humans for the purpose of analyzing the mechanics of their locomotion (Burns 1997). In the first iteration of this “serial-shot camera,” Marey relied on “fixed photo glass plates” before turning to “modern celluloid” in 1888 (Kittler 1999: 124). The chronophotographic gun, a device designed for shooting moving images of people, animals, and inanimate things, had appropriated the butt and the barrel of the standard rifle and the cylindrical revolving mechanism of the Gatling rapid-fire machine gun. All Marey had to do then was to aim his device at a particular thing, be it living or non-living, and he could begin filming it by rotating the revolving mechanism. As the German media philosopher Friedrich A. Kittler asserts, there is a convergence between the history of the movie camera and the history of automatic weapons, as the “transport of pictures only repeats the transport of bullets” (1999: 124). “With the chronophotographic gun,” Kittler goes on to explain,

“mechanized death was perfected: its transmission coincided with its storage,” for whatever and whomever “the machine gun annihilated the camera made immortal” (1999: 124). Drawing upon Kittler’s observation on the link between death and media, O’Gorman adds that new media technologies, “from the two-way radio to the Internet, often originate in research programs guided by a logic of seek and destroy, and hence they are always-already about human death” (2015: 42). In light of the chronophotographic gun’s capacity to seek out people, animals, and objects and keep a pictorial record of their movement for posterity, the motion picture camera joins the gun in becoming a device of death.

For the prison guards watching over Ashley through the electronic eyes of the video surveillance cameras and the portable camcorder, video technology functioned as a safeguard against any potential litigation against their handling of affairs in the prison cell. According to a CBC news report, Valentino Burnett, the prison guard who recorded the camcorder video of Ashley’s demise, “came under fire for following orders not to intervene when Smith was choking” (“Ashley Smith Jurors Watch Video” 2013). As the report elucidates, “Burnett acknowledged under questioning [in court] that ‘in a perfect world’ he would have entered the cell to save Smith” (“Ashley Smith Jurors Watch Video” 2013). Burnett’s comment is indicative of the dominance of visual media in contemporary society, especially in light of the way that he and the other prison guards had prioritized the recording of Ashley’s final moments on video over the pressing need to save a human being who was asphyxiating right before their eyes. Perhaps if a perfect world were to exist, he might have disobeyed the order of non-intervention and proceeded to rescue Ashley, who was struggling to breathe. But he and the other prison guards were not only compelled to follow the management’s orders for fear of losing their jobs. Rather, they insisted on archiving their interactions with Ashley on video because the video footage would lend credence to their verbal and written testimonies in court. However, by

recording every move and every sound that Ashley made in her cell, the guards had unwittingly prefigured her death.

Long before that fateful October morning on which Ashley tied cloth ligatures around her neck and asphyxiated as a result of that, she had already been immortalized as a spectre in numerous hours of video footage. Even while she was alive, video technology had turned her into the “living dead”. After the tragic incident in the prison cell, members of the public could only come to know Ashley through the correctional service’s videos that were released online. Yet these videos only offer a glimpse of the complexity of her life. With the exception of people who were related to or acquainted with Ashley in a personal capacity, anyone looking at her story from afar can only learn of her existence through the video images of her life and death in solitary confinement. All of this seems to speak to O’Gorman’s observation on how we live in a culture where the recorded images of people, which are constitutive of what he refers to as *digital assets*, “will be disseminated in multiple locations and contexts while they are alive, and will remain in databases and media archives long after they die” (2015: 10). The sharing and storing of our digital assets on the Internet and on computer servers renders salient the intersection of our existential finitude with the media technologies that we produce. As O’Gorman observes in his discussion of the collusion between death and video in the film *American Beauty*, “today we are all immortalized on the unforgiving and unforgetful ‘big screen’ of surveillance systems, home movies, and incidental amateur footage, whether we like it or not” (2015: 56). Ashley was monitored on video for four years against her will, a procedure that continued until her tragic demise. As a result, the video footage containing the mediated remains of her death represents only a fraction of the captured images of her existence. Nevertheless, the use of this video footage in *S2S* invites a re-examination of what it means to incorporate the mediated remains – i.e., the digital traces – of a person’s death into an intermedial performance.

The use of archival material in theatre performance is by no means a new phenomenon. Dramaturges and directors often rely on archives to research the different dramaturgical approaches adopted by other theatre practitioners. For dramas set in a certain historical period, the archives provide crucial historical information that would directly influence the narrative content, the type of costume, and the set design of the performance. But archives are especially pertinent to performances that attempt to re-enact a particular historical event. Consider, for example, the amateur performers who gather in large numbers at famous battle sites across the United States to re-enact scenes from the American Civil War. Donning nineteenth-century military uniforms, with muskets and bayonets in tow, the re-enactors perform what Rebecca Schneider calls the “remains” of the American Civil War. I should emphasize that the “remains” to which Schneider refers are not human remains in the form of bones or organic matter but the nonhuman, artefactual remains that attest to the historicity of the Civil War and its participants.

As Schneider observes, the Civil War re-enactors turn to such archival evidence as witness testimonies, lithographs, and photographs as the basis upon which to re-enact a particular battle scene. The aim here is to capture as many details about that event as possible through the intersection of historical research and live performance. But besides relying on archival material in the re-enactment, Schneider notes that the re-enactors “also engage in this activity as a way of accessing what they feel the documentary evidence upon which they rely misses – that is, live experience” (2011: 10). “Many fight,” Schneider goes on to explain, “not only to ‘get it right’ as it was but to get it right as it will be in the future of the archive to which they see themselves contributing” (2011: 10). The Civil War re-enactments are more than a straightforward repetition of historical events. Instead, by physically performing the battle scenes and playing the part of the already dead, the re-enactors participate in the embodied act of reinterpreting the archival evidence that inspire their performances at the very site where the historical events occurred. In

the production of *S2S*, however, the re-enactment of Ashley's story takes place outside of its original context – that is, the solitary confinement cell at the Grand Valley Institution for Women. Nevertheless, the performance draws on a range of archival materials – particularly the correctional service's video footage and the various news reports on the case – that have been released in the public domain. Whether it is the re-enactment of battle scenes from the Civil War or the performance of Ashley's story in *S2S*, what Schneider refers to as “performing remains” entails the simultaneous archiving and reinterpretation of historical events through embodied performance. In this way, the present moment of embodied action folds into the historicity of the archive. At the same time, the performance of these “mediated remains,” as I call it, stands in anticipation of future reinterpretations of the archive in question.

