WAITING FOR A ROBOT GODOT: THEORETICAL MUSING ON CYBORG THEATRE

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Recent years have seen an explosion in cinema technology, with the introduction of computer-generated characters becoming commonplace in film. On stage, when we move away from screens and 'filmic' characters (such as the on-screen narrator played by Laurence Olivier in the 1986 West End production of the musical Time), it is natural to see that 'physical' robots are a potential theatrical equivalent of the computer generated film actor. This paper extensively discusses the theoretical implications of cyborg thespians and the way the audience perceives this potential innovation. A follow up paper in this journal briefly describes the technical process involved to produce a well-known play using robots and provides a brief comparative analysis and interpretation of the performance. The initial play chosen for this robot experimentation was a relatively recent example of tragicomedy, Samuel Beckett's *Waiting for Godot*.

INTRODUCTION

We live in a world of cyborg poetics, a world in which we constantly dance with technology. Our daily lives are surrounded by, immersed in, and intersected by technology. This integration has a long historical trajectory, and one that has certainly been troubled, filtered, and reflected through literature, film, and theatre.

There exists a long and rich history of technology being integrated with theatre, dating back to the ancient Greeks. These have ranged from tools used in the mechanics of theatre (winches and revolves for example), the integration of complex props into performances, the use of realistic mannequins and puppets, to the use of technological themes within the narratives themselves. Historically, following Aristotle's elements of drama; theatrical forms that rely on technological effects are named as a 'spectacle', and are often considered as entertainment rather than serious drama (Laurel, 2013).

Theatrical performance has also historically reflected the surrounding contemporary social, cultural and technological conditions. There is a long history of theatre practitioners investigating and trying out computer technology; however the late 90s showed an increased amount of experimentation in performances. During this period, the rapid pace of technological development was reflected and mirrored in performance contexts in theatres all over the world (Dixon, 2007). This upsurge in multimedia performance demanded of scholars and reviewers a new critical language to accurately describe and analyse the work of this nature.

Initially the majority of productions utilizing such digital technology focused on physical apparatus, such as video screens ('non-human' players), onto which linear ideas were inscribed; where the medium becomes the meaning (McLuhan and Fiore, 1967; Moser et al 1996; Kaye, 2007 and Gates, 2010). Theatres often use frames or screens as windows through which to view alternate scenes at remote locations, correlating with the pervasive and ubiquitous screens that constantly clamour for our attention in our everyday lives (movie screens, televisions, computers and phones). However, the acceptance of screen based technology on stage has not been universally positive and many push back against the changes (Saltz, 2001) :

> 'Consider the impact of injecting linear media into a live theatrical performance … The medium forces the live actor to conform rigorously to it. Such a performance combines the worst of both theatre and media: it lends the live performance a canned quality without endowing it with any of the film or video's advantages … It is no wonder that extensive use of linear media has never become more than an occasional gimmick in the theatre.' (Saltz, 2001)

Linear media projections have given way to interactive digital devices as new technologies are developed and subsequently introduced and experimented with in performance contexts. Artists continue to push the boundaries of old and new media in their efforts to explore the ongoing relationship between technology and human bodies. Traditionally, technologies have had a tendency to contain and limit bodies, fixing them on screen, as if viewed through lenses. In the theatre context, the appropriation of these technologies has sometimes reiterated or exposed these restraining boundaries (Parker-Starbuck, 2011).

In addition to the prevalence of projected media on stages, the 90s also saw the introduction of telematics based performances – synchronous global performances delivered over telephones, video conferencing and internet connections became possible. These performances investigated the link between our physical bodies and global environments, exploring the ideas of connectivity promised by these enabling technologies (Kozel, 1994; Auslander, 1997; Auslander, 2002 and Sermon, 2004).

The relationship of performers and technologies on stage has shifted, in the late twentieth and early twenty-first centuries, there started to appear more integration between the performers and the technologies, a form of symbiotic co-presence. Two major works from the Riverbed Dance Company, *Biped* and *Ghostcatching* reflected the body's changing relationship with technology. Both these projects used motion capture technologies to translate the body's movements into animations that could either dance alongside their originators or be projected independently. These projections literally became remote extensions of the original body (Cunningham and Jones, 2002).

