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IMAGINARIES OF THE FUTURE 01: BODIES AND MEDIA

E-topia: Utopia after the Mediated Body

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A custom-made media installation, *diplorasis*, will be used to explore the body in digital media. This mediated body attempts to re-think how the Deleuzian time-image is translated from its cinematic confinement to the space of new media. In *diplorasis* the digitized time-image becomes more directly incorporated with-in the bodily schema. Consequently, the thinking of the virtual and actual space of the body in *diplorasis* enables a questioning of bodily space-time, and particularly the relation between self and digitized self-image. It is thus crucial to re-frame how this digitized mediated body is distinct from a conventional notion of a metric and habitual space—one that is reinforced by, for example, the medium of linear perspective. The articulation of the mediated body will be used to in-form and extend Elizabeth Grosz's paradoxical reading of embodiment and utopia, by revisiting the notions of utopia as eu-topic/ou-topic. The spatio-temporality of the topos must be re-considered before utopia. Foucault's analogy of the mirror will then serve to superimpose the dual and slippery relations between utopia and the heterotopic. The digitized mediated body will thus seek to explore emerging ways by which to consider the utopic by conflating embodiment, time and space within an electronic topos. It is argued that as the sensing and cognitive body becomes increasingly pliable in relation to technological mediations, our very understanding of space-time is changing.

Introduction

This article investigates the spatio-temporality of the body in digital media, and utilizes this analysis to provide a framework from which to rethink utopia. In the first section, '"Diplorasis": The contemporary body in media', a multi-media installation of my own making—*diplorasis* (2014–18)—is explained.[1] This aims to re-consider the bodily perceptual boundaries that are induced by emerging visual media processes. Within the installation space, participants unexpectedly encounter digitized stereoscopic projections of themselves from previous moments and multiple perspectives; viewing themselves both from outside and inside their body. This media art project serves to inform the theoretical speculation that will be developed throughout the article. In 'Digital media and perspectival representation', I consider *diplorasis* through its relationship with theoretical and practical readings of the body in media. The articulation of this mediated body will be compared to the body in conventional spatial representational media such as linear perspective. Whilst linear perspectival representation entails a distance between the viewer's body and the object viewed, the body in digital media inhabits the interval between actual space and virtual image. Consequently, this changing entwinement between the digitized body and space-time is considered in contradistinction to projective representational forms that distance the perceiving body from the object of its representation. The notion of time-space provides a means to re-think the body in digital media, a task undertaken through a reading of Lev Manovich's theoretical work on the digitized image and by revising specific media art projects by Char Davies (*Osmose*) and Masayuki Akamatsu (*TimeMachine!*). In 'The image of time in cinema' I develop this line of enquiry through Gilles Deleuze's notion of cinematic time, which is revised in order to anticipate its possible permutations within digital media. I demonstrate that Deleuze's articulation of time indicates how a cinematic medium moves beyond a mechanical model of the universe. This image of time makes it possible to conceive of co-existing yet incommensurable durational trajectories. An understanding of the

[1] Production was supported by Savvas Socratous (hardware/software engineering), George Athanasiou (photography) and Andreas Laoutas (electrical engineering consultancy). Visual material can be found at http://www.para-sight.org/installations-devices/4589953031.

'time image' emerges, and its reliance on a non-human agency—the cinematic eye of the camera—is explored. I argue that the digitized body in new media re-articulates this cine-eye as it is brought within the bodily schema, informing a body extended with-in emerging media: the mediated body.

The spatio-temporal implications developed in these first three sections are then utilized as a method to frame an understanding of utopia. In 'An image of the utopic' I outline the multivalent concept of utopia as explored through media and the body. Drawing on Thomas More, Elizabeth Grosz and David Bell I revise the time, space and place implicated within the utopic. The composite of time and space is considered from the perspective of utopia. A rereading of the more complex intertwinements between extension and duration through the concepts of smooth and striated space that Deleuze developed with Félix Guattari, as well as Bernard Cache's 'extrema' and inflective perception, will construct further understandings of the body in space and time. Thus it becomes necessary to consider a pre-individualized notion of space before place, by focusing on the mediated body's spatio-temporality. An overview of precedents will articulate different spatio-temporal understandings and how these relate to the utopic, including: the panopticon, Foucault's mirror analogy, the space within VR environments.

More's idealized and static utopic image (as 'eu'-topic) is held to correlate to the space assumed in linear perspectival re-presentation as it prescribes an extensive ubiquitous field that delimits subject and object into fixed images. Michel Foucault exemplifies this utopic image in his writings on the Panopticon prison. Drawing on the Panopticon, I elucidate how this spatial typology materializes utopian ideals that are similar to More's account of utopia, and provides a useful correlate to conceive of the all-seeing eye implicit in the perspectival Cartesian cogito.

In 'An-other topos?' a more nuanced spatial understanding between the utopic and its other, the heterotopic, is developed via Foucault's essay 'Of Other Spaces: Utopias and Heterotopias'. By using the mirror as an analogy, Foucault reveals how the hinge between virtual image and actual space suggests a paradoxical and changing image of place. It is this multivalent interaction between the impregnated, dual and ambivalent meaning of the utopic through its relation to heterotopia that I

rethink via digital media. I argue that within the controlled space of new media (VR headsets, for example) the body is taken as an informational unit, becoming a site for economic and political control. In order to explore the body in digital media it thus becomes important to consider the cognitive and perceptive understandings of time-space and how these might shift with the mediated body. Consequently, the article reframes the mirror as a threshold between an actual and a virtual topos through its digitized conversion.