The archive houses a past that resists closure. The past, according to Schneider, “is never complete, never completely finished, but incomplete: cast into the future as a matter for ritual negotiation and as yet undecided interpretive acts of *reworking*” (2011: 33). The embodied actions and the speeches that the re-enactors deliver in performance could serve to renegotiate the meaning of the archival materials that attest – albeit partially – to the veracity of an event that occurred in the past. “In this way,” Schneider elucidates, “events are given to be past, or to become past, by virtue of both their ongoingness and their partialness, their incompleteness in the present” (2011: 33). Because the past is always already incomplete in the present, any attempt to re-enact the past is therefore a performance of remains. Schneider believes that the performance of remains coheres with the logic of the archive, whereby “what is given to the archive is that which is recognized as constituting a remain, that which can have been documented or has *become* document [emphasis in the original]” (2011: 98). This “remain” which can or has been documented in the archive exists as a medium (be it a speech, a written account, a photograph, or a video clip) that mediates the relationship between the apparent immateriality of the people and

events of the past and the physical existence of the re-enactors in the immediacy of the live performance. However, the logic of the archive seems to demand a degree of originality among the remains that are housed within it. As Jacques Derrida informs us, the word “archive” – or *arkhe* in Greek – “names at once the *commencement* and the *commandment*” (1996: 1). The archive refers simultaneously to the place where documents are stored, and to the figure of authority – traditionally the *archon* or local magistrate in ancient Greece – who commands the place of the archive. As such, the archive commences at a particular place and under the command of an authority, such that the originality of the archive rests on its role as the authoritative source that lends credence to all documents placed under its care.

In Ashley’s case, the archival materials pertaining to her incarceration and death in prison were originally restricted to the confines of the institutional archives of the correctional service. Placed under the command of the service’s director, the entire archive, which includes the video footage showing Ashley’s final moments in her cell, was housed in the government’s database. If the superior court in Ontario did not issue an order demanding that the release of all video footage pertaining to Ashley’s time in prison, the archive would remain hidden from public scrutiny. This movement of the archive from the private domain of the prison system to the public sphere mirrors the transfer of power from one custodian to the next – i.e., from the government to the judiciary. However, as Derrida explains, whether the archive exists in private or in public, it always takes place in a dwelling, or what he refers to as “house arrest” (1996: 2). “The dwelling,” he elaborates, “this place where they dwell permanently, marks this institutional passage from the private to the public, which does not always mean from the secret to the nonsecret” (1996: 2). Within the archive lies the intersection between the topological (place) and the nomological (from the Greek *nomos*, or the law of the patriarch). Even a publicly accessible archive may harbour secrets that remain open to a future disclosure. While the place where the

archive is housed may be visible, the authority that commands and shapes its existence may not be. Derrida emphasizes that it is the authority, which is based on a social mandate, that decides what should remain or disappear, and it does not matter whether that which is nominated to remain or disappear is discursive or performative (1996: 3).

In the production of *S2S*, the performance of mediated remains in the form of the video footage showing Ashley's asphyxiation in her cell undermines the archival authority of the correctional service, as the footage enters into a dialogue with the auto-ethnographic stories performed by the student performers in the show. Rather than allowing the correctional service to define the way that the surveillance footage should be understood, the juxtaposition between the photographs and videos drawn from the personal histories of the thirteen performers and the video footage from Ashley's cell reveal the common experience that the performers and Ashley share as human beings with ambitions and aspirations. As these images are projected onto the three covered faces of the "media cube," the performers take turns to stand inside the illuminated cube and perform their stories. Standing behind the montage of video footage showing Ashley's death and the momentous events (birthdays, graduation ceremonies, family outings etc.) in their own lives, the performers' embodied performances in the "media cube" demonstrate the material basis upon which the images are rendered as archival records of human existence. Whether it is the video surveillance footage that captured the final moments of Ashley's life or the home videos that belong to the performers, the moving figures recorded in these visual archives allude to the materiality of human bodies. Even though these bodies may no longer be in existence by the time an embodied audience member encounters the visual archive in question (as is the case with Ashley), the fact remains that the figures recorded in the video footage exist as traces that mark the material existence of actual human beings, including those who have passed on.

As Rebecca Schneider notes, the archive is ironic in the way that it anticipates the return of the body (especially the body of a person who encounters the archive at a later time) while emphasizing the ephemerality and disappearance of the body (or bodies) that it preserves as disembodied linguistic, visual, or auditory traces. Indeed, we would do well to remember that one's encounter with the archive is always an embodied affair. The archive, as Derrida reminds us, calls into question the coming of the future, for "[a]s much as and more than a thing of the past, before such a thing, the archive should *call into question* the coming of the future" (1996: 33-4). "The question of the archive," he goes on to emphasize, "is not, we repeat, a question of the past," but rather "a question of the future, the question of the future itself, the question of a response, of a promise and of a responsibility for tomorrow" (1996: 36). The archive holds out a promise for a future interpretation that is to come. In this sense, the archive is not simply a storage facility for artefacts and traces that attest to the existence of human and nonhuman bodies of the past. Instead, in pointing back towards the historical past, it is always already looking forward to the return of the body through an embodied encounter between the object that has been preserved and the living person who comes before it.