Recently, we have also started to see artificial characters on the stage, such as the one introduced in Richard Mawell's *Joe* (2002). Although the robot does not literally merge or interact with other live bodies in this piece, the very introduction of such technology on stage introduces the concept of a whole new era of *cyborg theatre*, which will be the primary subject of this paper.

The word 'cyborg' permeates modern culture, demonstrating a need for a radical rethinking about human positioning in the world. Our human subjectivity, seen in relation here to the digital technologies that surround us, becomes a shifting, difficult concept. Some argue that we are already cyborgs and therefore there is no need to question the shift; that humans are slipping into the technology world, appearing only as projections as we are becoming fully immersed in the technology (Caygill, 1997 and McKenzie, 2001).

The concept of cyborg theatre reflects a form of engagement with technology that has shifted over time, to reflect not only conceptual fears about technology's encroachment, but also an embracing of 'new technologies' in content and form. Like a laboratory, a theatre is often seen as a space for experimentation, for introducing old ideas anew, for developing what hasn't been able to be articulated in other forms. Cyborg theatre can be a space for cultural human-machine investigations, interrogating the intersections between science, technology and art (Parker-Starbuck, 2011).

Mitchel (2006) believes that the use of advanced digital technology can create new interface metaphors between bodies, text and technologies – the use of technology can contribute to the dramaturgy of the text itself. Technology itself can be used as a 'subject' onstage and assume agency. Others, such as Parker-Starbuck (2011) propose the idea of digital technology as a form of mask which needs an imaginative rather than literal integration between technologies and bodies to produce authentic cyborg theatre.

An artificial consciousness permeates globalized societies; technology is all around us, in science, in science fiction, in daily life. This relationship continues to be processual,

technologies continue to move forward, assisting or, perhaps, encroaching on the human body. In the field of theatre, a new, radically inclusive notion of 'universal subject' becomes necessary and a new critical language and way of thinking about theatre and performance becomes necessary.

However, one sees the use of technology in theatre, there is no doubt that the theatre of the late twentieth and into the twenty-first centuries are shaped by cultural processes. As the representational, visible bodies on stage merge into the technology, Phelan (1993) proposes a new 'inclusive representational framework' - suggesting that the technology may efface their 'representational visibility' but in the process they are re-marked as something new, entering a cyborg sensitivity.

This paper discusses a project designed to push the boundaries of what is traditionally described as theatre; providing a sterile environment where machines perform on a stage, robotically reciting lines. A form of cyborg theatre that challenges and re-examines the 'sensually different atmosphere' of theatre defined by Glasser (1955). The initial play chosen for this experiment is a relatively recent example of tragicomedy, Samuel Beckett's (1969) *En Attendant Godot*, rewritten and translated as *Waiting for Godot*.

ROBOT BODIES

The term *cyborg* was first used in 1960 to describe human-machine interfaces (cybernetic organisms) which could adapt to new environments, specifically space travel (Clynes and Kline, 1995). These cyborgs were intended to taken care of tasks automatically and unconsciously, leaving their creators free to explore, to create, to think, and to feel.

Researchers report that humans prefer human-like robots (over machine-like robots) to perform in human-like capacities, such as: actor, instructor, sales representative, office clerk, food carrier, museum tour guide, and hospital messenger (Goetz et al, 2003). The communication mechanisms rely on many aspects of 'human-like' attributes. One obvious form of human behavior important in theatre is natural language processing (Zhao, 2006). Hence, to act the robot must have a verbal communicative medium. Additionally, they may also provide interactive measures via sensory, cognitive, and emotional means (Libin and Libin, 2004).

Robots that have human-like hands and arms can make gestures such as waving and pointing (Behnke, 2008), while robots with moving eyes/heads may have facial recognition and the ability to track a person regardless of where they are. Social robots, like humans, should also evoke appropriate emotional responses. They are capable of interacting both verbally and

non-verbally (Zaho, 2006). This means that as with humans, the robot's actions as a whole are important to communication, not purely their voice and facial expression.