Returning to *diplorasis* I show how it is possible to conflate the image of the body with the notion of place. The mediated body within *diplorasis* reveals a tension between the perceiving self and its simulated image. As the body becomes enmeshed with the informational, its mirrored image, i.e. the self-image, becomes distorted. The self and its spectral other produced by media assemblages thus induce another understanding of time. In this respect, the Deleuzian diverging notion of time is brought to bear directly on the bodily schema. This assemblage provokes emerging articulations between memory and perception, questioning the space that the body inhabits in 'real' and virtual time. This allows me to position the utopian not simply as an 'ou-topia' (non-place), but rather as an electronic-topos; an 'e-topia'. In 'Conclusion: Towards the E-topic', I speculate on how prior formulations of eu-topos and ou-topos; heterotopic and utopic; and actual and virtual are changing with emerging understandings of digital media constellations.

Diplorasis: The contemporary body in media

Diplorasis is translated from the Greek words 'diplo' (διπλό), meaning double, and 'orasi' (όραση), which means vision. The installation conceptualizes a 'mediated' body to which I refer throughout this article. Located inside an abandoned house in Nicosia, Cyprus from 2014–18, it is essentially a constructed corridor. Made from timber struts, its internal surfaces are covered by more than 130 mirror panels (most of these measure 60 × 40 cm), with the exception of the curtained entrance and a translucent, sandblasted glass panel situated at the far end of the corridor. The reverse side of the corridor, made from an exposed timber frame, contains various cameras and electronic components. The juncture between the outside and inside is negotiated via one-way mirrors.

Upon entering the installation space the participant observes the panel at the far end of the corridor. Within this glass panel is an orifice in the shape of a human head, with two peepholes. The participant walks towards the screen and positions his/her head inside this orifice. When they look through the peepholes they encounter a stereoscopic projection of themselves traversing the corridor. The stereoscopic images are then replaced with another view of the participant. As the images change they become increasingly misaligned and manipulated. Viewing the projected images, the participant becomes aware that their photographic image was captured as they walked along the corridor. The sensor-triggered photographic cameras within the device are programmed to capture different views of the moving participant, and then to digitally split (and in some cases manipulate) the images before sending them to LCD screens that project the image back to the participant. The cameras are hidden from participants by the one-way mirrors and algorithmically controlled lighting conditions: what appears as a normal mirror for the participant inside the corridor is transparent for the camera on the reverse side. The installation uses various software and hardware processes (DSLR cameras, stepper motors, LCD screens, Arduino, Raspberry Pi computer chips, ultrasonic sensors, gphoto2 application, OPENCV library and so on) that are centred on an older medium: the Wheatstone stereoscope (invented in the 1830s).[2]

The Wheatstone stereoscope frames and separates the eyes in order for each eye to view one slightly misaligned image from a pair of images. The left and right images are projected onto mirrors placed directly in front of the corresponding eye. Each eye thus independently receives the image projected on the slanted mirror that it faces. As the two distinct images momentarily hover around this split distance, the visual cortex attempts to bridge the gap and overlay the two images. This operation reveals and emphasizes the transition from distinct dual monocular receptions to the binocular fusion in the mind. The image that is induced in the mind, by bridging the two distinct but related images, becomes an image 'in-depth'. The digitized stereoscopic image within *diplorasis* aims to extend the Wheatstone

[2] For more on the Wheatstone stereoscope see Jonathan Crary's *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (1990).

stereoscopic operation by incorporating a digital feed of the viewer's own body from their immediate past moments (within the installation space). The uncanny closeness of a neutral image 'out there' evoked by the Wheatstone stereoscope is now subverted as the digitization of the image allows for unexpected self-projection and self-manipulation. The device becomes an auto-scopic machine: *eautos* being Greek for self and *scopos* for watcher. The participants experience themselves from the perception of another; that is from a position outside of their body. Paradoxically, the image that induces an out-of-body experience comes into being somatically; i.e. through the organic binocular operations of the participant's eye(s).

Digital media and perspectival representation

The stereoscope is a device where the relations between referent and represented image are discontinuous. This discontinuity however, is different from the one assumed by projective drawing representational forms (i.e. linear perspective). Within the stereoscope the discontinuity between the referent and represented image is part of a process that actively involves the corporeal body. In linear perspectival representation another kind of discontinuity occurs, one that assumes an *a priori* separation of body and represented object. The perspectival representational system distances body and object through an abstract geometrical grid inscribed on the picture plane. In the perspectival picture plane either side of the static screen–body and world/object—is reduced to a ubiquitous and measurable field.

The discontinuity assumed by the digitized stereoscope operates as a changing communicative screen between viewer and represented image. Digital media and stereoscopy converge on the surface of the screen. The digital screen in this case communicates with both viewer and viewed through informational loops. Here it should be reiterated that all digitized processes involve input-output commands. In order for the information to be perceived by humans the machine-readable code must be converted from a digital to an analog format. This is because the 'computer stores meta-pictorial information in a fragmented array of discrete numbers, which cannot communicate directly with the depicted or the observing world' (Rodowick, 2007: 114). In the case of *diplorasis*, the digitized stereoscope involves two types of discontinuities: the perceptual discontinuity between referent and represented

image (as in the Wheatstone stereoscope) and the input-output process that converts digital-to-analog formats. This second level of discontinuity makes it possible for the digitized stereoscopic image to become prosthetically extended to a whole range of external 'inputs'—other bodies, objects and the environment. The input—output temporal dis-continuities of *diplorasis* relay between sensing body and its projected imagery.