S2S is more than just a straightforward attempt at documenting and archiving Ashley's story. By weaving the video footage showing the final moments of Ashley's life into a montage comprising of photographs and videos drawn from the performers' personal lives, the performance offers a reinterpretation of the circumstances that led to her demise in prison. The suggestion here is that it is all too convenient to fault the prison guards whom the coroner's inquest allege are complicit in Ashley's death, as they did not intervene to save her when she was seen choking and gasping for air. Instead, there is a need to interrogate the apparently inadequate understanding of mental health issues among the officials in the prison system. But rather than creating a documentary drama that seeks to uncover the "truth" behind Ashley's death in prison,

the performance of *S2S* explores the ways in which technology influences the audience members' interpretation of Ashley's story. "Technology," as the director Andy Houston explains, "makes viewing the lives of others a ubiquitous activity in our contemporary world and the very proliferation of this viewing suggests to me that we are experiencing an ever-growing crisis about the truth of what we see" ("*S2S* Program" 2014). Some audience members might have come across the numerous news reports on Ashley's case before they even heard about the performance of *S2S*. Some of them might also have watched the video footage showing Ashley's death by asphyxiation, which has been available on YouTube since the latter half of 2010. Having seen the harrowing footage online, these audience members might have formed their own opinions about the circumstances that led to Ashley's demise. Hence, the incorporation of the video footage into the auto-ethnographic performances delivered by the thirteen student performers in *S2S* serves to problematize the viewing of what is essentially the mediated remains of Ashley's death.

As Houston elucidates, the juxtaposition of the actual video showing Ashley's predicament in the final moments of her life with the embodied performances of the student performers as well as the photographs and videos drawn from their personal lives "may address the need to question this act of viewing [the visual traces of someone else's life], and to appreciate that now viewers are witnesses and therefore co-creators of 'truth'" ("*S2S* Program" 2014). Bearing witness to the interplay between the video footage showing Ashley's death and the images drawn from the personal histories of the performers as they deliver their auto-ethnographic performances in the illuminated "media cube," the audience members are able to establish alternative interpretations of Ashley's story that depart from the narratives offered by the correctional service, the coroner's inquest, as well as the press. As co-creators of the "truth" surrounding Ashley's plight in prison, particularly the inadequate treatment of her mental health issues that culminated in a policy of non-intervention among the prison guards, the audience

members encounter an intermedial archive consisting of the mediated remains of Ashley's death. Such an encounter with the mediated remains of someone's death (as captured by the video surveillance footage in Ashley's case) prompts a re-examination of how death might be perceived in the digital age, as the traces (blogs, photographs, and videos, for example) of one's material existence can be conveniently preserved in various forms of digital storage media and disseminated quickly and widely across the Internet. What follows is an examination of the ways in which the use of video surveillance footage and audio clips that attest to Ashley's incarceration and subsequent demise might affect the audience members' perception of death.

6.4 Spectral Encounters and the Embodied Perception of Death

Before the commencement of *S2S* in the main theatre of the Modern Languages Building, the audience members were offered the opportunity to interact with the three exhibits that comprised the Engagement Space at the theatre's gallery. The exhibits consisted of a mock cell that reproduced the dimensions of the actual cell in which Ashley resided before her death, a replica cell door with a slit through which a video projection of Performer M's swirling dance performance could be seen, as well as a set of audio clips that contained the voices of Ashley and the prison guards and nurses who attended to her at the Grand Valley Institution for Women and another detention facility in Joliette, Quebec. While I was involved in the design and creation of the Engagement Space, I did not participate in the actual construction of the mock cell and the replica cell door. Nevertheless, I was responsible for creating the audio clips at the Sound Station. These audio clips featured the verbal exchanges between Ashley and the prison officials (nurses and guards) who attended to her at the Grand Valley Institution for Women in Kitchener and the Joliette detention facility in Quebec. The original audio tracks that contained the verbal

exchanges were extracted from two separate videos that the correctional service had released to the public at request of the Ontario Divisional Court.

In the first video, a conversation transpired between Ashley and a group of nurses at Joliette who were persuading her to go to sleep, despite the fact that sunlight was streaming in through the window in her cell. Even though the nurses had threatened to use sedatives on her, Ashley insisted on staying awake.⁴² For several minutes, the nurses harangued her with pleas for her to go to sleep, but she refused to acquiesce. Towards the end of the video, one of the nurses declared, in a somewhat patronizing voice, that Ashley should go to sleep, so that the nursing staff may take their leave. “If you sleep, I can go home,” said the nurse. The poignancy of this sentence was hard to miss. Having attended to Ashley for a few hours that day, the nurse and her colleagues desired some form of respite. However, the thought of compelling a person to go to sleep against her will made the nurse’s plea sound unreasonable and self-serving. The sentence that she uttered struck at the heart of the problem that contributed to Ashley’s demise, which was the inadequate level of care offered by the prison system in response to the mental health issues that she had been grappling with throughout her four-year incarceration. As such, I felt that this sentence had to be featured in the audio clips created for the Engagement Space. But instead of using the sentence as it stood, I decided to invert the first and second clauses in the sentence, so as to produce a new version that sounded like this: “I can go home, if you sleep.” This new sentence was sutured to the original sentence uttered by the nurse at the Joliette detention facility. As a result, the coupling of the original sentence and the inverted version of it produced a cyclical

⁴² Looking at this first video, which reveals Ashley’s conversation with the nurses at the Joliette detention facility in Quebec, it is clear that Ashley was an intelligent young woman who knew how to reason with her custodians for better and fairer treatment.

effect that reflected the repetitive quality of Ashley's prolonged detention, as she was moved seventeen times across different detention facilities throughout Canada.

