

# Auto-scopic Space: Re-thinking the Limits between Self and Self/Image

George Themistokleous : University of Leeds, England

## ABSTRACT

*An experimental installation project of my own making, the *diplorasis*, aims to re-think the human sensorium by considering the bodily perceptual boundaries that are induced by visual media processes. Within the installation space the participant will, unexpectedly, encounter stereoscopic projections of himself/herself from previous instances and multiple perspectives. The photographic cameras within the device that are attached to sensors have been 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 screens that project the image for the participant's view. These stereoscopic images induce an illusionistic three-dimensional projection of the subject.*

*The reduplicated, projected, and three-dimensionally simulated self in the *diplorasis* begins to trigger a questioning of how the body is understood within visual media. During the visual experience one has a solipsistic perception of oneself. The participant views himself both from outside and inside his body. The out-of-body experience of observing oneself from the multiple points of view of another (as a simulated object) is somehow countered to the embodied operation of the physical binocular eyes. The uncanny closeness of a neutral image "out there" (e.g. of a house) evoked by the original stereoscopes is now subverted, as the digitization of the stereoscope allows for unexpected self-projections of the viewer. The *diplorasis* brings to the fore a particular reading of a sensory body that veers between, on the one hand, a projected image generated by electronic information, and on the other, the embodied response to this projected spectral other. As electronic processes are changing the perceptual and cognitive limits of the body, how do these shift our understanding of inside/outside?*

## INTRODUCTION

Philosophers, when confronted with outside and inside, think in terms of being and non-being. Thus profound metaphysics is rooted in an implicit geometry which – whether we will or not – confers spatiality upon thought.<sup>1</sup>

In the article "The interior as an architectural principle," architectural historian Bart Verschaffel states: "the beginning and principle of architecture is the creation of an 'interior.' To dwell or to live and to be rooted, it may be sufficient to mark a place and create a centre."<sup>2</sup> As such, architecture plays a fundamental role in constructing an inside, one that correlates to an outside. Gaston Bachelard, in *The Poetics of Space* (1958) refers to an interior/exterior dialectic that is inherent

in nature. Shells, nests, caves, drawers, chests, and bowls are some examples that are used to evoke notions of interiority. Bachelard demarcates a clear distinction between outside and inside. He writes that the "dialectic of division... has a sharpness of the dialectics of yes and no, which decides everything (sic)."<sup>3</sup> The delineations of a spatial inside/outside, as Verschaffel notes, are "stored in our language and culture"<sup>4</sup> as is evident in Bachelard's own writings, where different poems (from Rilke to Eluard) manifest variations of these binary relations. More crucially for the purpose of this article, Verschaffel also recounts how the body is the principle node for not only sensing this relationship between inside/outside, but also informing perhaps another understanding of inside. He claims that:

The content of "inside" and "outside" shift all the time, and are sometimes even reversed. One can even be "out of one's mind"... *All this suggests that architecture is maybe less modelled after the body and the body experience, but that, on the contrary, our body experience is (also) structured with architectural models.*<sup>5</sup>

As the body, via new media technologies, becomes increasingly re-configured, it alters our thinking of the relation between inside and outside. Thus it is crucial to question how notions of inside and outside are changing with informational processes, and to speculate on the ensuing effect that the informational has on the body. It becomes possible, through new media practices, to conceive that architecture will become increasingly modeled according to bodily experience, and consequently less reliant on established architectural models.