In *The Language of New Media*, Lev Manovich refers to the possibilities for extension and manipulation of the image inherent within digital media. For him, 'virtual space previously confined to a painting or a movie screen, now completely encompasses the real space' as 'the immersive VR headset has superseded the dynamic field of the cinema' (2001: 97). The space of VR/AR and emerging new media makes it possible for the body to be positioned at an interval between an actual and a computer-generated environment. This presence involves co-existing synthetic and actual environments that in turn affect the sensori-cognitive co-ordinates of the body. The presupposed distance between body and object in perspectival representation as such collapses with digitized environments. Manovich emphasizes how electronic forms of transmission can occur from any distance 'instantaneously' and can also be constantly 'manipulated' (2001: 168–169). These elements of instantaneity and manipulability are characteristic of new media practices. The discontinuities inherent within media art processes mark a critical disjunction between 'the content of the work and the interface' (2001: 227).

A number of digital media practices from the 1980s onwards explore the body's positioning within co-existing informational and actual spaces. In Char Davies' *Osmoses* (1995), the viewer is immersed in a 3D interactive environment via a head-mounted display. This VR space explores the distance between the world and the computer-generated image through the body of the viewer by providing 'real life motion tracking' through 'breathing and balance' (Davies, 1998). The relation between self and world is thus mediated through the sensing body and how this in turn alters the image. In a similar way to *diplorasis*, the reception of an informational image is synched to the body of the participant. However, the body in *diplorasis* is encapsulated within the installation and is passively made to confront its own

self-image as its digital projection and mutation moves beyond the participant's control.

Like *diplorasis*, Masayuki Akamatsu's *Time Machine! Version 5* (2005) explores a split perception of the self. In this installation, as the viewer approaches three screens their image is recorded by a video camera and then projected onto these screens. The participant can manipulate this projected image via a trackball and, through these movements, their image becomes multiplied, blurred or extended. In his description of Akamatsu's installation, media theorist Timothy Murray states that 'a turn to the left travels the image back to the future, into the present' (2010: 365). The rupturing of the self occurs between the gesturing body and its projected images. According to Murray, the viewer's perception 'remains open to the vicissitudes of the video image's instantiation in time and the subject's entrapment in the doublings of time itself' (2010: 365). In *Time Machine! Version 5* the viewer's spatiotemporal coordinates become displaced through these doublings of time.

In order to further explore time within digital media art it is pertinent to consider how these particular media appropriate prior media formats. Analog moving-image media such as the cinematic image offer an important pre-cursor to contemporary digital media. To a certain extent, emerging digital media formations apply the codes of earlier moving-image media. Thus, the time of the cinematic image will be revised in order to explicate how the experience of time within new media both expands and re-articulates cinematic time.

The image of time in cinema

The basic material unit of analog film—the analog photograph—is developed via a 'mechanical recording of images through the registration of reflected light on a photosensitive chemical surface' (Rodowick, 2007: 114). The filmstrip is a linear series of photographic images taken in a continuous sequence that re-creates the illusion of a moving image. Played back at 24 frames per second, the reel projects an audio-visual image of the previously recorded actual space-time continuum and its ensuing movements. Before speculating on film's transition into the digital age, it is worthwhile exploring the temporal implications of analog film as a medium. In *Understanding Media* (1994), Marshall McLuhan suggests that in their inception, all

media appropriate older media forms. During their development, emerging media increasingly attain their own distinctive features. The cinematic medium bears these diverging forces, where on the one hand it was made to appropriate a narrative structure associated with older media (e.g. the novel), and on the other hand, its very ontology was beginning to inform other potential temporal constellations. Essentially, the cinema opened up uncharted relational possibilities between man and external world.

The cinematic camera offered another means by which to perceive the world; one that deviated from human perception. The cinematic eye is distinct from human perception because of the non-human capabilities of the camera and the lens (e.g. camera movements, zooming, panning); and because of editing techniques (e.g. montage). Cinema's machinic agency offered new ways for thinking of duration. In his two-volume work on the cinema—*Cinema 1: The Movement-Image* (first published in 1983) and *Cinema 2: The Time-Image* (first published in 1985)— Deleuze argues that cinema is divided into two phases, which correspond to the transition of narrative structures from a mostly mechanical to a machinic notion of time.

The first phase of cinema, Deleuze states, 'involves closed systems, actions of contact, immobile instantaneous sections' (2005: 61); and predominated in films made before World War II. The mechanical time that they are organized around takes the form of a linear bloc of movement in which the past, present and future are sequentially arranged. Here time is subservient to space, reducing duration to a mechanical notion of the universe; and this understanding of time correlates to a habitual perceptual understanding of the body, where every action is followed by a reaction. The early cinematic period (identified with the pre-war era), for the most part, attempted to reproduce such a coherent narrative structure—a whole—that can be grasped as such. This narrative form can be traced back to the writings on theatre and prose in Aristotle's *Poetics*. Here, '[t]ragedy is an imitation of an action that is complete, and whole, and of a certain magnitude. A whole is that which has a beginning, a middle, and an end' and is organised through an 'orderly arrangements of parts' (Butcher, 1902: 31). A bodily sensori-motor functioning correlates mostly to a 'whole' narrative structure, which arranges time in an expected linear progression.

If the cinematic medium was made to correspond to an understanding of a sensori-motor functioning of the body, one can deduce that there was–and there continues to be—an attempt to rationalize and anthropomorphize the cinematic image. While Deleuze elucidates how in some instances the 'movement image' deviates from the temporal wholeness of beginning-middle-end, it nonetheless inevitably falls back to a formula where the durational vectors become commensurable with one another.