Once the first audio clip had been completed, I turned my attention to the next audio clip that focused on Ashley's detention at a prison in Kitchener. Looking at the second video released by the correctional service, I came across a sentence that encapsulated the attitude of some of the prison guards who attended to Ashley at the Grand Valley Institution for Women, the location where she spent the last days of her life. In the video, a female guard was seen peering through the slit of a cell door in order to monitor Ashley's behaviour. Looking in from outside the cell, the guard revealed her intention to induce a sense of discomfort in her charge. "I am standing here, looking at you, making you feel uncomfortable," the guard informed Ashley, who had requested to be left alone. While it could be argued that the guard was simply doing her job to ensure that her charge was not attempting suicide, a task that had already been delegated to the video surveillance cameras in the cell, her words seemed to express the sentiment of a bully rather than a custodian. Picking up on the unsettling quality of the phrase, I decided to invite three of Houston's performers to re-enact the conversation between Ashley and the prison guard. Speaking into a condenser microphone, one actor repeated the disturbing phrase uttered by the prison guard, while the other two actors took turns to articulate the stress that Ashley would likely have experienced as a result of the guard's scrutinizing gaze. Subsequently, these recordings were integrated into the audio track containing the prison guard's intimidating phrase, thereby creating a mash-up that alternated between the actual recording of the guard's verbal interaction with Ashley and the actors' re-enactment of that conversation. This second audio clip was placed alongside the first clip that featured the Joliette nurse's plea for Ashley to go to sleep.

While a discerning listener might have noticed the contrast between the sanitized studio recording (sanitized as a result of digital audio editing tools that shut out ambient noises) of the

actors' re-enactment of Ashley's conversations with the prison officials and the crackly audio tracks derived from the original correctional service videos, there was a spectral quality to the cacophony of voices belonging to Ashley, the Joliet nurse, the Grand Valley prison guard, and Houston's actors. As auditory archives that attest to the existence of these individuals in time, the recordings of their voices would live on even when they are no longer alive. Indeed, the audio clips at the Engagement Space, if properly preserved, would continue to exist in their absence. The fleeting existence of the human voice as it is spoken renders it susceptible to distortion and misremembering by those who hear it. As long as the echoic memory of the voice is not preserved by means of various audio storage media, it runs the risk of being forgotten over time. In *A Lover's Discourse*, Roland Barthes explains the ephemeral nature of the voice and how it is intertwined with the prospect of death: "It is characteristic of the voice to die. What constitutes the voice is what, within it, lacerates me by dint of having to die, as if it were at once and never could be anything but a memory" (1978: 114). The ephemerality of the voice is analogous to the temporality of life, as once the voice and the person who speaks it have come to pass, they can only exist as nothing more than a memory trace. "This phantom being of the voice," as Barthes describes it, "is what is dying out, it is that sonorous texture which disintegrates and disappears" (1978: 114). The "phantom being of the voice" that Barthes alludes to finds its expression in the way that human speech is always open to distortion, revision, and misremembering on the part of the listener. Such is the "fleeting nature of the spoken word," which, as O'Gorman elucidates, "is subject to a resampling by the receiver of the message, whose subjective interpretation ensures the impossibility of any stable meaning or subject" (2015: 13-4). In light of the temporal character of the voice, or what Barthes refers to as its "phantom being" that, in turn, calls to mind the spectre of death, the experience of the voice appears to be marked by its very absence. It is, in essence, a spectral encounter.

In examining the spectral quality of Brian Eno and David Byrne's 1981 album *My Life in the Bush of Ghosts*, Cary Wolfe observes that the sampling of voices from a wide range of commercial and private sources foregrounds the way that the recorded memory traces of life can outlive the death of the human individual. Eno and Byrne's album conveys a ghostly impression because the voices that feature in the recordings belong to people – the Arabic singers and the radio disc jockeys, for instance – who will continue to exist as auditory traces despite their physical absence in the world. As Wolfe notes, “what makes the voice the voice is not that it is presence [...] but that it is spectral” (2010: 297). The spectral existence of the voice lends itself to a future iterability that transcends the physical limitations of human finitude. In other words, the recorded voice will live on, even when the human person to whom the voice belongs is absent. But one could argue, as Wolfe points out, that the spectral quality of the spoken word might be undermined by the “permanence of the recorded voice” (2010: 297). Yet Wolfe maintains that it is precisely the “repeatability and iterability” of the “recorded voice” that “[testify] all the more to the radical absence of ‘every empirically determinable subject’ (to use Derrida’s phrase), to the *becoming-ghost* of its origin in a bush of virtuality that its own ability to be sampled feeds and populates” (2010: 297). What this means is that the voice is always already open to the possibility of repetition and iterative resampling, thereby transforming the voice into a ghostly spectre that lingers on even in the absence of its originator.

The voices that have been preserved in the audio clips at the Engagement Space for *S2S* also convey a ghostly impression, as the audience members encounter the recorded traces of Ashley's voice with the knowledge of her death at the Grand Valley Institution for Women in October 2007. Hearing the recorded voice of a young woman who is physically absent, the audience members confront the spectre of Ashley's existence at the Joliette detention facility and the Grand Valley Institution where she lived out the final moments of her life. This spectral

encounter with the vocal recordings that attest to the historical existence of a person who is no longer alive serves to remind the audience members of the intersection between the ephemerality of the spoken word and the temporality of life. And the spectrality of Ashley's voice also applies to the voices of the Joliette nurse who wanted her to sleep and the Grand Valley prison guard who was determined to make her feel uncomfortable. Once their conversations with Ashley had been preserved on an auditory storage device, the ephemeral voices of the nurse and the prison guard were instantaneously transformed into spectres that would linger on in their absence.

