

Amodern 10: Disability Poetics

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EXTANT'S *FLATLAND*

Disability and Postphenomenological Narrative

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Introduction

This paper considers the disability of blindness and how it has been used as an opportunity to emphasise other modes of sensuous understanding through an interactive piece of theatre. It considers the production of *Flatland* (2015); a pilot show created by Extant Theatre Company, which consists of blind or partially sighted members. *Flatland* is a show that takes place in total darkness for blind, partially, or fully sighted participants. The unique quality of this production is that everyone has a similar experience regardless of their level of sight. Participants navigate the darkened space by way of a handheld haptic compass, called an Animotus, which rotates and protrudes in different directions, prompting its user where to go. The compass guides the users to different areas of set design which are then explored through touch. As the users feel their way around these tactile sets, their presence and movement triggers different audio cues from the set and within the bone-conducting headphones that each participant is required to wear. Fundamentally this show comes alive or is activated through the user's presence, movement and interactivity, fulfilling Ryszard Kluszczyński's description of interactive art.

As Kluszczyński has noted, within interactive art or performance art, an artist does not create a finished piece of work but rather "produces an area of activity for the receivers whose interactive actions bring to life an artwork-event." [1] Vision and story within this artwork come by way of the body in a phenomenological capacity in accordance with Maurice Merleau-Ponty's work on the body. As Merleau-Ponty has famously asserted, the body is our main receptor for knowing the world and having experiences. *Flatland* also relies upon the body's engagement with tools through a postphenomenological understanding, which will be considered through Don Ihde's philosophy of technology, primarily his human-technology relationships, considered in more detail later on in this work. This will be followed by a discussion of *Flatland* based on an interview I had with Artistic Director, Maria Oshodi, in 2015 in which the show had been run as a pilot and was being redesigned for a future release date. Extant's work greatly contributes towards the field of disability studies and disability and the arts. Ahead of this, the following section will consider some of the ground-breaking work in disability studies, where media and technology studies are often presented in the capacity of bias ableism. What follows is a brief introduction to the marginal or sometime stereotypical representations of disability, enabling readers to rethink some of the common misconceptions between non-disabled and disabled bodies.

Disability Studies

Disability studies is a wide discipline, addressing insight into disability from cultural identity, tropes within mainstream media as well as lived experience. As noted, the disability that this paper predominately considers is blindness. To consider blindness, along with disability studies in general, some background commentary is required to appraise how far the discipline has come in recent years. Professor and author, Georgina Kleege, who was diagnosed with blindness at childhood, discusses some of these issues in her chapter “Visuality” from the book *Keywords for Disability Studies*. [2] Within her work, Kleege highlights the cultural visibility of disability as something that has been historically problematic. As she notes, a “persistent theme in this work is a counterpoint between the desire to see disability framed in culturally appropriate ways and to banish unsightly versions of disability from view.” [3] Kleege highlights how disability is something that has historically been seen and unseen both in slighting ways. For example, during the eighteenth and nineteenth century, Kleege discusses how it was commonplace for the general public to go to exhibitions to schools for the deaf and the blind.

While the goal of these exhibitions was to raise public awareness about the educational capacities of disabled people and to encourage public support of the institutions, these practices can be compared to the popular entertainment of the freak show, where people with anomalous embodiments were displayed in ways that made them appear wondrous, exotic, or subhuman. [4]

This, as Kleege goes on to discuss, was exacerbated by so-called “‘ugly laws,’ which sought to cleanse public space of the unsightliness of disabled bodies.” [5] Although this declined in the twentieth century, other negative connotations of visual disability were, and in some cases, still remain apparent. As Kleege states, “charitable organizations seeking to cure or prevent various disabling conditions continue to display disabled bodies in posters and telethons in ways meant to inspire pity and promote donations.” [6] Consequentially, as Kleege asserts, this has caused many people with disabilities to feel overlooked or evoke a sense of being seen and stared at without being heard, creating a sense of otherness towards the disabled body.

Kleege also considers how terminology, particularly the word “blind” is also historically disparaging when it comes to disability studies.

Typically blindness is imagined to be total and congenital – the polar opposite of sightedness, which is understood to be not only utterly unimpaired but also the only modality to access true knowledge about the world. Disability studies scholars have challenged the notion of blindness as a single, monolithic lived experience, pointing out the ways that blindness is culturally constructed. Because the word “blind” is so often used figuratively to mean ignorant, prejudiced or oblivious, some scholars insist on terms such as visually impaired, or people with vision impairment or people with visual disabilities. [7]

Kleege indicates how visibility and disability have overlapped in other negative ways. She notes how the international symbol of disability (a stick figure wheelchair user) constructs a perception of a disability hierarchy in which wheelchair users can often be seen at the top, leaving people with invisible illness to become seemingly marginalized.

People with invisible impairments often are excluded from the general public's collective imagination of disability. Thus these individuals feel doubly stigmatized because they must disclose impairments that are not visually apparent and therefore rouse suspicions about the authenticity of their claim. [8]

Consequentially, disability visibility, according to Kleege, is a culturally constructed practice. Her chapter finishes by welcoming future scholars to address these issues and take things forward by re-examining emerging media practices, art exhibitions and technologies. Elizabeth Ellcessor and Bill Kirkpatrick's recent book, *Disability Media Studies* is one of many titles within this field to take this up. [9]

Disability Media Studies dispels stereotypical claims about impairment through an interdisciplinary approach, combining media studies and disability studies with one another. As Ellcessor, Kirkpatrick and Mack Hagood's introduction asserts, media studies and disability studies "need to learn from one another – have an interdisciplinary conversation, share insights and perspectives, and adapt the most useful theories and methodologies from each other – in order to advance ... understanding of media and disability." [10] One crucial claim that the authors highlight is how the book continues to challenge the medical model of disability (something that Tobin Siebers, who I will come onto, gives more information about).