The second, machinic, phase of cinema occurs in the post-war period. It is marked by more radical experimentations with narrative forms of time where otherwise 'the material universe, the plane of immanence, is the *machine assemblage of movement-images*' (Deleuze, 2005: 61, emphasis in original). In one sense, all films–an amalgam of human and machinic agencies—encapsulate both notions of time. However, for Deleuze, many films of this period make a more concerted effort to project an image of time that veers towards the machinic (as examples Deleuze suggests Alain Resnais, Jean-Luc Godard and other directors—mainly working within European cinema). In his analysis of Resnais' *Last Year at Marienbad* (1961), which consists of non-converging plot trajectories, Deleuze states that 'narration will consist of the distribution of different presents to different characters, so that each forms a combination that is plausible and possible in and of itself, but where all of them together are incompossible with each other' (2013: 106). The three main characters of the film appear both co-present and yet incompossible with each other through jump cuts, memory narrations, a dissonance between sound and optical image, and mirrored settings that further displace any notion of a coherent temporal whole. This image of time is cognitively made possible by moving beyond any human sensori-motor perceptual framework. As such, the action-reaction formula collapses. A breakdown of the habitual perceptual bodily co-ordinates provides a possible glimpse of this time-image. The virtual image alluded to through this cinematic form was made possible by moving beyond a human perceptual frame. This image of time is expanded and re-articulated with the digital era.

The transition from analog to digital media further extends this machinic image of time through new media constellations. In his essay 'Time @ Cinema's Future: New Media Art and the Thought of Temporality', Timothy Murray presciently notes

how the new media community, through art projects, engages with 'Deleuze's charge that it receive and respond to the virtual as an energetic field of what has [yet to be thought] or registered' (2010: 360). For him, 'the body or shape of time, the event within which we find ourselves, is itself something of a phantom oscillating between the not yet and no longer, virtual but graspable in the actual' (2010: 352). The digital image thus takes the virtual beyond the time-image's cinematic confinements—i.e. the distance between moving-image and spectator—as it is brought to bear onto the contemporary sensing body. Deleuze himself claims that 'the electronic image, that is the tele and video image, the numerical image coming into being, had either to transform the cinema or to replace it to mark its death' (2013: 272). The multivalent facets of the time-image, which was revealed and articulated by the cinema yet extends beyond cinema itself, may thus be further explored via the digital image. Returning to the digitized screen in media projects, we might say that the 'organization of space … loses its privileged directions, and first of all the privilege of the vertical which the position of the screen still displays, in favor of an omni-directional space which constantly varies its angles and coordinates' (Deleuze, 2013: 272). This 'perpetual organization [of the electronic image] in which a new image can arise from any point whatever of the preceding image' (Deleuze, 2013: 272) radically changes any notion of space-time.

An image of the Utopic

How might the space-time of utopia be rethought in light of the image of time produced by digital media constellations such as *diplorasis*? In this section I attempt to investigate the conceptual notions implicit with-in utopia ('place', 'non', 'good') in relation to the space-time of the mediated body.

Thomas More's *Utopia* (1516) is a socio-political fictional account of an 'ideal' commonwealth. The highly regulated socio-political structure of the utopian island entails strict management and control of its citizens. As Elizabeth Grosz points out in her essay 'Embodied Utopias', here utopia 'verges on the dystopic, the dysfunctional utopia' (2001: 136); and she proceeds to explore the intricate relation between embodiment and utopia. As the socio-political idealized space of More's *Utopia*

depends on the control of the individuals that comprise the utopian community, Grosz attempts to think of the time rather than the space that is implied within the utopic. She states that:

> It is clear that they [utopias] involve not only the political and social organization of space and power—which Plato and More have recognized and specifically addressed—but also two elements that remained marked, if unremarked upon, in their works: the notion of time as becoming (Grosz, 2001: 137).

A temporal rather than a spatial consideration of utopia offers another lens from which to explore the paradoxical nature of the utopic.[3] Grosz uses Deleuze's reading of Henri Bergson's account of duration in relation to utopia. The Bergsonian–Deleuzian trajectory articulates how duration becomes crucial in our conception of diverging and non-commensurate times. This account of time can be observed through the cinematic image (as already discussed). In *Bergsonism* (first published in 1966), Deleuze criticizes the notion of scientific time, exemplified by Einstein's theory of relativity, writing that what Bergson 'condemns from the start is the whole combination of space and time into a badly analyzed *composite*, where space is considered as ready-made, and time, in consequence as a fourth dimension of space. And this spatialization of time is undoubtedly inseparable from science' (1991: 86, emphasis in original).

For Deleuze and Bergson, time is continuously becoming—past and present are co-extensive. And so 'the future that emerges is only one of the lines of virtuality of the past' (Grosz, 2001: 143).[4] The temporal consideration of the utopic proposed by

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[3] Whilst there are other scholars (Bloch, 1986; Muñoz, 2009) who have accounted for a temporal rather than a spatial consideration of utopia, Grosz is particularly relevant for the argumentation of this article because she attempts to address the notion of utopia in relation to Deleuzian time and embodiment.

[4] This account of time is based on Henri Bergson's diagram of the inverted cone where the pure past is the base of the cone, the apex is the very present, and the intermediary shaft is the active past. The active past defines the present—the apex—and at the same time always refers to the pure past. Memory as such is the element that provides a framework for Bergson's definition of duration. (Bergson, 1990: 133–177).

Grosz offers a productive starting point for extending and re-thinking the utopic in relation to media and the mediated body that has been developed thus far. In order to explore this line of thinking the multivalent notions of the utopic will need to be re-considered through particular readings of the mediated body. But let us return to the meaning of utopia in relation to embodiment.