Following this line of enquiry, I will attempt to explore how new media technologies offer a means to re-think the space of the body through a custom-made installation of my own making, the *diplorasis*. The bodily spatiality assumed within the *diplorasis* does not fit within the more established dialectic of inside/outside. If architecture is the fundamental mediator between inside and outside, world and home, how does this dialectical relationship change with the advent of the informational? Informational systems are altering conventional notions for thinking the subject/object relationship. The article will begin by outlining the technical and conceptual process of the *diplorasis*. This will be followed by looking at Dan Graham's video installations *Video Piece for Showcase Windows in a Shopping Arcade* (1976) and *Continuous Present Past(s)* (1974), where the conventional relationship between subjective body and space becomes challenged with the use of the video medium. The unhinging between the body and its enveloping space will then be further considered by focusing on philosopher Elizabeth Grosz's writings on the pliable body. The pliability of the body and its connection to objects will also be thought via the psychasthenic subject and insect mimicry in Roger Caillois' "Mimicry and Legendary Psychasthenia" (1935). As the space and the representation of space become less distinct, any notion of a fixed subjective framing becomes further unhinged. With this unhinging, it becomes possible to explore an expanded understanding of the relationship between self and self-image in space. In this respect, Deleuze and Guattari's concept of the "body-without-organs" and the articulation by Georges

Teyssoit of the “organs-without-bodies” expand a concept of the body that moves beyond prescribed understandings of organism. The indistinct bodily boundaries will then be reconsidered by looking at the video art project *Inasmuch as It Is Always Already Taking Place* (1990) by Gary Hill. The “pliable” reading of the body from Graham’s video projects to writings on psychasthenic perceptions, and then Deleuze and Guattari’s unconventional considerations of organic bodies will be superimposed with the informational pliability of the body. The indistinct boundaries between body and space will be viewed in relation to *informational* processes and the cybernetic body. The article will conclude by speculating on the changing role of the body in the *diploresis*, and how it shifts our understandings of self and self-image, inside and outside. It aims to foreground speculations about how architecture and the understanding of architecture change as a consequence of this *informational* pliable body.