As the authors state,

[t]he medical model understands disability as an ontological "fact" in the world rather than a constructed social and political position. People with bodily differences "have something wrong with them" and are regarded as medical problems to be solved. This is still the dominant, "common sense" way of thinking about disability. [11]

This model was initially challenged in the UK by activists during the 1970s, whereupon the social model of disability was introduced. Within the social model, a contrast between disability and impairment is foregrounded which

posits that while bodies may have *impairments*, those impairments become *disabilities* only in the context of specific physical and social environments. In that sense, disability is not (as in the medical model) a "fact" about a person, but a status imposed by society: needing a wheelchair, for example, only becomes a "disability" given the absence of ramps and elevators – or given the attitudes, beliefs, and power structures encountered in a discriminatory ableist society. [12]

Ellcessor, Hagood and Kirkpatrick go onto chart what some of this discriminatory ableist society can look like through mainstream media, highlighting a prime example from the popular musical teen drama *Glee* (Fox, 2009–2015). [13] The authors pick up on a key scene within an episode of the long-running programme that involves Kevin McHale's portrayal of paraplegic character Artie. In particular, the authors analyse a sequence in which Artie daydreams about getting up from his wheelchair, as an able-bodied person, to dance, kick and gyrate to the cheers of applauding onlookers. As the authors note, this is a highly problematic sequence on two levels. First it conforms to the stereotype that "people with disabilities are inevitably miserable and want nothing more than to be 'fixed.'" [14] Secondly, McHale as an able-bodied actor, prevents a real paraplegic actor from taking on this role. As the authors further note, there are issues with his disabled acting that fail to convey the complexity of living with disability. As they highlight, "his acting was all wrong, his contorted posture an 'inaccurate portrayal of the way an average paraplegic sits.'" [15]

Popular shows like *Glee* appear to carry a hegemonic and prescriptive notion of normality, othering abnormality and disability as something to be cured and ableism to be sought after. This is something that Lennard Davis has considered in his book *The End of Normal: Identity in a Biocultural Era* [16], as has Rosemarie Garland-Thomson in her paper, "Seeing the Disabled" [17], where she coins the term "'normate' to refer to a privileged body, without stigma, that functions as a universal type in a given society." [18] As Ellcessor, Hagood and Kirkpatrick highlight, there is the option of interpreting the preferred reading of *Glee* that endorses Artie's inclusion and validates his humanity, but in doing so, the viewer would "also accede to a dominant cultural ableism [that takes] for granted that someone with a mobility impairment would dream of, and aspire to, able-bodiedness." [19] *Disability Media Studies* endeavours to move beyond these outdated ideas while highlighting the influence and accountability of media studies. The synthesis of disability studies with media studies is a positive step in challenging stereotypes and celebrating individualism, which is the basis for crip theory.

Crip Theory

Aimi Hamraie and Kelly Fritsch's "Crip Technoscience Manifesto," clearly sets out an approach to disability studies that celebrates individualism while centring "disability as a locus of resistance against 'compulsory ablebodiedness'." [20] Crip theory, a term from the pejorative word cripple, is a reclaimed term (like queer theory) that denotes pride and defiance, along with resistance of being compartmentalised into limiting categories of ableism or disability. As Hamraie and Fritsch assert, "[d]isabled people are experts and designers of everyday life ... refusing to comply with demands to cure, fix, or eliminate disability." [21]

The manifesto highlights the great achievements of disability activism such as Jennifer Keelan who famously led the Capitol Crawl in 1990 to draw support for the Americans with Disability Act, through to contemporary art and fashion designers such as Chun-Shan Sandie Yi's Crip Couture, which focuses upon body reconfiguration and "creates

wearable art, tailor-made prosthetics and orthotics to highlight difference and disability.” [22]) As the manifesto highlights, “crip technoscience privileges disabled people as designers and world builders,” which is what this paper explores through Extant’s immersive story world of *Flatland*. [23]

Crip technoscience fosters independence, As Hamraie and Fritsch highlight:

[f]irst disabled people are perceived as dependent and the goal of technoscience becomes to encourage *independence*. Second, disability and technology are both perceived as apolitical and stable phenomena, rather than material-discursive entanglements that take shape through struggle negotiation and creativity. [24]

Crip technoscience, as Hamraie and Fritsch further highlight, “also plays with the boundaries of trust, interdependence, and crip relations,” which they consider through blind artists like Carmen Papalia. [25] Papalia’s artwork, *Blind Field Shuttle* (2010–), for example, which involves the blind artist leading a group of sighted followers (with their eyes shut) on walks, challenges ableist codes of independence, in a way similar to that which will be considered in Extant’s production where blindness becomes a new way of experiencing narrative. [26]

Dismediation

In the final chapter of *Disability Media Studies*, Mara Mills and Jonathan Sterne argue for disability to be considered beyond the universal models and tropes of media and communication. Their chapter, titled “Afterword II: Dismediation – Three Proposals, Six Tactics,” argues against the notion of media technology as something that *fixes* or *normalises* a damaged body, as this line of consideration impetuously prioritises ableism as an ideal template. Instead, Mills and Sterne’s work set out their idea of *dismedia*, a term that refers to “disability as a constituting dimension of media, and media as a constituting dimension of disability.” [27]

As Mills and Sterne assert,

dismediation centers disability and refuses universal models of media and communication. It begins from a presumption of communicative and medial difference and variety rather than see in the media as either the tools to repair a damaged or diminished condition of human communication or themselves to cause a fall from prior perfection. ... It embraces alienated or partial communication, reluctant technology adoption, targeted rather than wholesale rejection of mediation. Against the contemporary backdrop of “universal communication,” it allows for minor and separatist media. [28]

This decentring of able-bodiedness, as a way to focus more fully toward a disability-centred approach, is also at the forefront of David T. Mitchell, Susan Antebi, and Sharon L.

Snyder's recent edited collection, *The Matter of Disability: Materiality, Biopolitics, Crip Affect*.