The 'dilemma' of utopia is, according to Grosz, 'compressed into the very name of that ideal' (2001: 135). More's neologism is derived from the Greek words *ou* [ου]—non, and *topos* [τόπος]–place. The word also 'puns on another Greek compound eu-topia' (Logan, 2016: xi). The *eu* [ευ] refers to *eutihia* (ευτυχία) – happiness, i.e. an idealized image of society. The tense relationship between a happy-place and a non-place informs a double reading of utopia as a site where strict social organization is antagonistic to individual expression. Many of 'the discussions of the ideal commonwealth by Plato and Aristotle' are used in the 'institutional arrangements' of More's *Utopia* (Logan, 2016: xxviii). The economic principles that underpin utopia are autonomy and self-sufficiency. The 'best commonwealth will be one that includes everything that is necessary to the happiness of its citizens, and nothing else' (Logan, 2016: xxviii). This economic basis (βάση) of utopia is supplemented by a metaphysical belief system that resembles Christianity. Yet the friction lies between the actual projection of utopia and what lies beyond it, its impossibility: the non-place. And here Grosz suggests 'a different reading of the pun: not the good place is no place, but rather no place is the good place' (2001: 135). This ambivalent view is reflected in More himself, a devout Catholic who, in some accounts of utopia, would have been opposed to the religious tolerance that is part of the fictional utopia (Logan, 2016).

This diagram of memory informs the 'virtual', a term that Deleuze develops from Bergson. The virtual for Deleuze is 'the subjective, or duration' (1991: 42). He claims that 'duration is indeed real succession. But it is so only because, more profoundly it is *virtual co-existence*: the coexistence with itself of all the levels, all the tensions, all the degrees of contraction and relaxation (*détente*)' (1991: 60, emphasis in original). This understanding of the virtual should be distinguished from the virtual in Virtual Reality. Virtual Reality, an oxymoron, refers to interactive immersive spaces that may employ both digital and analog media. The simulated spaces of VR are designed to subvert the participant's habitual sense of space/time. This is achieved by prosthetically responding to the bodily senses. Panoramas, trompe l'oeil paintings, zoetropes are only some examples of pre computer-generated V.R. spaces.

Therefore 'the divergent personalities and views of his two main characters project his own persistent dividedness of mind' (Logan, 2016: xxii).

In *Rethinking Utopia: Place, Power, Affect* (2017), David M. Bell undertakes to pay '"subversive fidelity" to More's term: retaining the concepts that provide it with its conceptual specificity ("good", "no" and "place"), but rethinking their meanings and their relations' (2017: 5). Through Grosz, it becomes possible to envision how a non-place corresponds to the Bergsonian-Deleuzian duration. Non-place correlates to the virtual that is 'graspable in the actual' (Murray, 2010: 352), in the example of cinematic duration. But what is meant by place? Here I would like to echo Bell's claim that 'by positioning utopia as a temporal rather than spatial form leaves the places produced by such operations somewhat undertheorized' (2017: 13). The advances of technologically mediated bodies and their effect on utopia need to be revised from a temporal as well as a spatial perspective. The 'space' and 'time' of the composite 'space-time' need to be articulated separately in order to conceptualize their relations. As Deleuze emphasizes, the entwined notions of space and time, differ in kind (1991: 22). Place and space in relation to utopia need to be more generally traced.

Place is the ground for formulations of 'good' and 'no', and their ensuing relational possibilities. It is possible to grasp a utopia only through an initial actual image of place. In More, both the 'good' and 'no' are projections of a particular place that he describes in detail. The image of place provides the ground for any thinking of utopia, i.e. the projection of 'good' or 'eu'- and 'no' or 'ou' respond to a grounding topos. Bell, following geographer Doreen Massey, explains how the notion of place informs variables for 'the position of the subject in space and time (their class, their race, their gender, the "moment" in which they experience the place)' and the variables 'ensure no two articulations of the "same" place will in fact be "the same"', and 'these different articulations will come together to produce place as a collective form…' (2017: 105). Bell underscores the 'intra-active' (2017: 6) relational possibilities that are intrinsic in place, a term he borrows from Karen Barad. Here I would like to focus on a pre-individual place that is not determined by a subjective position (class, race, gender), but instead looks at how space is constructed through media formats.

Whilst space-time relations in-form any subjective determination of place, in order to proceed it is important to focus only on how the subject is affected by the external technological environment.

Deleuze and Guattari's account of smooth and striated space offers a possible means for thinking of a pre-individual notion of place. Smooth and striated involve different types of multiplicities. Striated space is identified with metrical space (from the Greek word *metro*: 'unit of measurement'): it measures and codifies. An example of this is 'the magnitude of a vertical line between two points' that 'can be compared to the magnitude of a horizontal line between two other points: it is clear that the multiplicity in this case is metric' (2016: 561). This type of magnitude 'allows itself to be striated' and its 'determinations are magnitudes' (2016: 561). Smooth space however involves a resistance to striation. These magnitudes 'cannot divide without changing in nature each time' (2016: 562). This duality corresponds to extension and duration. The two types of spaces: the one extensive and quantifiable, and the other intensive, qualitative and temporal are intertwined when related to matter. Smooth and striated thus 'give rise to far more difficult complications, alternations and superpositions' and 'nothing completely coincides, and everything intermingles, or crosses over' (2016: 560).

Architect/designer Bernard Cache's *Earth Moves: The Furnishings of Territory* provides a way from which to understand the relations between smooth and striated space through perception. Cache distinguishes between on the one hand mathematically classified singularities that are defined by 'extrema' and on the other a variably 'inflective' perception. In the former 'it would seem that we see nothing but these extrema, for our perception is entirely oriented in this way' (1995: 35, 36). Whilst in the latter case we encounter a perception that 'we "can't" become used to' as 'it is a mobile image in which an unlocatable position eludes our comfort' (1995: 36, 37). And following Deleuze's concept of cinematic time, Cache articulates how these mobile images 'allow us to glimpse a pure temporality to which we can't accede as subjects' (1995: 37). This image of incommensurable time is different in kind from, yet inextricably bound with, space.