#### AN AUTOSCOPIC SPACE: THE *DIPLORASIS* <sup>6</sup>

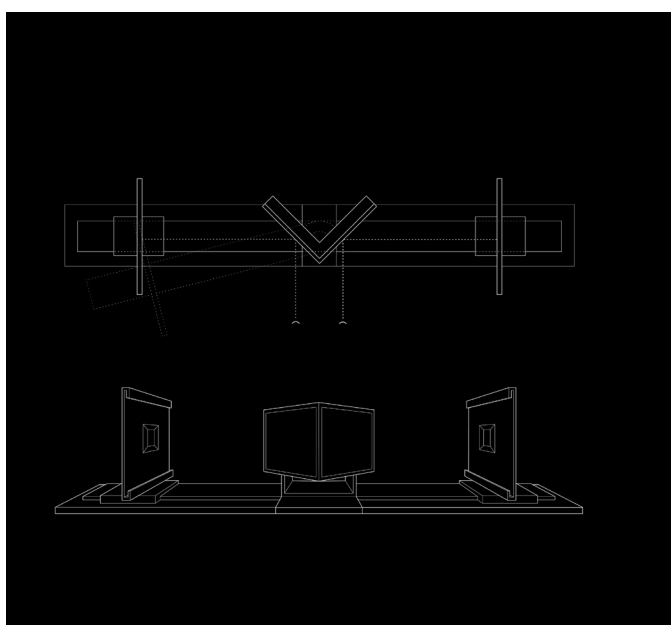
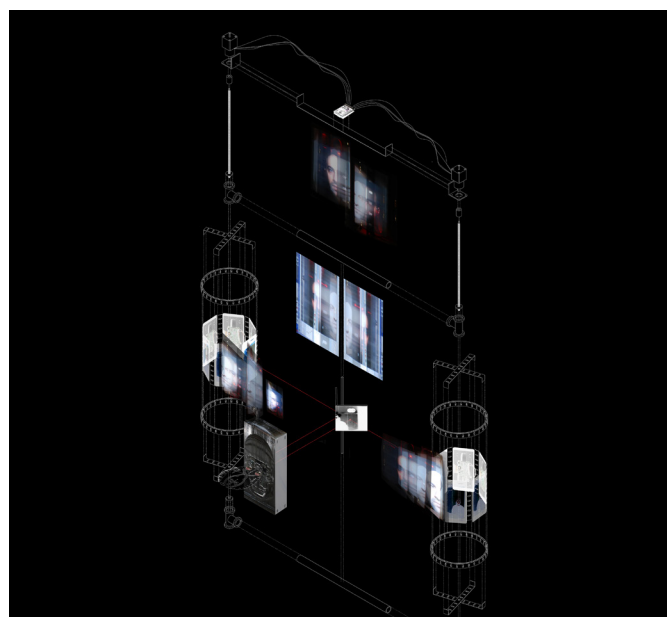
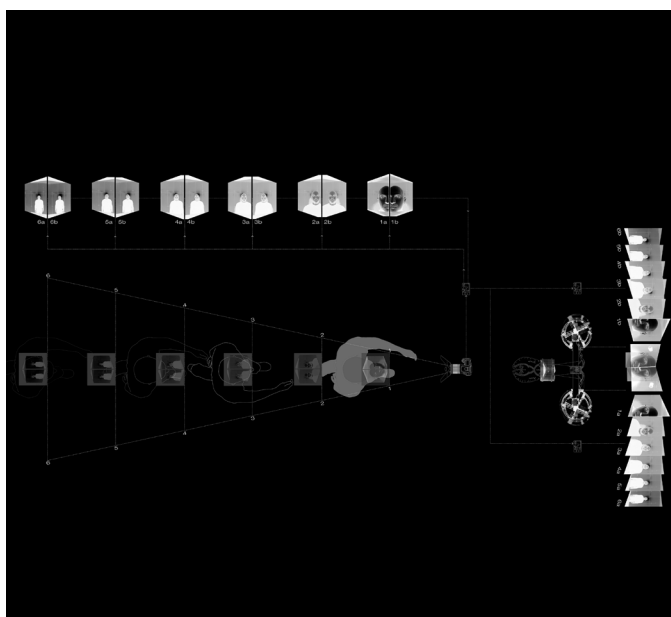
The *diploresis* is a multi-media installation/device of my own making (2014-2017). The installation – located inside an abandoned house in Nicosia – is essentially a constructed corridor (Fig. 1). The corridor (6 x 1.2 x 2.4 metres tall) made from timber struts (4 x 4 or 2 x 4), holds up more than 120 mirror panels (most of these measure 60 x 40cm). The inside of the corridor, excluding the curtained entrance, vinyl floor and translucent glass panel, is composed entirely of mirrors. The reverse side of the corridor – the exposed timber frame – contains various cameras and electronic wires. The juncture between the outside and inside is negotiated via two-way mirrors.

When someone enters the brightly lit corridor they will observe the sandblasted translucent screen at the far end of the corridor that outlines a mechanical instrument. Within this glass panel is a cavity in the shape of a human head, with two peepholes (Fig. 2, 3). The participant will walk towards the screen and position his/her head inside the wall cavity. When the participant looks through the peepholes they will encounter a stereoscopic projection of themselves from previous instances inside the corridor space of the installation (Fig. 4). The stereoscopic images will then be replaced with another view of the participant; as the images change they become increasingly misaligned and manipulated (Fig. 5, 6). When viewing the projected images, the participant becomes aware that their image was captured in previous instances when they were walking along the corridor; that is, literally, the space behind the viewer’s back (at the very moment when they are seeing themselves). The photographic cameras within the device are attached to sensors and have been 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 placed on the reverse side of the mirrored corridor and have been concealed from the participants’ view via two-way mirrors (and controlled lighting conditions). What appears as a normal mirror for the participant inside the corridor is, in some cases, transparent for the camera on the reverse side.