[29] Within this work, the authors highlight the necessity to move away from the prejudiced notion of disability as something that is binarily gauged in relation to able-bodiedness. As the authors assert in their introduction,

able-bodiedness is a boundary-making process that relies on pejorative concepts of disability to see itself as privileged and desirably capacitated ... In this sense, able-bodiedness needs disability to embody devalued states of existence in which to showcase its own capacitated desirability. [30]

In order to move beyond this binary proposition, Mitchell, Antebi, and Snyder consider disability as a fluid concept that is ever changing, contemplated through Karen Barad's concept of intra-action, from her book, *Meeting the Universe Halfway*. [31] Within this work Barad, using the model of Niels Bohr's scientific study of the wave/particle duality, considers how "phenomena are the ontological inseparability/entanglement of intra-acting 'agencies.'" [32] Put differently, phenomena, like in the case of the wave-particle duality, are in constant flux, a model which is similarly adopted by Mitchell, Antebi, and Snyder as a way to consider disability. As the authors assert, "[d]isability ... is matter in motion and the exposure of the lie through which we think materiality as a stable baseline of limited plenitude." [33] As they go onto explain, "the alternative modes of becoming that even the most severe impairments offer involve the promise of an alternative agency that reshapes the world and opens it up to other modes of (non-normative) being." [34]

This state of flux or non-normative being is something that can be identified in Tobin Siebers chapter, "Returning the Social to the Social Model," within the same book. In this chapter Siebers highlights how disability studies are often perceived under two distinct models: the medical model and the social model. "The medical model changes people with disabilities into objects, steals their agency, and channels any findings into diagnosis. Here physical or mental impairments identify disabled people." [35] According to Siebers, the medical model understands "the cause of disability as lodged in the body, and the removal of disability restores the person to health." [36]

The social model, on the other hand, puts "emphasis on the environment" and "opposes the medical model by defining disability as the product of disabling social and built environments." [37] However, as Siebers notes, these environments are once again considered through a body. As he asserts, "the body is influenced by environmental factors in a way that changes what the body is. The body *incorporates* the outside environment." [38] Put differently, environments influence and change how a body interacts, it becomes a reciprocal process, which is the basis for how Extant's show comes to fruition. As Siebers argues,

Since the body is the place where the environment is read, the body bears the markers of the environment, but the variety of bodies has the power to change these markers. The identity of people with disabilities presents itself as an awareness of a complex embodiment involving the reciprocal transformation between the body and its environment – a reciprocity that provides for change in each term within an otherwise constant equation, the

content of which is embodied and thus known in and as the body. [39]

To rephrase this, Siebers proposes that in accordance with the social model each and every body is a complex entity and that body and world are reciprocally transformative. This can be used as a strategy towards a disability-centred materialism in new and positive ways, which will be explored in Extant's work. Siebers's points echo those of Merleau-Ponty and his work on phenomenology which I now turn to.

Phenomenology

Flatland can be considered a phenomenological show insomuch that it relies upon the participants' bodies to be activated. As noted above through Siebers, the body is complex, and in accordance with phenomenology, the human body is intrinsic to experience; it anchors us within the world and enables us to experience the world through our senses. As Merleau-Ponty has famously asserted, "the body is our general medium for having a world." [40] Merleau-Ponty's posthumous work *The Visible and the Invisible* famously uses the term *la chair du monde* (flesh of the world) as an ontological way of body and world being enfolded into one another and defining each other, similar to the way Siebers interprets the social model, where the body incorporates the environment and becomes defined by it. [41]

When we consider media's relationship to the body, we may initially think of sight and sound, predominantly accommodated through film, television and radio. However, such audiovisual material does not mean that viewers or listeners are cut off from the rest of their sensory corporeal engagement. Vivian Sobchack for example, (using Merleau-Ponty), has explored this idea of full-bodied sensory engagement through affect within cinema through her writings on the cinesthetic subject. [42] This is a term that Sobchack coined to describe how viewers experience cinema through their entire body and not just the distant senses of sight and sound.

Employing Merleau-Ponty, Sobchack argues that the cinesthetic subject is a term that describes cinema as an experience involving synaesthesia; an amalgamation of the senses, whereby one will cue a perception in another, such as the loudness of bright colours. In *Phenomenology of Perception* Merleau-Ponty illustrates synaesthesia through the claims that "[o]ne sees the hardness and brittleness of glass ... the springiness of steel, the ductility of red-hot steel, the hardness of a plane blade, the softness of shavings." [43] For Sobchack, this use of synaesthesia is why viewers can feel things within their entire body when watching a film, a concept she describes as a "cross-modal sensory exchange," which pertains to the way in which a viewer can taste flavours and feel hunger or disgust within their bodies when viewing the imagery of food or drink onscreen. [44] This cross-modal sensory exchange, or full-bodied comprehension, is what the Extant Theatre Company utilise in their production of *Flatland*. Visuality is diminished, and in place, a tactile and audible sensuous experience is used to create imaginative imagery through the body and the body's engagement with tools, primarily in the form of the Animotus, the haptic device used to navigate around the set. The

relationship here between body and technology is what puts this performance into motion as users interact with tools to experience their environment. This is an idea I now unpack through Ihde's understanding of postphenomenology.

Postphenomenology

Don Ihde's concept of postphenomenology explores the relationship between the external world and human experience through technology and the body. Ihde's work synthesises Merleau-Ponty's renowned research on phenomenology, which explores the structure of human experience between the world and a sensing body, which Ihde combines with Martin Heidegger's philosophy of technology. By weaving these two theoretical strands, Ihde's postphenomenology considers the relationships between bodies and technologies, and how technologies change human experiences. As Ihde explains, “[p]ostphenomenology is a modified, hybrid phenomenology.” [45] The “post” within his term accounts for development in the analysis of phenomenological studies, which in his work, uses a philosophy of technology “to probe and analyse the role of technologies in social, personal and cultural life [...]” [46] Put differently, if phenomenology is an experience of the world, then postphenomenology is an experience of the world through a specific technology.

Ihde highlights that tools and bodies make up our existence and experience of the world and that technology is pervasive. Ihde's work takes a cue from Marshall McLuhan's *Understanding Media: The Extensions of Man*, which has famously asserted “[a]ny invention or technology is an extension or self-amputation of our physical bodies, and such extension also demands new ratios or new equilibriums among the other organs and extensions of the body.” [47] Ihde builds upon this idea when he considers the extensions, limits and engagements the human body experiences with and through technological devices. Ihde's work considers how different technologies extend, limit, and alter the ontology of human experience. From eyeglasses that *correct* and extend human vision to bicycles and automobiles that change our bodily sense of speed through transportation, Ihde deliberates upon how a technological apparatus restructures the corporeality and subjectivity of a human user in a postphenomenological way. This is not to say that his position is purely from an ableist perspective, his work considers how bodies and technology (when in use) strive towards transparency; a seamless incorporation between technology and body, whether that be a tool, vehicle or prosthesis. As Ihde claims,

on the one side is a wish for total transparency, total embodiment, for the technology to truly “become me.” Were this possible, it would be equivalent to there being no technology, for total transparency would *be* my body and senses. ... The other side is the desire to have the power, the *transformation* that the technology makes available. Only by using the technology is my bodily power enhanced and magnified by speed, through distance, or by any of the other ways in which technologies change my capacities. These capacities are always *different* from my naked capacities. The desire is, at best, contradictory. I want the transformation that the technology allows, but I want it in such a way that I am basically unaware of its presence. I want

it in such a way that it becomes me. Such a desire both secretly *rejects* what technologies are and overlooks the transformational effects which are necessarily tied to human–technology relations. This illusory desire belongs equally to the pro- and anti-technology interpretations of technology. [48]