Even before their deaths, Ashley, the Joliette nurse, as well as the Grand Valley prison guard were already haunted by the spectrality of their voices, which, when recorded on an auditory storage device, marked their future disappearance in advance. In this sense, the audience members' spectral encounter with their recorded voices in the audio clips at the Engagement Space constitutes a mediated experience of death that inevitably emphasizes the prospect of their own absence in the future. Standing at the Sound Station with an MP3 player in their hands and a set of headphones plugged into their ears, the audience members' embodied interactions with the recorded voices of three people whom they have not met could potentially influence their perception of death as an inevitability that leaves its imprint in the form of memorial traces. And it is these memorial traces (writings, vocal recordings, video footage etc.) that attest to the historical existence of human individuals such as Ashley. Yet I must emphasize that the audio clips at the Engagement Space were designed to provide the audience members with a sense of what the actual performance in the main auditorium entails, and especially to prepare them for the appearance of the video images showing the final moments of Ashley's life. As such, the spectrality of the recorded voices in the audio clips at the Engagement Space is supplemented by the visual spectres that emerge during the actual performance. But as it will become clear in a

moment, these visual spectres did not only originate from the harrowing video footage of Ashley's death.

Halfway through the re-enactment of Ashley's story in *S2S*, the thirteen student performers turned the focus of the performance towards their own struggles with mental health issues. In order to deliver a series of auto-ethnographic performances based on their life experiences at home and in school, the performers took turns to situate themselves behind the three covered faces of the "media cube" on which photographs and videos drawn from their childhood were woven into a montage. As a result, there was always a human body standing behind the projection of photographs and videos on the three faces of the "media cube." But the point of situating the performers in the "media cube" was not only for them to perform their stories about the mental stresses that they faced. As they told their stories, the performers were gradually shedding their civilian clothes for the sterility of a white hospital gown. Stripping down to their underwear, the actors exposed their bodies to the scrutiny of the audience members, who could only see them through the montage of photographs and videos that occupied the covered faces of the "media cube". Nevertheless, the change of clothes marked the transition of the performers from university students with unique identities to the anonymity of prison detainees.

As each performer completed his or her performance in the "media cube," Performer AL, who played the role of prison guard throughout the show, would enter the cube and drag the actor off the stage. For a brief moment, there was no indication as to where the performer was being led. Then, video images would appear on the screens of the "media cube". Every time this video footage emerged, Performer AL could be seen pushing a new actor who had been dragged off the stage into a mock cell situated at the backstage area. As the footage was shot from a high angle, it was possible to see the full profile of the "imprisoned" actor. Some of the actors sat quietly on the rickety bed, which was the only object in the cell, while others made abusive gestures at the

surveillance camera that watched over them from above. I should add that this was the only time in *S2S* that the actors were featured in a live video feed. Once the “imprisoned” actor had spent a few minutes in the mock cell, Performer AL would enter the mock cell and drag the actor back towards the stage. Returning from their brief confinement, the actors formed a single file behind the “media cube”. The montage of photographs and videos drawn from their personal lives could still be seen on the three covered faces of the “media cube”. But none of the actors entered the cube for a second time. It was at this moment that the actual video surveillance footage showing Ashley’s death by asphyxiation began to appear on the screens of the “media cube”.

With each passing second, the audience members witnessed how a young woman struggled to breathe as she took a bunch of cloth ligatures and looped them around her neck. The clock ticked while the grip of the ligatures became tighter. Ashley was gasping for air, but the guards, who were keeping tabs on her from another room, did not intervene. They were told not to. Minutes passed, and it became obvious that Ashley’s life was ebbing away. With her face pressed against the floor, she stared directly at the surveillance camera that was hanging from the ceiling. From the perspective of the audience members in the main auditorium in which the performance of *S2S* unfolded, it felt as though Ashley was staring intently at every audience member, as her gaze seemed to have pierced right through the flat projection surfaces of the “media cube”. And then the final moment, that very second that separated life and death, arrived. She ceased to struggle, and her eyes remained wide open. Sensing that the audience members might be overwhelmed by the content of the video footage, the video designer for *S2S*, Paul Cegys, decided to stop the projection of that scene. As the performance came to a close, the thirteen performers gathered in front of the “media cube”. Using a bunch of cloth ligatures, they created a lengthy cord that symbolized their solidarity with Ashley’s predicament during her four-year incarceration.

In a gesture of solidarity with Ashley's spectral existence in the video footage showing the final moments of her life, the thirteen student performers in *S2S* placed themselves under the watchful gaze of the video surveillance camera in the mock cell at the backstage area. This juxtaposition between the immediacy of their physical presence on the stage and the mediating capacity of video surveillance technology collapses the distinction between what Maaïke Bleeker describes as the "theatrical gaze" and the "cinematic gaze." In her study of visual practices in the theatre, Bleeker suggests that the theatrical gaze differs from the cinematic gaze, as the former does not "necessarily capitalize on voyeuristic pleasures" that might otherwise objectify the bodies that appear in the performance. Instead, contemporary stage performers often enjoy a "direct and explicit relationship with the audience that contributes to the intensity of the theatre as a "live" experience, directly present and visible over there" (2011: 133). Because the performers are supposed to be "live" and present on the stage, they are able to "look back at the audience" and challenge them "to make a distinction between the act of showing and what is actually there to be seen" (2011: 133). This feedback loop between the stage performer and the audience seems to be absent from the cinematic gaze, as it is difficult, if not impossible, for the actors in a film to engage with and respond to the audience members directly. Bleeker's characterization of the theatrical gaze assumes that the notion of *presence* is what sets the theatrical experience apart from its cinematic counterpart. But as each of the thirteen performers in *S2S* entered the mock cell at the backstage area, the immediacy of their physical presence on the stage was undermined by the live video feed from the mock cell that transformed their existence into visual spectres. Appearing as images on the video feed, the performers were not simply present in the sense of "being there" on the projection surfaces of the "media cube," nor were they absent just because they had left the physical confines of the stage. Instead, the video images of the performers' confinement in the mock cell foregrounded the spectrality of their existence in the performance.