It is often argued that the space with-in new media, as materialized through spatio-temporal practices, is increasingly unhinging our perceptual groundedness and gives way to an unlocatable and paradoxical mode of incommensurability. Our reliance on a habitual understanding of space becomes suffused by unlocatable mediated environments. Habitual space, striated space or extrema are becoming ever more problematized by the incommensurable durations of media environments. This is due to the proliferation of electronic telecommunications and computational systems that conflate the environment with-in the body. To return to utopia, this affects the relationality of 'place', 'good' and 'no' in a paradigmatic way as the space-time composite changes. What is the status of utopia when boundaries between the living body and technical object are less clearly defined?

Here Bernard Stiegler's 'process of exteriorization' in *Technics and Time, 1* where 'technics is the pursuit of life by means other than life' (1998: 17) is significant. The subject becomes bound to a process of exteriorization—via technical means—and becomes reliant upon its prosthetic technical environment. In this sense, our understanding of space-time points to radical possibilities and implications for the mediated body that move beyond a habitual notion of space, (as shaped by Euclidean geometry).

In More's utopic account a deterministic, measurable, rationalized and conquerable image of place privileges a striated form. More's fictional account of the utopic relies on textual descriptions of quantifiable architectural forms. Consequently, the notion of incommensurable time is restricted but not altogether absent. It materializes in the non-place, and is confined to a mental image of what extends beyond the limitations of a deterministic place. The controlling of space where the inhabitants 'live in full view of all … leaving no desire for corruption; no hiding places' (More, 2016: 62) resonates with the medium of linear perspective invented a century before More's writing. The totalitarian all-seeing utopic image correlates with Catherine Ingraham's explanation of perspectival space in *Architecture and the Burdens of Linearity*:

> The invention of perspectival space was the simultaneous invention of a picture plane, a spatial 'box' (a room), and a system for the production of everything else in relation to the picture plane and spatial box. Thus it

> becomes possible to construct an unambiguous and consistent spatial structure of (within the limits of the 'line of sight') infinite extension, where bodies and the intervals of empty space between them are merged in a regular fashion into a [total body] (1998: 48).

The systematic control assumed within idealized eu-topian space finds its appropriate medium in the projection of perspectival space. Thus the 'projective drawing system that comes out of it produces a spatiality in which everything has its place and can be properly represented in relation to everything else … keeping the subject in line with what the subject is supposed to see' (Ingraham, 1998: 48–50). In both the eu-topic and perspectival projection, space is reduced to a geometrical extensity. Geometrical extensity corresponds to the Cartesian logic where 'extension is infinitely divisible, and thus not constituted of simple elements (atoms), contains no voids, is homogenous and continuous; it is indefinite' (Lyotard, 1991: 37). One might add here that the very technique of perspectival representation, its efficient manner of putting things in line, makes the image of eu-topian discipline more easily conceivable. So one form of drawing projection—perspective—can be said to complement a system of socio-economic organization–the eu-topic. The form of a 'perfected' u-topia becomes visually–and thus conceptually—further enhanced through the medium of perspectival representation.[5] Hito Steyerl's 'In Free Fall: A Thought Experiment on Vertical Perspective' elucidates how linear perspective 'is aligned to culminate in one single vanishing point, located on a virtual horizon defined by the eye line' (2011). Steyerl makes the claim that space via linear perspective becomes measurable, i.e. a striated space. This allows it to be not only 'calculable, navigable' and 'mathematically predictable', but consequently, 'it introduces the notion of linear time' (2011). This form of extensity or striated space excludes the smooth space of incommensurable durations.

Eu-topian ideals 'flourished' in the eighteenth and nineteenth centuries (Grosz, 2001: 197), as exemplified by speculative architectural proposals of the

[5] There are different types of perspectival representations; here I am referring to linear perspective.

Enlightenment (Foucault, 1979: 222). One such case is the speculative Panopticon prison. Foucault's paper entitled 'Panopticism' (1974) re-considers the prison model from Jeremy Bentham's 'The Panopticon; or, The Inspection House' (1787). The Panopticon, a centrally planned prison with an inspection tower in the centre and prison cells arranged along the circumference of the circular plan, produced a very simple and effective means of spatially controlling the prisoners. The radial prison cell arrangement was visually accessible from the watchtower.[6] From this central point the guard is able to view any of the prison cells. The prisoner, aware that they might be seen at any time without ever knowing when, can never see the inspecting guard (due to the blind arrangement). The one-way viewing system means that the guard can possibly observe any prisoner at any time, whilst the prisoners are aware that they are the objects of a systematic gaze. The prisoner is psychologically made to internalize the gaze of the singular surveillance guard, introjecting the all-seeing 'Eye'. According to Foucault, the prisoner 'is seen, but he does not see; he is the object of information, never a subject in communication' (Foucault, 1979: 200). The power of the disciplinary body as a pan-optic [all seeing] eye subverts the subject 'in communication' into a disciplined object of observation. As such, the Panopticon extends More's eu-topic ideals from fictional speculations into a fully developed, efficient and sophisticated spatial mechanism. Foucault states that the Panopticon resembles 'the utopia of the perfectly governed city' (1979: 198).

An-other topos?