Among all factors of human-like robots, the appearance of the robots is the most important. Studies have offered evidence that perceptions of the robots can change, simply by altering how they appear (Goetz et al, 2003). According to Mori (1970) humans also generally view movement as a significant sign of life. Thus movements must be made to the humanoid's physical appearance in order to establish a sense of life. For example, gaze direction and facial expression are two techniques utilized by some human-like robots to portray different facial dynamic ability (Zaho, 2006). General movements of the arms and legs should follow this dynamic approach (Behnke, 2008). In summary, to perform, robots should be capable of doing just about everything that humans can do on a stage, including similar degrees of movement throughout the body.

McLuhan and Moos (1997) describe how we often see technology as an extension of our bodies, perhaps a response to existential and spiritual uncertainties, as we try to leave our fallible mortal bodies behind. A range of modern technologies are able to reconfigure our bodies as *"dynamic fields of action in need of regulation and control"* (Cartwright, 1995). The term cyborg can be viewed in both a literal and metaphoric sense, asking questions regarding what it means to have a body, to share a body, and what it means to lose physical control of your own body (Parker-Starbuck, 2011).

The concept of robot theatre raises a number of questions regarding the representation of the human body on stage, providing an innovative site for exploring and experimenting with these ideas. If robot theatre is to progress, and to be used to help understand the impact of technology on human bodies, then the complex relationships between physical spaces, human bodies and technology needs to be examined. Removing humans from a stage perhaps moves us closer to an understanding of a post-human condition (Isherwood, 2010).

'Affect is also theorized in relation to the technologies that are allowing us to 'see' affect and to produce affective body capabilities beyond the body's organic-physiological constraints, The technoscientific experimentation with affect not only traverses the opposition of the organic and the non-organic; It also inserts the technical into felt vitality, the felt aliveness given in the pre-individual bodily capacities to act, engage, and connect.' (Clough, 2007)

Technology itself, can call the materiality of the body into question. What do identities become if they are viewed through a media lens or affected by technological augmentation ? Human bodies are increasingly abstracted, abjected, objectified through distance, media, commodification and technology (Parker-Starbuck, 2011).

'Through diverse technologies of performance … makes a positive gesture towards the cyborgian nature of postmodern female subjectivity's 'lived body' – the body as it is lived by its owner, which can only be perceived as coexistence of body parts. Still, we ask if this is only another version of 'the metaphorical body', 'the body as representation' … Or is this something else, a much celebrated at least theoretically, post-humanist version of the body, the body as surface, for instance ?'(Tadashi, 2006)

A number of academics and researchers have asked if we should we lament the loss of the organic body Cartwright (1995). Stelarc is an Australian performance artist whose works focuses heavily on extending the capabilities of the human body. As such, most of his pieces are centered on the concept that the human body is obsolete. However, even in his most extreme works, Stelarc himself remains the subject of his own objectification (Lehmann and Szatkowski, 2004). In reality, technology development is often led by technological determinism, which feels that human bodies can naturally co-exist with technology as long as humans remain in control.

This paper is primarily concerned with audience response and assessing and analysing the potential acceptance of cyborg theatre. An early example of this type of performance was Richard Maxwell's *Joe* (2002), where a life-sized robot enters the stage representing the final stage of the main character's life. The robot form of Joe is shown as a mechanical body that might evoke a negative reaction from the audience – certainly the human form becomes abject in favour of robotic technology, and the robotic technology becomes the abject for the living human audience. This play situates the body on stage as either fixed form : human or robot.

'… what is needed for transformations into cyborg-subjectivities is, in fact, both the technological and the body. Joe helps us understand the abject, and provokes conceptual ideas about the abject, but in the end, denies the intertwinement of body and technology …' (Maxwell, 2002)

In modern society, we are increasingly becoming merged with the technology around us, wearing it and implanting it. This allows us to contemplate the merging of the organic and the inorganic. Bodies are being remapped by technology and rigid notions of subjectivity are reconfigured and societal norms are disrupted and shifted. Questions and issues regarding ability, identity, and a struggle for embedded agency in relation to technologies are the sweeping concerns of the late twentieth and early twenty-first centuries (Parker-Starbuck, 2011). Human bodies are bombarded by visual bits and bytes of information and one often feels as if there is a fundamental invasion of what they used to call their own body integrity (Braidotti, 2006).

Morse makes a case for machine subjects (such as the television or computer) and the *cyberized* machine-human interactions that increasingly take on the 'I' and 'you' of subjective construction (we talk to the television, to our phones etc). Socially constructed and based on what she calls *virtualities* the embodied, intelligent machine emerges as a *partner in discourse* (Morse, 1998).