Commenting on the visuality of spectres, Derrida notes that in the technology of the image, the notion of the “living present” is spectral. Once the camera has captured our image, he goes on to explain, “this image will be reproducible in our absence” (2002: 117). And because we are aware of the reproducibility of our image, “because we know this *already*, we are,” as Derrida observes, “already haunted by this future, which brings our death” (2002: 117). Like the recorded voice, the recorded image of the human being anticipates the future disappearance of that being. “Our disappearance,” as Derrida reminds us, “is already here,” for “[we] are spectralized by the shot, captured or possessed by the spectrality in advance” (2002: 117). In other words, the spectre is always already there in the living present. When the student performers in *S2S* were dragged off the stage and pushed into the mock cell at the backstage area, the immediacy of their physical presence on the stage was temporarily suspended. The audience members could no longer verify the existence of each performer by tracing their gaze through the performance space. Instead, a live video feed from the mock cell at the backstage area provided the only substantive verification of the performers’ existence as living beings. Just as the scene of Ashley’s asphyxiation was captured by the video surveillance cameras in her cell and preserved as spectres that linger on in her absence, the live video feed in the mock cell transformed the physical presence of the performers into spectres that marked their future disappearance in advance. “A spectre,” as Derrida understands it “is both visible and invisible, both phenomenal and nonphenomenal” (2002: 117). Suspended between the ephemerality of the living present and the materiality of the recorded image that preserves the fleeting moment for posterity, the spectre becomes “a trace that marks the present with its absence in advance” (2002: 117).

As spectres in a live video feed projected on the “media cube,” the performers were both present and absent at the same time. While the audience members could perceive the performers’ mediated presence through the real-time surveillance footage on the projection screen, the

conspicuous absence of these actors from the immediacy of the stage was reinforced by the spectral quality of the video images showing their brief confinement in the mock cell. When the performers finally returned to the stage, the audience members were confronted with the video footage showing Ashley's death. In turn, the spectrality of Ashley's image in the archival footage began to intersect the rendering of the performers' confinement in the mock cell as visual spectres in the live video feed projected on the "media cube". Sitting at the back of the auditorium during the opening performance of *S2S*, I saw several audience members shifting queasily in their seats as they witnessed the juxtaposition between the archival footage showing the final moments of Ashley's life and the video images of the performers' layover in the mock cell. Confined to their seats in a darkened auditorium, the audience members had to grapple with the morbid visual details of Ashley's death by asphyxiation while attempting to make sense of how the live video feed from the mock cell could have marked the performers' future disappearance in advance.

Despite their physical presence alongside the harrowing footage featuring the scene of Ashley's demise, the performers were already standing in anticipation of the inevitability of death, as the video images of their confinement in the mock cell would likely live on in their absence. For the audience members, their spectral encounter with the recorded images of Ashley's death and the temporary confinement of the student performers in the mock cell might have affected their perception of death in a world that has been subjected to round-the-clock video surveillance. Whereas instances of death were once related by way of spoken and written narratives, video technology has opened up a different way of perceiving the existential finitude of human beings. In a single shot, the video camera is capable of immortalizing the life and death of the human individual as spectres preserved in the materiality of storage media. And with the aid of the Internet and other digital technologies that facilitate the rapid transfer of data, it is now

possible to access these spectres from any location in the world and at any time of day. At the end of the performance of *S2S*, when the audience members decided to depart the auditorium, they too had become spectres, as video surveillance cameras situated above the theatre's entrances began capturing and recording images of their faces. I should note that the production team did not install these cameras for the show. Instead, the surveillance cameras, which were being monitored by the university's security service, were already there in the first place. Perhaps at some point in the future, the moving images captured by the cameras would resurface in the absence of those audience members who might have been oblivious to the presence of the surveillance device above their heads as they left the auditorium.

Conclusion: Next Steps

Throughout this dissertation, I have examined the ways in which intermedial performance might affect the audience members' perception of human-machine interactions. All seven of the intermedial performances that have been analyzed in this study involve the live interplay between the human participants in the performance event and different forms of technology, ranging from a simple bicycle to such sophisticated technological implements as cellphones, handheld computers, digital video, robotics, and artificial intelligence (AI) systems. Drawing upon the theoretical perspectives espoused by scholars working in new media, performance studies, and the philosophy of technology, I have argued that intermedial performance artists reinvigorate the role of the human body by deploying a critical techno-dramaturgy that mobilizes embodiment as a strategy for shaping the audience members' perception of how humans relate to technology. As I have discussed in chapters 3 and 4, some intermedial performances, such as Blast Theory's *Rider Spoke* and Susan Broadhurst's *Blue Bloodshot Flowers*, incorporate the audience members as participants who contribute to the creative process through their interactions with the digital

and analogue technologies featured in the performance event. In *Rider Spoke*, the audience members take on a performative role by traversing the cityscape on bicycles in order to discover recorded stories hidden at specific places in the city. Using the locative technology known as “Wi-Fi Fingerprinting” and a handheld computer that has been mounted on the handle bar of a bicycle, the audience members can choose to record their personal stories and store them at the places that they have visited. By suggesting an alternate use of the handheld computer as a platform for sharing stories with strangers, *Rider Spoke* frustrates the audience members’ familiarity with the conventional functions of the technological devices that they encounter in their daily lives, and also the ways in which they might be embodied with these technologies. Such an effect on the audience members’ perception of technology, as I have endeavoured to demonstrate in this study, could potentially augment their critical awareness of the ways in which the relationship between humans and technology is impacted by the rapid development and use of new technologies in contemporary society.