Sobchack (discussed above) has given a first-hand account of her own experience as an amputee and has used Ihde's work in relation to her own circumstances of transparency when using a prosthetic leg. As she states:

transparency is what I wish – and strive – for in my relation to my prosthetic leg. I want to embody it subjectively. I do not want to regard it as an object or to think *about* it as I use it to walk. Indeed, in learning to use the prosthesis, I found that *looking objectively* at my leg in the mirror as an exteriorized thing – a piece of technology – to be thought about and manipulated did not help me to improve my balance and gait so much as did *subjectively feeling* through all of my body the weight and rhythm of the leg in a gestalt of intentional motor activity. ... I want the leg to become totally transparent. However, the desired transparency here involves my incorporation of the prosthetic – and not the prosthetic's incorporation of me (although, seen by others to whom a prosthetic is strange, I may well seem its extension rather than the other way around). [49]

Sobchack's account indicates Ihde's concept of embodiment, which will be discussed below, which is adapted from the ideas of McLuhan and Heidegger. Ihde's notion of transparency and wider debate on whether the user incorporates technology or vice versa (considered by Sobchack), helps to move Ihde's concept of postphenomenology away from a purely ableist perspective. In contrast, this is something that McLuhan, Heidegger and other theorists of media and technology have come up against, for using a normative human body as a template for their philosophies. Mills and Sterne, for example highlight how McLuhan's writings on self-amputation and the central nervous system from his chapter "The Gadget Lover" in *Understanding Media*, are problematic "and corresponds to no accepted theory of physiology." [50] Furthermore, the body in McLuhan's writings (according to Mills and Sterne), "holds as its reference a self-same undamaged, idealized human body defined by its struggle against disability, debility and difference." [51] For the purposes of discussing Ihde's concept of embodiment it is necessary to discuss the influences of McLuhan and Heidegger, whereupon any ableist logic from these earlier theorists will endeavour to be reappropriated through Ihde.

McLuhan and Heidegger have asserted that technology has the ability to extend the body. In *Understanding Media*, McLuhan has famously claimed the wheel to be an extension of the foot, and the telegraph, phone and radio to be extensions of the central nervous system. [52] Heidegger similarly argues the way tools extend the body through his concept of ready-to-hand which I will come onto in due course. Building upon these theories, Ihde, amongst many other contemporary theorists such as Philip Brey, Andy Clark, and Peter Sloterdijk consider how technology (from hand tools to digital software and hardware) have the ability to modify experience. Despite technological sophistication, all tools can extend and limit the corporeal body of each user. An appropriate example for

this paper is Merleau-Ponty's well-known example of the blind man's cane. In this instance, the cane becomes an extension of touch, which provides "a parallel to sight." [53] This extension of sight through touch (claimed by Merleau-Ponty) is balanced by a synchronous reduction according to Ihde, (a notion that he often refers to as an amplification-reduction structure). As Ihde explains, the cane user can feel the textured hardness of the pavement through the cane technology but cannot experience its greyness of colour. Furthermore, the user cannot feel the sensation of the pavement's warmth or coldness through the cane. [54] Consequentially, the cane filters certain phenomenological sensations while enhancing others. The cane simultaneously extends and limits the corporeal body of the user by extending and limiting the range and quality of the user's experience of the world; an idea that is very much in place when I come to discuss the Animotus (the haptic compass) in *Flatland*.

Ihde's concept of postphenomenology is therefore defined by the way different types of technologies construct alternative modes of experiencing. Within his work, Ihde identifies four different types of human-technology relationships which he describes under the following headings: embodiment, hermeneutic, alterity and background relations (Figures 1-4). [55]

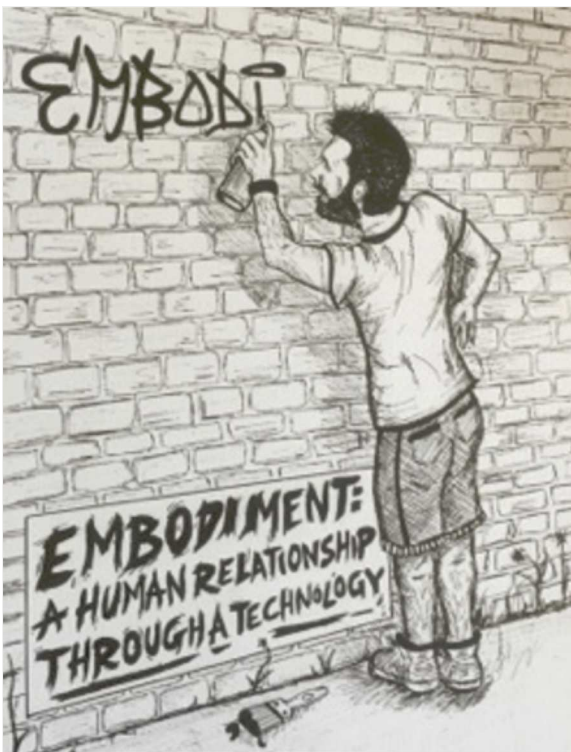


Fig. 1: Embodiment Relation [56]