> 'A person's own body, and above all its surface, is a place from which both external and internal perceptions may spring.' (Freud, 1922)

ROBOTS AS ACTORS

Theatre is often described as a cultural construct and the 'liveness' debate is well documented (Barthes, 1997; Dixon, 2007; Glesekam, 2007; Reinelt and Roach, 2007). Introducing robots as actors can be seen as removing the human agency which in turn can undermine the idea that live performance is a specifically human activity and it may cast into doubt the existential significance attributed to live performance. Auslander (1997 and 1999) claims that the concept of the 'live' emerges only as a result of mediatization and 'live' is, in the contemporary moment of globalized technology, already to some extent *mediatized*.

A number of commentators have also noted that there have been noticeable changes in the styles of acting seen in theatres in recent years. Many mention a move towards a more mechanic, flattened, and intentionally 'non-acting' style, as humans sit alongside the technological on the stage (Bay-Cheng, 2007; Parker-Starbuck, 2011). The introduction of new forms of technology into theatre, has challenged many notions of existing theory and practice and form complex alternatives. The introduction of robot thespians also highlights the fixed notions of what being human means in our modern world relative to the embodied and pervasive technologies that surround us. Cyborg theatre practices can fracture outdated notions of the fixed 'subject' emerging in theatre through cyborg theatre practices. (Parker-Starbuck, 2011).

Parker-Starbuck (2011) claims that with cyborg theatre, the narratives form the ruptures in traditional visual production that may at first seem novel, promising, or informational, but they may break down, creating cracks to be negotiated in the otherwise glossy surface. Interwoven concepts of psychological and phonomological intertwinement form theatrical alliances with technologies creating a cyborg subjectivity that might encourage greater affiliations between humans and non-humans. (Parker-Starbuck, 2011). Cyborg theatre does not seek to view a body in a traditional way but rather to understand how these bodies and

technologies are shaped in performance contexts, how they reframe subjects for a technological age (Braidotti, 2002).

Through performance, narratives of bodies are told and retold; sometimes they are augmented, risking new configurations, other times they end up in foreign sites, and others are replaced by their technological extensions (Craig, 1908 and Parker-Starbuck, 2011).

Parker-Starbuck (2011) goes on to say that preconditioned modes of seeing bodies are transformed through the inter-relationships between bodies and technology on stage; however not all examples of object bodies and their connections to technology result in transformative cyborg models. She believes this creates chaotic feedback loops through the bodies of the actors that reveal bodies controlled by others, or as vessels for interchangeable and multiple personalities.

Other commentators and researchers believe that cyborg theatre represents an embodied, enfleshed subject that might better represent processes of mutation, migration, and transformation; a metaphor for the human condition (Saltz, 2001 and Braidotti, 2002).

The use of robot actors in cyborg theatre introduces ideas about the representation and signification of the body and affects change through their technological equivalents. Actors bodies are part of a shifting landscape facing the spectators, they are objects transporting characters, filmic action, readings of sexuality and technology (Parker-Starbuck, 2011).

> 'Disorder has become a focal point for contemporary theories because it offers the possibility of escaping from what are increasingly perceived as coercive structures of order … thus there arise complex layerings in which traces of old paradigms are embedded within new, resistances to mastery are enfolded with impulses towards mastery … to come into being, earlier paradigms first had to be understood as constructions rather than statements of fact.' (Hayles, 1990)

Associations with technologies present opportunities for a shifting site of subjectivity; Parker-Starbuck (2011) believes that becoming cyborg is the goal and it is an ongoing project. We are surrounded by embodied technology that is situated in a cyborgian relation to the actors who interact with it and us.

ROBOTS AND THEIR AUDIENCE

It has been stated that acting itself is a simulated activity, a false activity (Dias et al, 2013). Theatre is also often seen as a transient activity that does not provide a commodifiable end

product. The products from a theatre event are intangible – even when the performance provides satisfaction, excitement, passion or connectedness (Hardt, 1999).

Theatrical performances can be classified beyond the limitations of language. Identity and identification are always based on projection, the audience collects images of the actors on the stage, watching and interacting with their stories, in relation to our notions of ourselves.