Above  
Figure 1: G.Themistokleous. View through the mirrored corridor facing the machine. 2017.  
<http://www.machiningvision.org/visual-devices-diploresis/4589953031>





**Above top left**

Figure 2: G.Themistokleous, photograph of Diplorasis. View through the corridor facing the screen wall. Author: G.Themistokleous. Software/hardware engineer: S. Socratous. <http://www.machiningvision.org/visual-devices-diplorasis/4589953031>

**Above top right**

Figure 3: G.Themistokleous, photograph of Diplorasis. Closeup view, through the peepholes, of the wall cavity (made from acrylic sheets). <http://www.machiningvision.org/visual-devices-diplorasis/4589953031>

The installation uses various software and hardware processes (DSLR cameras, stepper motors, LCD screens, Arduino and Raspberry Pi computer chips, PIR motion sensors, gphoto2 application, OPENCV library) that are centred on an older medium — the Wheatstone<sup>7</sup> stereoscope (invented in the 1830s). The Wheatstone stereoscope frames and separates the eyes in order for each eye to view the corresponding slightly misaligned image (from the stereoscopic pair) that is projected on the mirror placed directly in front of the separate eyes (Fig. 7). Each eye will thus independently receive the image projected on the slanted mirror that it faces. As the two distinct images momentarily hover around this split distance, the visual cortex will “attempt” to bridge the gap, and overlay the two images. This operation reveals and emphasises 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 stereoscope is a device where the relations between referent and represented image are discontinuous. The stereoscopic image within the *diplorasis* aims to extend the Wheatstone stereoscopic operation by attempting to incorporate live digital feed of the viewer’s own body from

previous instances in 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 the unexpected self-projection and self-manipulation; the device becomes an auto-scopic machine. Auto-scopic derives from the Greek words *eautos* – self, and *scopos* – watcher; and refers to the experience of seeing oneself from the perception of another; that is from a position outside of one’s body.

### WHAT BODY?

In order to begin developing this notion of an auto-scopically generated space, it is important to turn to the work of artist Dan Graham. Graham’s *Video Piece for Showcase Windows in a Shopping Arcade* (1976) is a video installation that establishes a nuanced relationship between viewer and object. Taking the showcase window that frames a commercial product, Graham explores the effect that the display arrangement has on the viewer. The shop front products of American commercial spaces in the 1970s were often backed by a mirrored surface in order to “seductively reflect fragmented aspects of the spectator’s body”<sup>8</sup> in relation to the displayed object. By focusing on a corridor with two shop window displays on either side, Graham attempts to disrupt the viewer’s direct connection with the display object by having an enlarged mirror behind the objects run parallel to the shop-front, and using video to record the viewer. The videos are then played back on the opposite sides of the corridor. Through this intervention, the spectator’s bodily position is brought within the space of the opposite shop-front, and vice versa. Thus “a spectator can see both sides of his ‘picture’ as well as both sides of the opposite case’s picture; and himself and spectators looking at the opposite case from front and back angles simultaneously.”<sup>9</sup> In the installation, the simulated commercial space that organises a particular connection between the viewer and the product gives way to multiple views of the subject in relation to himself/herself, other viewers, and the wider space of the corridor. Through the video projection, the viewer unexpectedly sees oneself from outside his body. The unfixing of his/her fixed subjective position disrupts the viewer’s sense of orientation in relation to a commercial object. This undermines the commercial space and



**Opposite middle left**

Figure 4: G.Themistokleous, diagram of Diplorasis operation. Stereoscopic pair activated via sensor capture of participant. Author: G.Themistokleous. Software/hardware engineer: S. Socratous. <http://www.machiningvision.org/visual-devices-diplorasis/4589953031>

**Opposite middle right**

Figure 5: G.Themistokleous, diagram of Diplorasis. Plan view showing multiple syncing of shots. Author: G.Themistokleous. Software/hardware engineer: S. Socratous. <http://www.machiningvision.org/visual-devices-diplorasis/4589953031>

**Opposite bottom**

Figure 6: G.Themistokleous, diagram of Diplorasis operation. Exploded axonometric with components. Author: G.Themistokleous. Software/hardware engineer: S. Socratous. <http://www.machiningvision.org/visual-devices-diplorasis/4589953031>