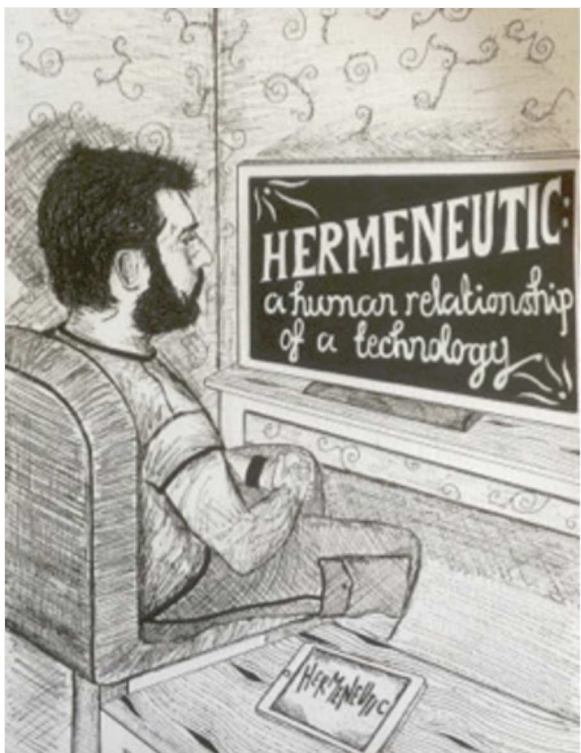


Fig. 2: Hermeneutic Relation [57]



Fig. 3: Alterity Reation [58]

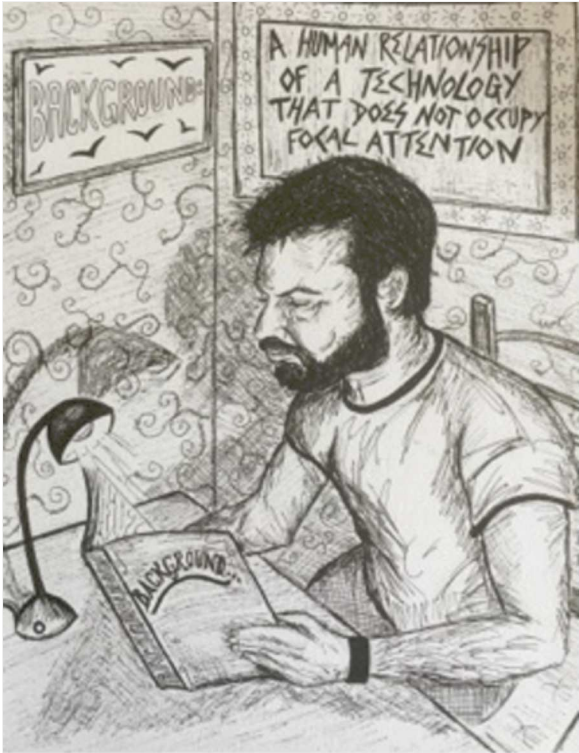


Fig 4: Background Relation [59]

An embodiment-relation (Figure 1) for Ihde, is a perception or experience through a technology as a tool synthesises with a body in a particular way. In the image the user acts *through* the spray can onto the wall. An embodiment relation thus denotes a technology that is positioned between body and world, providing the body with some form of technological extension in which the user acts or perceives through. Merleau-Ponty's cane for example, is an instance of an embodiment relation which (through use) ceases to be an external object and becomes an extension of the blind man's sight, withdrawing into his grip and repertoire of movements. Ihde bases his use of embodiment relations upon Heidegger's concept of ready-to-hand, a term famously coined in *Being and Time* to describe how a technology withdraws (through the act of use) into its user.

Ready-to-hand is not grasped theoretically at all, nor is it itself the sort of thing that circumspection takes proximally as a circumspective theme. The peculiarity of what is proximally ready-to-hand is that, in its readiness-to-hand, it must, as it were, withdraw [zurückziehen] in order to be ready-to-hand quite authentically. [60]

According to Ihde's interpretation of Heidegger, ready-to-hand affords the user praxis or a practical behaviour rather than a theoretical one. Praxis binds a human user and technology in a process of withdrawal. In the act of handwriting for example, the pen (or spray-can) withdraws into the grip and actions of its user. The pen temporarily fuses with its user, tracing their corporeality whilst, at the same time, changing their experience, which has now become accessible to the lettered technology of the alphabet. Through Ihde's reading of Heidegger, the ready-to-hand relationship posits that when a user is engaged in a task while using a tool, such as a pen to write, a hammer to hit nails or a

spade to dig the earth, a process of withdrawal takes place between body and tool, at which point they are synthesised together in the act of writing, hammering or digging. During this process, the user encounters an intuition, competence and inclination through their tool which becomes an extension of their body to complete a task at hand, this is what constitutes the embodiment relation. But this type of embodiment relation is not restricted to tasks designed for the undamaged and ableist body. Rather, it pertains to collective bodies of all abilities that use external technologies as a means to act and experience the world through. As noted, wearing eyeglasses is also a type of embodiment relation in which technology changes experience as the user perceives or acts through the tool. Within *Flatland* the Animotus (the haptic compass) can be considered an intuitive device that the user embodies and is extended by in order to navigate through the darkened space.

A hermeneutical relation (Figure 2), in contrast to the embodiment relationship of seeing or acting *through* a technology, is an experience *of* a technology. Hermeneutic (in Ihde's sense of the term) therefore pertains to a technology that we read, such as clocks, thermometers, maps, books, recorded voice or anything else that marks a separation between a user's body and technology. In *Flatland* the external recorded sounds that the users experience can be considered a hermeneutic relationship.

An alterity relation (Figure 3), unlike the first two examples, is a case in which a technology (from the perspective of the human) seemingly takes on a life of its own. As Ihde states, alterity is “the sense of interacting with something other than me.” [61] Artificial Intelligence for example is a contemporary form of the alterity relation. The Animotus device used in *Flatland* (which I will come onto in the next section) can also be considered a device with alterity qualities through the way in which it appears to act autonomously from the perspective of the user.

Finally, background relations (figure 4) according to Ihde are the encounters that humans have with a technology in the periphery of their awareness, or what he also calls a “present absence.” [62] Household lighting for example is a domestic instance of the “fringe awareness” that this technology has in relation to a human user. [63] As Ihde asserts, background relations do “not usually occupy focal attention but nevertheless [condition] the context” for the human user. [64] In *Flatland* it is the absence of lighting which conditions the type of experience that the participants encounter, which I now discuss in more detail.