The ideal utopia is a projected image of society, i.e. it is based on an actual place but can never be actualized. The eu-topic image, as Grosz points out, excludes both time and embodiment. Ou-topia as a non-place gravitates towards a Deleuzian notion of a virtual and thus undefined image, shifting beyond the limits of the eu-topic. The non-actuality of utopia and its paradoxical relation to an actual place (*topos*) are explored in Foucault's 'Of Other Spaces: Utopias and Heterotopias' (first published in 1967). Utopias, according to Foucault, act as a kind of projection; they 'have a

[6] For the full description of the Panopticon layout including the relationship of each cell to the inspector's house via particular screens (blinds) and lighting conditions see Bentham (1962: 39–66).

general relation of direct or inverted analogy with the real space of society' (1984: 3). Heterotopias are 'real places … which are something like counter-sites, a kind of effectively enacted utopia in which the real sites, all the other sites found within the culture, are simultaneously represented, contested and inverted' (1984: 3). If utopia is the projected image of society then heterotopia, an actual site, introjects this utopian image. Both the impregnated meanings of utopia, i.e. eu-topia/ou-topia, inform the heterotopic place. To explain this complex relation between the utopic and the heterotopic, Foucault uses the mirror as an analogy. He states 'in so far as the mirror does exist in reality, it exerts a sort of *counteraction* on the position that I occupy' (1984: 3, emphasis added). The 'placeless place' (1984: 4) of the mirror makes it possible to view oneself where they are not. The heterotopic becomes a means by which to conceptually articulate the nuanced relation between the ideal or non-place and the actual, a function many utopian studies scholars ascribe to utopian texts (Jameson, 2007; Sargisson, 2012; Moylan, 2014). The virtual surface of the mirror is co-existent with, yet distinct from, the actual space that it reflects. The placeless-ness of the mirror actively impinges on the actual place it faces. The social and individual body conflate with one another in Foucault's reading of the mirror. It is crucial to emphasize the placeless-ness of the mirror and its effect on place. The mirror makes one appear where they are not, simultaneously when one counteracts this image they are responding to their actual position via this virtual surface. The mirror informs an image of the other both as an ideal and a potential: these correspond to the not so clearly divided image of an eu-topos and an ou-topos.

Foucault's account of the relation between heterotopia and utopia, the actual and the virtual, can be re-considered in terms of digital social media. Facebook has recently acquired a VR headset that aims to develop its technology to create, according to founder Mark Zuckerberg, a sense of 'unbounded spaces and experiences with people in your life' (in Metz, 2016). However, the recreation of this sense of 'unbounded' space implies prescriptively containing and controlling the operations of the bodily senses through technologies. Under the guise of creating a new experiential space, emerging technologies mark the body as a site for economic and political control, evoking a contemporary form that moves towards a 'utopia' of control: i.e. a dystopia.

With this radical shift in our cognitive-perceptual understanding of time-space, then it comes as no surprise that the 'control' of bodies is, as Bell claims, 'more nebulous' than earlier forms of domination (2017: 10). Utilizing the digital, it 'breaks individuals down into banks of data, a process that constructs variously embodied identities' (2017: 10). This 'breaking down into banks of data' of embodied subjects subversively plays itself out in *diplorasis*. Taken to a breaking point, the machine that controls the images reaches an impasse: as the viewing participant confronts their image the relation that is enacted and revealed is between viewer and self-image, instead of an immersion with an image 'out there'.

The proliferating developments of VR headsets (Oculus Rift, Freefly, Fiit, etc.) take the perceiving body as a given. The techno-body in these applications is reduced to an informational unit rather than a sensory field whose perceptual limits are constantly shifting. The body as such is mediated only to the degree that it behaves according to prescribed inputs. The economic and political forces driving the practices and institutions involved in the making of VR are—to a certain extent—instruments for the submission and exploitation of bodies. If 'the decentered self has been repositioned as the locus of techno institutional forces pushing and pulling to achieve maximal efficiencies' (Dyson, 1998: 39), it is mainly through the subversive use of these media that we are able to encounter the virtual possibilities of a non-prescribed place, i.e. the ou-topic. With the informational age the notion of a prescribed idealized social image shifts to the space of new media, in this case VR technologies. New media, however, have the potential to further explore and extend our understandings of the perceptive and cognitive limits of the body. The virtual within digital processes thus offers a new way of conceiving the heterotopic, through the re-articulated temporal understandings that the electronic image produces. Here Foucault's account of the mirror needs to be extended in order to encapsulate its digitized translation. The possible permutations of the digitized mirror—as explored in *diplorasis*—involve virtual trajectories that actively affect the actual environment of the perceiving body.

The non-place of utopia affects the rate by which virtualities might become actualized and subsequently expands the scope of the virtual producing a furthering

of 'difference for itself'. 'No', 'good' and 'place' thus enter into shifting affective relations (Bell, 2017: 6). Both the Foucauldian notion of heterotopia and Deleuze's account of cinema provide a paradoxical image of time and offer possible means to reconsider how digital image constellations might evolve in response to prior forms of thought. Deleuze states that:

> [t]he present is the actual image, and its contemporaneous past is the virtual image, the image in a mirror. According to Bergson, "paramnesia" (the illusion of deja-vu or already having been there) simply makes this obvious point perceptible: there is a recollection of the present, contemporaneous with the present itself (2013: 82).

The co-presence of the present and actual self with the past and virtual self reveals how the perception of a sensori-motor self co-exists with a re-collecting self. As the sheets of time are not separate and linear but co-existent and non-linear, the cinema offers a possible conception of time that moves beyond human perception. This non-human perception of time then folds back and expands the human cognitive understanding of time. The mirror as a hinge is thus a moment where the actual and virtual are possibly apprehended as co-existing. Yet the mirror, as Foucault suggests, is conceived of as a surface that counteracts the position that I occupy. Employing the shift between the virtual and actual space suggested by utopia and after rethinking cinematic time, how do digital technologies mediate these relationships? The innovation brought by the cinematic image was its ability to make it possible to conceive of durations that co-existed yet were incommensurable with one another. In order to achieve this it was crucial for the cinematic eye to move beyond human limitations of sensory perception. The prosthetic extension offered by the cinematic medium made it possible to rescript the body's sensory field by moving beyond its own limited perceptive field. The emerging operation of new electronic media is that they can re-employ this machinic image of time onto the human body.