The introduction of a range of new technologies promises new ways of looking at theatre and an elimination of the actor-audience divide, including novel modes of understanding immersive experiences. Performances involve many audiences and actors, forming bonds with and through technological environments and with techno-subjects (Kaye, 2007).

> 'The relinquishing of control to share space with others, human and non-human, creates an open site for the development of an embodied and flexible subjectivity. It is this openness, to technologies, to others, this balance and relinquishing of control, which facilitates the formation of cyborg subjectivities.' (Parker-Starbuck, 2011)

It is provocative to image theatre performances that take place without the direct participation of live people (Maxwell, 2007). Video, film and liner media have been used in live theatre performances for many years, but there are still usually live actors on the stage. When we start to consider cyborg theatre and robot actors, the only *'live'* component is the audience. Isherwood (2010) claims that it is possible to create humane, affecting works of theatre without the literal presence of human beings.

The audience may understand the experience of cyborg theatre intellectually, but when physically confronted with a live theatre with no actors, perhaps this understand is at a different level. And even when the technologies are well integrated into the performance and fairly transparent, the missing physical bodies can still be disquieting.

Human actors are often in close proximity to the technologies surrounding them on stage and rely upon theatrical vocabulary to balance the experience for the audience. Humans on stage are delicately placed as equally weighted components with technologies in these settings, frequently creating seemingly seamless performances with the spectators in the room. Parker-Starbuck (2011) uses the term 'proprioceptive-semiotic bodies' to triangulate between actor, audience, and technologies in a mutually perceiving experience.

> 'To witness something implies a responsiveness, the response/ability of a viewer towards the performer … What I call witnessing is much more interactive [than the consuming gaze], a kind of perceiving (with one's whole body) that is committed to a process of mutual dialog.' (Albright, 1997)

Cyborg theatre is not aiming to replicate the experience of cinema or film, instead the aim is to create a fusion of forms reliant on the embodied actor on stage, interacting with the audience through various technologies. The performance is being mediated electronically, the audience sees a network that joins them all (Farman, 2009 and Kaye, 2007).

Historically, the interplay between film and theatre has produced a relationship that refuses to let human bodies fully disappear. There is a feedback loop between the bodies on stage and their projected counterparts, illustrating for the spectators the theatrical interplay with film techniques that at times focus the audience's eyes on the screen and at other times on the bodies on the stage. Sometimes, an audience's eyes tend to linger on technology on stage (Gates, 2010). However, the introduction of other more advanced technologies onto the stage, cyborg theatre in particular has the potential to create large, more intricate feedback loops. Cyborg theatre challenges our modes of viewing and engaging with the performance, making us aware of disparities between human and robot performers. Audiences may be confused as to how they are suppose to approach intricate collections of sampled sound, digital images, and moving machine parts that make up a cyborg theatre performance (Braidotti, 2006 and Helfand, 1996).

This struggle between media and bodies, where to look and for how long, frames a tension in the audience. At this stage in the integration of technology on the theatrical stage, there is still (physically) room between on-stage bodies and technology prompting questions; How does media construct bodies ? How are audiences conditioned to television/computer screens ? How malleable are bodies co-presented with technology? (Parker-Starbuck, 2011).

As more technology is introduced onto the stage there is always the possibility that audiences will remain detached, almost clinical observers, as the performance is revealed through a process of mediation.

Alternatively the introduction of technology onto the stage can be regarded as introducing a new, sexier form that could perhaps extend theatre's life, and from this practical perspective facilitate a future of performance for generations addicted to their mobile phones, computer games and other screens. Cyborg theatre might help to reintegrate audiences into the space of live theatre and help to facilitate the face-to-face encounters that live theatre provides (Clough, 2004 and Parker-Starbuck, 2011).

GENDER / RACE / AGE / SEXUALITY / CLASS / ABILITY

Issues such as race, gender, age, sexuality, class and ability remain important concerns in modern contexts, too important to disappear easily whatever technological advances press upon us. These stereotypes and impressions are prevalent in most theatre, no matter how ardent the desire to challenge and overcome them (Polacek, 2010).