Flatland

Flatland is an interactive, vibro-tactile artwork from Extant, a professional performing arts company of visually impaired artists who specialise in devising shows for visually impaired audiences. Within Extant's work visual disability becomes an opportunity to “explore new creative territories.” [65] Extant's production of *Flatland* takes place in darkness and requires audiences to navigate the lightless space through the sound and touch of bone-conduction headphones and a haptic cube called an Animotus, which

guides users around the space. The show is based upon Edwin A. Abbott's Victorian novella *Flatland: A Romance of Many Dimensions*, which tells the story of a group of anthropomorphic shapes within a 2D universe, primarily from the point-of-view of a character called A-Square. [66] Abbott's satirical story uses the two-dimensional world of Flatland to consider a class system made up of lines and geometric shapes who are the characters of this world. Polygons are used as a way to differentiate between class and gender. Females are at the very bottom of this structure portrayed only as vertical lines, while the lowest male figure is that of the isosceles triangle which can only attain working class status or enlist as a soldier. An equilateral triangle establishes a higher class as a craftsman, while squares and pentagons are portrayed as the gentlemen classes of the world. In Abbott's story this goes all the way up to circles that are deemed the high priests of Flatland.

Within Abbott's book A-Square narrates to the reader the practicalities of living within this two-dimensional universe and how each shape recognises another in a world without depth. Abbott's book asks the reader to

[i]magine a vast sheet of paper on which straight Lines, Triangles, Squares, Pentagons, Hexagons, and other figures, instead of remaining fixed in their places, move freely about, on or in the surface, but without the power of rising above or sinking below it, very much like shadows – only hard and with luminous edges and you will then have a pretty correct notion of my country and countrymen. [67]

A-Square then goes on to ask the reader to visualise the world and countrymen from a native perspective by placing a penny flat on the surface of a table and lowering your eye parallel to where the penny rests. “[...] at last when you have placed your eye exactly on the edge of the table (so that you are, as it were, actually a Flatlander) the penny will then have ceased to appear oval at all, and will have become, so far as you can see, a straight line” a concept that is illustrated below using a triangle.

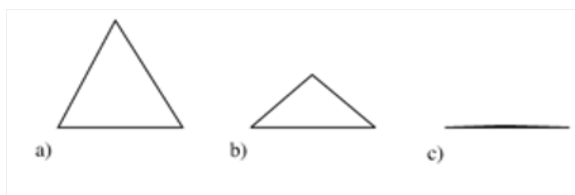


Fig. 5: Transformation of triangle to line from positionality. [68]

Immediately Abbott's setting illustrates a world in which sight is unreliable, and as A-Square explains, Flatlanders have to listen out for and feel one another in order to know who they are in the company of, which is primarily carried out by the shapes touching and listening to each other in order to become recognisable. Perception in the book is thus an auditory and tactile one which Extant's production takes advantage of. In an interview I held with Maria Oshodi (Artistic Director of Extant) she explained why *Flatland* was such an apt text to adapt.

I wanted to find a way to use touch to unfold a narrative. You are guided around a space by something that you can feel (which has a vibro-tactile feedback structure and intimacy between the individual user and device as they kinesthetically move through space). When you arrive to where you are going through the physicality and sense of touch with the environment that surrounds you, a separate relationship opens up through the audio. Some of the materials in the space that you come to are quite abstract and what I was trying to do was connect that with my level of sight which is very little at the moment. If I go into a strange space and don't know what it is, i.e. don't immediately get it through your hearing you have to touch something. And if that does not immediately translate something identifiable you have to then move to get the next thing, so you build back to this language that you are creating for yourself where you are, and that becomes a gradual, incremental unfolding of a setting. [69]

Extant's production deals with the aftermath of Abbott's story which sees the protagonist, A-Square, exiled from his homeland after encountering a strange phenomenon. In Abbott's story A-Square learns of a three-dimensional universe (described as Space Land) when a character called Sphere (an alien 3D shape) extracts A-Square from his 2D home into the 3D world. After A-Square is returned to Flatland and reports his 3D experiences to the high priests, he is imprisoned for heresy. It is during this incarceration that A Square writes *Flatland* as a work of truth for future generations. In Extant's adaptation (which at the time of meeting with Oshodi in 2015 was a pilot production), events are reorganised for a more interactive experience. In this work A-Square (renamed as Elder Square) is performed by an actor who meets with the four participants/audience members before they enter the *Flatland* world of the darkened auditorium. Elder Square tells the participants of his story and exile and how he is enlisting their help so that they can smuggle him back into his darkened universe. Elder Square then prepares the participants for their mission by directing them to don protective interactive suits, an idea that Oshodi explained in more detail during our meeting.

As she notes, the pilot for this production took place in a large disused church in the middle of Southwark Park. The church, as Oshodi explains, was a gutted open space that was used to portray this world by creating different environments consisting of "elastic ropes, velvety walkways, pipes and e-textiles." [70] In our interview Oshodi highlighted how the church was very cold and that neoprene suits (Figure 5) which bear the appearance of boiler suits were required attire for each participant. These suits serve multiple functions, in addition to keeping the user warm the suits also house the electronics for the experience that interact with the handheld cube (the Animotus) which identifies where the user is positioned in the environment and guides them around the darkened space. As such, certain levels of mobility are necessary within this experience, as participants are required to don the suits and be able to actively move around the space, guided by the Animotus.



Fig. 6: Attire and Animotus during use in Flatland.[71]

The Animotus, also referred to as The Haptic Sandwich (during its early developmental stages), is a “3D printed cube sliced horizontally through the middle so that the top half can translate and rotate relative to the bottom.” [72] The rotational angle indicates the direction to a target that the user should face. So, if the upper face turns left then this would be the direction that it’s user would need to turn towards. The upper half of the device would then protrude forward, directing the user to walk (Figure 6).

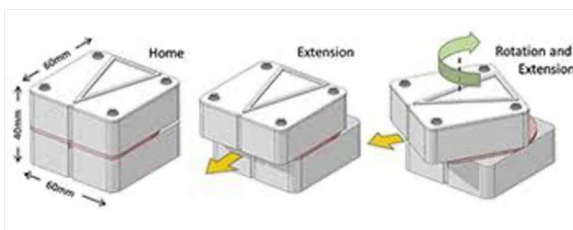


Fig. 7: The Animotus Design [73]

Designer Adam Spiers states that, “the simple idea is that when you’ve arrived at your target destination, it becomes a little cube again.” [74] As Oshodi highlighted during our meeting, the cube design is also supposed to represent A-Square, who’s voice stays with the user through the headphones, as he describes, like a tour guide, different locations to the user as they approach different areas of the set.