In light of the creative engagements between human beings and various technological devices within the same performance event, intermedial performance artists are able to develop dramaturgical strategies that challenge the audience members’ perception of how these technologies relate to their own bodies and the surrounding world. In an effort to understand the ways in which intermedial performance might potentially affect the audience members’ perception of the relationship between humans and technology, I have focused my analysis of the seven performance projects featured in this study on addressing the following three issues: the interplay between embodiment, technology, and space in urban performances such as *Rider Spoke*, the intersection of performance and techno-anxiety, as well as the influence of the transhumanist rhetoric of disembodiment on cyborg performance and the staging of disability. All of these issues were explored in chapters 3, 4, and 5, respectively. In the final chapter, I

looked at the relationship between video technology and death by examining a creative performance project that experimented with my concept of critical techno-dramaturgy as a dramaturgical strategy for influencing the audience members' perception of the interface between humans and technology. As I have noted in the introduction to this dissertation, the issues that have been explored in the study are by no means an exhaustive list of the substantive and stylistic qualities of intermedial performance. Instead, the factor that unifies them is the primacy of the body in the audience members' interactions with the human performers and the technological devices featured in the intermedial performance event. But due to the constraint of space, there are issues concerning the social, cultural, and economic implications of intermedial performance that I have not been able to address in this dissertation. Chief among these issues are questions pertaining to the effects of human-machine interaction on the human perception of time, as well as the ways in which the technological devices that facilitate the virtual exchange of information between people in contemporary society might be complicit in obfuscating the role of embodied labour in digital communication.

Over the past few decades, communication between human beings have shifted from traditional mail and landline-based telephony to wireless mobile telephony, emails, and other types of Internet-based communication. As a result of this massive transition to digital communication across the world, the time taken for the exchange of information between people located far away from each other in different time zones has been significantly reduced. Whereas a letter sent by traditional mail would have taken weeks to arrive and a phone call made on a landline telephone would require the intervention of a switchboard operator, the use of emails, cellphones, and text messaging systems has made it possible to communicate simultaneously with multiple people without expending too much time. But while the time taken for the exchange of information has been reduced, it seems that the digital communication methods (the

sending of emails and text messages, for instance) that we employ in our daily lives might have obscured the role of the body and the labour that it performs in digital communication.

As the human participants in the so-called “digital economy” turn to sophisticated new media technologies (such as smartphones and mobile computers with wireless Internet access as well as smart watches with computing and email functions) to perform a variety of leisure or work-related tasks, more time is also being devoted to the use of these digital devices for the purpose of communication. Digital communication tends to take place round the clock, with no apparent starting and ending points. A piece of digital communication sent by a superior at the workplace, a friend, or even a family member would often necessitate the delivery of a quick response. Sometimes, the subject of the piece of communication might be a matter of great import, and the pressure to respond to it in the shortest time possible might be justified. At other times, however, the impetus to respond quickly to a piece of digital communication seems to be a compulsive behaviour engendered by the fast pace lifestyle of our contemporary technoculture. What gives in this round-the-clock engagement with digital communication is the amount of time we spend on rest and recuperation, as the state of sleeplessness becomes ever more pervasive in our lives.

The issue of sleeplessness in relation to digital communication is pertinent to the topic of my dissertation, which examines the ways in which intermedial performance might influence the audience members’ perception of human-machine interaction. As intermedial performance artists turn to digital technology in order to fashion performances that foreground the relationship between human beings and the digital media tools (emails, text messages etc.) that facilitate round-the-clock communication between individuals located in different places and time zones, the role that the body plays in these digital communicative acts has become an important point of contention. How is the body involved in the communicative practices that transpire between

individuals on the Internet and across a myriad of text messaging platforms? What pressures might the body face as it participates in digital communication throughout the 24-hour day, with little time left for sleep? What does it mean to live in a state of sleeplessness, where the time spent on embodied labour seems to be encroaching on the time required for the body to rest and recuperate? Throughout the preceding chapters of this dissertation, I have explored the ways in which the mobilization of embodied experience in intermedial performance might affect the audience members' perception of human-machine interaction. Moving forward, I am interested in understanding how the body and the embodied labour that it performs in digital communication could potentially influence the human perception of time. To this end, I plan to devise a new intermedial performance project that will examine the intersection of embodied labour and digital communication in a public performance that takes place throughout the night, as the human body enters into a state of sleeplessness that is partly induced by our decision to participate in round-the-clock communication through the digital devices that are constitutive of our contemporary technocultural existence. But before I expand on what my new creative endeavour might entail, I would like to explore the idea of sleeplessness and its potential effects on the human experience of time.

In his treatment of sleeplessness and the intensified experience of time in the world of 24/7 connectivity, Jonathan Crary asserts that in the “non-stop life-world of twenty-first-century capitalism,” there appears to be “a generalized inscription of human life into duration without breaks, defined by a principle of continuous functioning. It is a time that no longer passes, beyond clock time” (2013: 8). The clock, particularly the 24-hour digital clock, has come to condition our perception of time as a continuous flow that appears to be commensurate with the seemingly endless series of activities that we fashion for ourselves. Whereas our forebears would conform to the strictures of a familiar routine, waking, working, and sleeping at designated times

in the day, most of us are now willing to stay awake in the middle of the night to check our email accounts for incoming mail, or to send a piece of digital communication to someone located miles away. The distinction between day and night has been distorted by the irregularity of our sleep patterns and the extension of our productivity into the depths of night. Whether we are required to work in the day or to tend to the night shift, most of us seem to be plagued by a perpetual state of sleeplessness as we elect to remain connected to the technological means of digital communication.