In modern media (movies in particular), robots and cyborgs often seem to be upholding (conforming to) traditional stereotypes, they are often given human features and almost always allocated a gender, allowing the audience to perhaps empathise and relate to the robot characters. Even the earliest representations of robots, such as Capek's (1961) Insect Play and Fritz Lang's Metropolis (Elsaesser, 2012), imposed sexual roles on their robot creations (Case, 2007). The issues surrounding human stereotypes whether in relation to sex, gender, ability, race, ethnicity, class, and so on, are too critical to be ignored when considering depictions in cyborg theatre.

When human actors are replaced in cyborg theatre, is there a need to represent differing genders and races which remain distinct among human actors on the material stage or do we meld all the stereotypes together into a single cohesive entity represented by the robot actor. Cyborg theatre is an extension of the tension and attention exhibited by the audience. What does the audience look at and why ? What can we learn about bodies and technologies through these exchanges ? Cyborg theatre allows us to deeply investigate technology and the audience's reactions to it. Cyborg theatre also pushes the boundaries of 'posts' into new territories: post-private, post-identity, post species, post organic. (Parker-Starbuck, 2011).

Many feminist theorists have already extensively discussed the ideas proposed by cyborg theatre, particularly the way the technology challenges existing notions of subjectivity in our modern world (Allbright, 1997; Braidotti, 2002; Grosz, 1994; Harraway 1991; Hayles, 1999; Phelan, 1993 and Thompson, 1997). Parker-Starbuck (2011) claims that when considering cyborg subjectivity gender still matters, that individual bodies (human or robotic), however abled, raced, sexed, all matter in the formation of a subjectivity that opens out to encourage a composite position.

In addition to the audience projecting human traits onto the robot performers, the audience also often assumes that there is a human consciousness retained in a robot body. The technology here literally replaces and becomes the body in question at the centre of the play while remaining the same person, this was seen in Maxwell's play 'Joe' where a human consciousness was transferred into a robot performer on the stage (Maxwell, 2002).

Ultimately, the robot actors are bodies on the stage. The cyborg actors form links and connections with the audience through technologies in a presumed cyborg consciousness (Parker-Starbuck, 2011). These robot actors are often immersed within technology, but resist being absorbed by it; there is a smooth acceptance by most audiences that evades gender, sexuality, age, race, class, ability.

CONCLUSION

We live in a world where rapid development of information technologies, particularly entertainment and surveillance technologies, are increasingly less about representation and the narrative construction of subject identities and more about affecting bodies, human and non-human directly. It seems that the assimilation of technology into everyday life has become unremarkable and commonplace. One more gadget or another more sensitive tool is easily accommodated by current expectations of applied research. One can view these pervasive technologies as a means to control bodies of information and to treat bodies as information (Clough, 2004). Turning a blind eye to conditions and consequences that make these products available becomes simpler and simpler, as the technologies themselves become more ubiquitous (Moser et al, 1996).

The maze of techno-culture that surrounds us cannot be removed easily, nor their deep effects swept aside, but they must be repeatedly re-examined and open to reinterpretation. The introduction of robot thespians onto the stage resonates with contemporary anxieties regarding increasingly powerful, and dangerous, technology. The cyber thespians facilitate an active, sensory, corporeal experience, using technology as form. Within the 'languages' of performance the semiotic might be a consideration of the technologic. In this multi-layered complex theatrical space, a post-human world is projected (Parker-Starbuck, 2011).

Robot theatre aims to balance the cautionary with the pleasure of technical artistic application, specifically contrasting the performance pleasure against the cautionary application of technology. Cyber thespians creatively rethink how technologies might function, through collaboration with the technologies themselves where the robot actors have their own 'agency' and are refigured as subjects of artistic practice (Coates, 1997). These intersections point to the voids left by too rapid technological expansion, too rigid formulations of subjectivity, and point towards an interconnected relationship with the non-human others in theatre productions in a post-human world. "Transgressed boundaries, potent fusions, and dangerous possibilities which progressive people might explore as one part of a needed political work" (Haraway, 1991)

The complex relationship between humans and technology has been a conflict. The stakes have been the territories of production, reproduction, and imagination (Haraway, 1991). In theatrically uniting the two systems – bodies and technology – a larger picture is revealed. It is not perfect, but potentially revelatory experience for the audience. Discussion of robot thespians continues in the follow up paper "Waiting for a Robot Godot: A Cyborg Theatre Case Study", where a robot theatre performance is discussed from a more technical point of view.

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