During our meeting Oshodi went on to explain that the Animotus hardware works in conjunction with a mobile infrastructure system called Ubisense. Ubisense utilise nodes in the form of Ultra-Wide Band (UWB) radio transmitters, referred to as Ubitags. The Ubitags are housed into the user’s neoprene suits and react to UWB receivers which are setup in different hotspots of the blackened space. “Ubisensors determine the angle-of-arrival of signals emitted from the Ubitags.” [75] These signals locate where participants are in space and feed into a central computer through a unique software system (specifically designed for this production), which are overseen by two operators within a

control room. The operators are responsible for guiding the participants to different zones within the darkened space, by sending information to a micro controller called an X-OSC, built into the 3D suit that communicates with and controls the Animotus. Oshodi explains this in the following way.

The sensor in the costume picks up the position of where people are in space, which is fed through to the central computer. The central computer sends information through to X-OSC, which sends information through to the cube. The other piece of equipment that we used was the Magnetometer. This is a wristband that serves like an electronic compass that gives [the computer operators] the position and direction that the user is facing. [76]

This is how the explorative and interactive nature of the artwork takes shape, by guiding users through touch and sound towards different tactile and audible zones made of unique textiles that “come to life” when a user is near enough to activate it. As Oshodi explains,

electronic conductive materials were built into the set so that when users touch certain parts of it the set becomes activated either through vibrational or acoustic feedback. Individual zones respond in different ways, one of them for example is a taut crisscrossing of bungee ropes at irregular angles, like a spider’s web which users move through. The e-textiles trigger different sounds as users touch it. Another area was made up of large industrial pipes with big funnel openings. If you put your ear to them, you would hear from the pipes fictional recordings of stories and sounds that were going on in a kind of euthanasia hospital. A different zone was designed to be like a house in Flatland with a window frame that contained a spongy sort of glass made from a thick nylon material. When touched, the e-textiles woven into this fabric vibrate at different velocities, which are supposed to represent the women of Flatland. [77] (Figures 7-9)



Fig. 8: *Flatland*[78]



Fig. 9: *Flatland*[79]



Fig. 10: *Flatland*[80]

The physical location of each participant in *Flatland* is thus translated by the Animotus and cues a specific sound effect, either in the form of external environmental sounds (that come from the set) or in the form of dialogue spoken by Elder Square by way of the bone-conducting headphones. As noted, The Ubisense technology uses locative media to give the impression that Elder Square is accompanying the user as a tour guide. The specific stories that Elder Square tells the users are relative to the physical locations that each user inhabits within the environment. This way each participant accesses the narrative in a unique way that is relative to his or her physical movement, so (as previously noted) mobility and good acoustics are required from the participant. In our interview Oshodi highlighted the significance of bone conducting headphones, which are placed upon the skull bones in front of the ears. As Oshodi states,

this leaves the ears free to hear environmental sounds and through your bones allows you to hear the sounds of the headphones as well. This meant that we could create narrative dialogues that would play for each individual audience member depending on where they ended up. Plus, they could hear all the different spatial sounds of Flatland itself through external speakers within the space. [81]

Consequentially, the artwork enables users to author their own access to content through the way in which they move through the space. With that in mind though, the path through this space would seem to be primarily for a participant who can walk or navigate independently through the space, responding autonomously to the sound and haptic cues. This potentially becomes a barrier to anyone with hearing impairments or mobility problems and could present further barriers to anyone experiencing invisible or cognitive disability. Thus, a mobile audience that can feel and hear within the space is primarily who this installation is targeted towards, in order to permit a sense of free roaming in a safe way. But as Extant demonstrate with visual impairments, perceived barriers like these have the opportunity to become creative constraints, such as the company Deafinitely Theatre: “the first deaf launched and deaf led professional theatre company in the UK.” [82]

In *Flatland* an embodiment relationship is central to the experience in the way that the users wear the haptic suits that responds to their movement through ubitagging which registers their location and communicates with the Animotus; the haptic device which they feel in the dark in order to move around the space. This gives way to a symbiotic relationship of movements triggering technology, as the technology guides the movement. The Animotus thus becomes a tactile extension of sight within a sightless setting, as well as an extension of movement as users imitate its direction and take their cue from it to move forward or stop based on the way it protrudes or retracts. However, because the user has to be compliant with this technology in order for it to work, the Animotus does arguably limit the user from undiluted free roaming, thus reverberating Ihde’s amplification-reduction assertion that technology, particularly in embodiment relationships, simultaneously extends and limits its users.

The embodied device leads the users around the darkened space to where they encounter a range of different sounds, noises that the users read and interpret which can be linked to Ihde’s concept of the hermeneutic relationship. These sounds, stored in specific locations of the set such as pipes or windows, marks a separation between the user and the technology which is a hermeneutic reading of the artwork’s technology as opposed to the user acting *through* a technology like the Animotus.

The Animotus, during certain intervals, also takes on the qualities of Ihde’s alterity relationship through the way it seemingly acts on its own accord and becomes a form of otherness, becoming an autonomous, quasi-independent device. The device’s crude aliveness which responds to the set is emphasised through the conceit that the device is a metaphor for Elder Square; a token of his aliveness, galvanized by the sudden burst of narration through the user’s headphones as the Animotus comes to life and reacts to the user’s location.

Finally, the background relation of the darkened set, the void of the blackness, is what conditions the artwork, enabling the users to experience *Flatland* in a unique way through the emphasis of sound and touch. In this sense all four of Ihde's relationships are present to turn audience members into postphenomenological performers. Elsewhere I have argued that these four Ihdeian relationships are necessary for players to experience computer games, which in some respect, is what *Flatland* could be compared to. [83] Naomi Alderman, technology journalist for *The Guardian* has likened *Flatland*'s ability to free roam, explore and piece together bits of story as being similar to playing computer games. As Alderman asserts in her review of *Flatland*, "videogame culture and ideas are bleeding out into other artforms ... both produce fictional worlds which are partly authored, partly left free for exploration." [84] This comparison between interactive theatre and gaming has also been made in relation to Punchdrunk Theatre company who specialise in this method. As Oshodi highlighted during our interview, Extant's *Flatland* was in partial collaboration with Punchdrunk, who along with Blast Theory are currently leading the way in interactive theatre and performance across Britain. Punchdrunk's *The Drowned Man: A Hollywood Fable* (2013-14) for example, was an interactive performance that took place in a five-storey building with different scenes that play out simultaneously. The audience moves around the building, exploring the scenes in the order of their choice, which has been compared to an open-world computer game. Theatre critic, Alysia Judge, has described *The Drowned Man* as a playable show, which departs from traditional theatre shows that she refers to as "passive affairs." [85]