The digitization of the mirrored image begins to challenge the established distances between a perceiving body and its relation to its other. Through the cinematic image it became possible to conceive of the interval between separate

durational vectors. Consequently, this affects our cognitive understanding of time. With electronic media the disparate times of the cinema are incorporated within the perceiving body. In *diplorasis*, the re-presented body in the mirror of the stereoscope is thus there where one is not–yet it does not passively affect the subject as in an actual mirror, but instead veers towards a 'lifelike' simulacrum (a copy without an original referent). *Diplorasis* aims to extend the fragmentation of the self in the 'smooth space' of digital media by altering the image of the self beyond one's control. This begs the questions: How is the perceiving actual body affected by its informational spectral other? What happens when one views oneself from the point of view of another in the digitized field? The experience of the projected images is that one experiences one's body as an object of another's gaze. The 'three-dimensional' stereoscopic perceptions of one's face or back for example, views that one would never see of oneself, position the viewer from a point of view of an-other. The changing images in *diplorasis* are defined by views taken not only from an adult eye-level point of view but also from various other points of view (child eye level, surveillance camera, etc.), making it unclear if one is being observed by another person or by a machine. Whilst this mimics the machinic eye of the cinema the subject matter in this case becomes the viewer's own body and the body's mediation in the electronic image. Re-stitched together the viewer will observe themselves in close-up or from a distance, from above or below as an object in space.

Conclusion: Towards the E-topic

The spatio-temporal affects of the mediated body have been outlined in order to re-think topia before utopia. The reason for undertaking this line of enquiry is because topia, through electronic media, are more actively altering pre-existing notions of time-space, and particularly through media art practices. As Manovich states: 'coupled with a computer used for real-time control, electronic telecommunications leads to a new and unprecedented relationship between objects and their signs' (2001: 170). In terms of visuality and perspectival representation Steyerl posits that '[l]inear perspective has been supplemented by other types of vision to the point where we may have to conclude that its status as the dominant visual paradigm is

changing' (Steyerl, 2011). Here I have tried to show how electronic media re-shape the perceptual spatio-temporal field of visuality as it plays out on the mediated body. Thus I refer to the electronic space-time of the topos: the e-topia.

Another way to consider the body in utopia and media is in terms of the polarization between what gestalt psychologist James J. Gibson (1950) calls the visual world and the visual field. The visual world denotes our manner of actually seeing, whereas the visual field refers to a visual representation. If the former is an actual experience the latter is a representation of the experience. The disparity between how we observe and then how we interpret the observation is constantly changing with the alterations of visual media. Media determine the relationship between the visual world and the visual field. The perspectival medium constructs a visual field by de-limiting embodied vision and its duration. Alternatively, the stereoscope integrates the actual operation of human sight within its technical construct, it thus intertwines the visual world (the actual visual experience) and the visual field (the representation of this visual experience). The recording of a non-human perception via the cinematic image, whilst not directly correlating to a visual world, i.e. to a human vision, expands the cognitive understanding of the visual and its relation to the non-visual by enabling a conception of diverging and non-commensurate times. What it offers, indirectly, is an image of matter in itself. The visual world—actual vision—is informed by the visual field because the body internalizes its mediation. A mediated body is co-determined by the media that inform it, affecting the perceptual-cognitive behaviours of that body. The codification of the image in digital media makes it possible to expand and transform the visual field of the cinematic image by making it bear more directly on the visual world. This expansive synthesis of the digitized visual field and its incorporation within the visual world, as has been explored through *diplorasis*, provides new ways to consider consciousness in space and time.

The non-linear overlap between recollection and perception as made possible through cinema's time-image constructs a concept of time that moves beyond subjectivity. This image of Deleuzian cinematic time becomes incorporated within the body via digital media. The body in new media, as in the case of *diplorasis*, is split

in space and time. Drawing on the relationship between the utopic image and its relationship to embodiment (as figured via a re-articulation and extension of Grosz's account of utopic time to new media assemblages) means it is important to consider the disembodiment within perspectival representation and how this reflected the idealized eu-topic image. Beyond a reading of time and its effect on embodiment and utopia it was also pertinent to revise how time is related to space. This led to an engagement with the interwoven meanings of place/space in Bell's *Rethinking Utopia*. Here I argued that it was important to rethink topia/place before utopia, and furthermore to explore space before place. The very notion of space/time that underpins utopia needs to be revised by looking at incommensurable and unlocatable mediated environments that move beyond a habitual understanding of space.

This led to a radical break from the eu-topic image of an all-seeing eye that found its apotheosis in the Panopticon prison. The analogy of the mirror, from Foucault's writing, provided a useful prompt to explore the more paradoxical relations between the utopic and its other—the heterotopic. The utopic in visual media thus moves from an ideal eu-topia to a 'non' place. If Foucault's heterotopia focuses on the relationship between an eu-topia and an ou-topia, with the electronic image the non-place of ou-topia thrives at the expense of the eu-topic. The very nature of electronic media, their ability to synthesize and appropriate many other media formats, implies that they are constantly effacing/reversing the image that they generate. The gaze of the perspectival image thus explodes within the electronic topos giving way to an unlocatable and paradoxical e-topia.

Competing Interests

The author has no competing interests to declare.

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