“Sleeplessness,” as Crary explains it, “is the state in which producing, consuming, and discarding occur without pause, hastening the exhaustion of life and the depletion of resources” (2013: 17). He believes that our world has been conditioned by the 24/7 cycle of production and consumption, whereby the technological devices that are sold on the market are designed to solicit the labour and attention of the people who use them in their quotidian lives. Put differently, it appears that our contemporary technoculture is perpetuating the condition of sleeplessness. Crary believes that we are complicit in this condition of sleeplessness, as we invest a substantial amount of our time and energy in communicative acts that take place virtually on our digital devices. His contention is that this intensified experience of time as continuous and brimming with activities would have a significant impact on the embodied labour of human beings who engage in digital communication. He argues that the “only consistent factor connecting the otherwise desultory succession of consumer products and services” in our contemporary technoculture “is the intensifying integration of one’s time and activity into the parameters of electronic exchange” (2013: 40). As more of our leisure and work-related activities are shifted to a digital environment, the intensification of our experience of time and the perpetuation of the state of sleeplessness would be rendered salient.

Crary observes that corporations and government entities like the military are trying to discover new ways to minimize the time needed to make decisions, so as to speed up the process of economic productivity. But more significantly, he claims that such research endeavours are poised “to eliminate the useless time of reflection and contemplation” (2013: 40). He asserts that this is “the form of contemporary progress” that is characterized by “the relentless capture and control of time and experience” (2013: 40). Crary might be overstating his point here by suggesting that we have ceded all control of our experience of time to an economic regime that seeks to increase productivity, and therefore the economic value of labour, by technological means. But rather than dismissing his observation as alarmist, I plan to use my concept of critical techno-dramaturgy as a dramaturgical strategy for devising an intermedial performance that investigates the impact of digital communication on the human perception of time and the ways in which embodied labour is understood in relation to human-machine interactions.

Gesturing towards the future by way of a new creative endeavour, I will be working with the director of the Critical Media Lab at the University of Waterloo, Marcel O’Gorman, on the development of a performative endurance project entitled, “The Burden of Communication”. This is an intermedial project that will take place in the near future. Turning the focus of computer-mediated communication back onto the body, the project will explore the ways in which digital communication methods disguise the role of embodied labour in our communicative acts online. In an age where emails and text messages are exchanged 24/7, with people communicating round the clock and through the night like labourers tending to the “graveyard” shift, this performance seeks to reveal how the efficiency of digital communication systems obscures the body’s participation in the construction and exchange of messages in the virtual environment. In essence, this is a performance about the burden of communication. By situating the performance at a

public park in Kitchener, the project seeks to gradually unravel the guise of disembodiment that shrouds the digital communicative acts – emails, text messages etc. – that pervade our lives.

As mentioned earlier, the concept of critical techno-dramaturgy consists of two inter-related approaches. The first approach, “Intermediality and De-familiarization,” entails the interplay of different media technologies in the same performance event. It is hoped that the audience members will be de-familiarized by the juxtaposition of these media technologies and the different technological affordances that they bring to bear on the performance. The second approach, “Interactivity and Perceptual Engagement,” aims to engage with the perceptual modes of the audience members through their embodied participation in the intermedial performance. Combining these two approaches, the plan is to have a group of audience members (each wearing a headlamp and a high visibility vest) take turns to tow wagons around the Victoria Park loop adjacent to the Kitchener Clock Tower. For each email message, text message, or other digital communication received by the performer, he or she must place a brick into the wagon. Bricks will be located at the foot of the clock tower, and will be added after each loop around the track. An LED “read-out” display at the side of each wagon will count the number of bricks that have been loaded onto the wagon. With the clock tower serving as the core around which the procession of brick-laden wagons revolves, the correlation between the flow of time and the physical burden of communication will be rendered salient. For amid the flurry of communicative activities that transpire between people on the Internet and various information sharing platforms, perhaps we should consider the burden that is being placed on our body as we engage in digital communicative acts that could potentially alter our perception of time.

“The Burden of Communication” embodies some of the key ideas developed in this dissertation, such as the production of social space through the performative use of mobile technology (the focus of chapter 3) and the mobilization of embodied relations between the

human body and prosthetic devices (as discussed in chapter 5). By holding the performance in a public park, where audience members will be invited to haul brick-laden wagons all through the night, this performative endurance project aims to foreground the body's performance of embodied labour in digital communication, as more bricks will be added to the pile whenever a new piece of communication (email or text message) is received on a smartphone or a mobile tablet. These digital devices that the audience members employ in the performance will serve as prosthetic extensions that facilitate the sending and receipt of communication with people located in various places and time zones across the world. But rather than discounting the role of the body in the digital communicative acts that transpire between individuals through the exchange of emails or text messages, the project will emphasize the physicality of the body's interaction with such digital communicational prostheses as smartphones and mobile tablets by establishing a connection between the exchange of digital communication on digital devices and the embodied labour involved in hauling brick-laden wagons.

As the audience members participate in a procession of brick-laden wagons around a clock tower situated in a public park, the purpose of deploying a critical techno-dramaturgy in "The Burden of Communication" is to encourage the audience members to critically reflect on the ways in which the body's performance of embodied labour in digital communication might affect the human perception of time. With intermedial performance artists turning to an ever-increasing range of sophisticated technological devices in the production of intermedial performance, we would do well to recall David Wills' advice on the importance of "[reserving] the right to *hold back*" and "not presume that every technology is an advance" (2008: 6). Wills' recommendation is instructive, for it behoves us to guard against the tendency to fully invest ourselves in the alluring prospect of unrestrained technological progress without paying due attention to the impact of digital technology on the human condition. It is here that a critical

techno-dramaturgical performance might be suitably poised to foster critical reflection among the audience members on the potential perceptual and socio-cultural effects of human-machine interaction. For no matter how technologically elaborate an intermedial performance might appear to be, the value of a critical techno-dramaturgical approach to the production of theatre performance resides in its capacity to set the audience members thinking about the philosophical and practical complexities that shape the relationship between human beings and technology. Thinking back even as we move forward, our embodied performances with technology unfold an opportunity to strive towards a clearer understanding of how the human body might be entwined with the very machines that it creates.

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