Within the traditional theatre play, according to Judge, "you watch a distant stage from the comfort of a chair – but a Punchdrunk show is active, mysterious, and places you inside a fiction you can touch, smell and even taste. The choice of what to do and where to go is up to you." [86] *The Drowned Man*, like *Flatland* (to some extent), is about experiencing space in a nonlinear way through a "laissez faire approach to storytelling." [87] Consequentially, as Judge highlights, *The Drowned Man* has been compared to the medium of computer gaming. Within computer games, particularly open world role-playing games, the empty space of a house, forest, beach or any other locale "is pregnant with atmosphere" and invites audience interactivity through choice of where to go, what to explore and in what order to do it in. [88] As Felix Barrett from Punchdrunk asserts, the theatre company was not "ever directly inspired by an open-world game" but open world gaming, as Judge notes, "creates a new way to tell stories – similar to what [Barrett] was trying to achieve in theatre." [89]

Judge's article highlights that "neither open-world games nor Punchdrunk plots are linear. Events aren't always funnelled into "beginning, middle and end" [94], but can often be experienced in any order." [90] Perspective and narrative are thus seemingly controlled by the audience. *The Drowned Man*, like *Flatland*, does include certain plot points within the experience that cannot be changed but even though elements of the story are fixed, the way in which the audience participants encounter them is wholly unique through interactivity. This is something that Neil Brown, Timothy Barker, and Dennis Del Favero have referred to in their collaborative paper, "Performing Digital Aesthetics," as Polychronic Narrative. [91]

In their paper on digital interactive storytelling the authors use the term Polychronic Narrative to describe an artwork in which a “user can navigate her own path through pre-scripted events, able to move backwards and forwards in time at will.” [92] Their term is inspired by David Herman’s essay “Limit of Order: Toward a Theory of Polychronic Narration” which states “[polychronic narration] is not a complete absence of sequence or the lack of definite sequence but instead a kind of narration that exploits indefiniteness to pluralize and delinearize itself, to multiply the ways in which the events being recounted can be chained together to produce ‘the’ narrative itself.” [93] Participants of the *Flatland* experience are free to move around the artwork as they wish, delinearizing a rigorous narrative structure into something more interactive. Consequentially *Flatland* also seemingly conforms to what the authors call a Co-Evolutionary Narrative, which they describe as a narrative that “*evolves* or *emerges* based on a relationship formed between a human user and a digital agent able to respond autonomously.” [94] Within their paper they consider motion sensing and a user’s body within a space as something that creates and activates different types of narratives to unfold. Within *Flatland* a similar relationship with technology occurs. As noted, the alterity of the Animotus seemingly gives the technology a sense of agency and independence that works with the embodiment of the user to give the illusion of co-creating a narrative event.

Although the user is limited (to some extent) through the way in which they adhere to the Animotus, their compliance simultaneously limits and extends the user into the fictional world through an amplification-reduction structure. Furthermore, the reduction of sight (in line with Siebers’s writing on the social model) functions as a way to alter the social environment of the space by placing emphasis on the senses of touch and sound. Extant’s environment of *Flatland* (as a social model) is changed to enable sight or sightlessness to merge, enabling all participants (sighted or visually impaired) to temporarily suspend difference between visual disability or ableism and encounter a shared experience through haptic and audible cues, in a space where touch becomes a central component in experiencing the narrative of the artwork installation. As Oshodi stated during our interview, theatrical performance through touch is new territory for performance artists, and the pilot show enabled Extant to experiment and find the strengths and weaknesses within this work’s unique approach. As Oshodi asserts,

interacting narratively or theatrically through the sense of touch hasn’t really been done before in many performances, and we are still working out what these rules of engagement are. *Flatland* gave us this clear sense of what went well and where things can be improved. Where I think we did not get it right at times was perhaps too much narrative in different zones, which was written almost like a radio play, rather than a particular narrative that would correspond with a slow kind of tactile exploration through space. [95]

As Oshodi highlights, greater emphasis on touch is what Extant looked to improve in order to give the participants a richer, kinaesthetic experience that enfolds or co-evolves between the environment, user’s body and tactile tools, transcending an audience member’s typical role of spectator to a postphenomenological performer. *Flatland* is a truly original and interdisciplinary artwork that successfully merges aspects of literature, performance and gaming into a unique setting of darkness, galvanizing a user’s body into

action.

Conclusion

To conclude, this paper has considered how blindness and visual impairment have inspired new opportunities of interactive performance art and storytelling through the body. It has considered the work of Extant Theatre Company who are significant in this field by incorporating blindness as their subject matter throughout all their shows, including their latest piece titled *Flight Paths* (2019), which focuses upon two blind women in a show described as a “multi-media production that combines movement, music, narrative and creative audio description using new sound technology.” [101] Through this description Extant’s devotion to make shows for audiences who are blind (as well as sighted) by performers and artists who are affected by sight loss is clear. As Oshodi indicates, these shows, *Flatland* in particular, rewires sight to the other senses of touch and sound to mobilise the body to interface with technology in order to access the show’s content.

Through Ihde’s philosophy of technology, this paper has also considered how the process of this interactive engagement can be considered through postphenomenology where Ihde’s four human-technology relationships in the form of: embodiment, hermeneutic, alterity and background relationships help us to consider the composition of this piece. The embodiment relation and its amplification-reduction structure for example are key here, whereupon the body is simultaneously extended and limited by the Animotus, an alterity device that seemingly takes on a life of its own and instructs its user on where to go. Yet at the same time the user’s positionality prompts the Animotus device. Thus, a simultaneous balance of the body controlling (and being controlled by) a technology is apparent. As this paper has shown these relationships are crucial in bringing the body to the forefront, creating a type of corporeal narrative in which sight is remapped to sound and touch through Extant’s unique brand of interactive and visually impaired theatre, where spectators become postphenomenological performers.

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