**Above**

Figure 7: G.Themistokleous. Drawing of Wheatstone Stereoscope, plan and perspectival views. <http://www.machiningvision.org/visual-devices-diplorasis/4589953031>

any prescribed identity that might be associated with it. The space of Graham's video projections displaces the perceiving viewer, producing what Elizabeth Grosz describes thus: "The space in between things is the space in which things are undone, the space to the side and around, which is the space of subversion and fraying, the edges of any identity's limits."<sup>10</sup> The binary opposition of interior/exterior assumed in Bachelard is thus questioned by shifting another binary opposition, the subject/object pair, out of focus. In another one of his installations, *Continuous Present Past(s)* (1974), Graham attempts to overlay the ambiguous experience of perceiving combined present and past moments. The installation is located inside an enclosed internal space – a room – where all the walls are mirrored. One of these walls holds a screen monitor placed below a recording video camera. The monitor plays back the recording after eight seconds (video delay). The viewer will view himself/herself through the monitor from eight seconds ago and from sixteen seconds in the past, as the camera also records the delayed projection from the monitor. Graham writes "the mirror at right angles to the other mirror-wall and to the monitor wall gives a present-time view of the installation as if observed from an 'objective' vantage exterior to the viewer's subjective experience and to the mechanism that produces the piece's perceptual effect."<sup>11</sup> The *diplorasis* aims to re-consider these temporal disjunctions and continuums that Graham dealt with in his installation project. However the *diplorasis* moves beyond the medium of video by utilising a hybrid of new and old media processes that sense, record and project the participant's own body in space. The assemblage in the *diplorasis* stages a particular interaction between the body and its prosthetic technological objects that explore the relationship between body and its self-image. In order to further probe the entwinement between body and space, it is pertinent to turn to Grosz's writing on the body.

In the paper "Lived Spatiality," Grosz suggests a pliable reading of the corporeal body in relation to its spatiotemporal framework. Grosz attempts to undermine the binary set of terms that assume a certain reciprocal relationship between each pair. She states that

The limits of possible spaces are the limits of possible modes of corporeality: the body's infinite pliability is a measure of the infinite plasticity of the spatiotemporal universe in which it is housed and through which bodies become real, are lived, and have effects.<sup>12</sup>

This pliability is manifested by the incorporation of objects within and through the bodily schema. Grosz develops her articulation of the pliable body by referring to Caillois' seminal paper "Mimicry and Legendary Psychasthenia" (1935) and specifically, his account of insect mimicry as a spatial phenomenon. The blurred boundaries between the insect's organism and the environment are not, according to Caillois, a consequence of the survival instinct of the insect to protect itself from its predators, since the predators are dependent on smell rather than seeing. Grosz writes:

The mimicry characteristic of certain species has to do with the distinction it makes between itself and its environment including other species. Mimicry is not a

consequence of space but rather of the representation of space, the way space is perceived by the insect and its predators.<sup>13</sup>

The distinction between space and the way it is perceived by an organism is therefore crucial for understanding the collapse of the subject's fixed position in space/time. Caillois connects the notion of insect mimicry to psychologist Pierre Janet's account of "legendary psychasthenia." Caillois writes that "it is with represented space that the drama becomes specific, since the living creature, the organism, is no longer the origin of the coordinates, but one point among others; it is dispossessed of its privilege and literally *no longer knows where to place itself*."<sup>14</sup> The presupposition that an individual consciousness is distinct from its spatial environment is thus undermined. The subject, in order to be rooted in the world is dependant on a perceptual framing. With the psychasthenic subject, this framing shifts out of focus. Thus, the "meshing of subject and body fails to occur."<sup>15</sup> This non-convergence between the subject and its position in space assumes that the enveloping space overtakes the subject. Thus, according to Caillois:

*I know where I am, but I do not feel as though I'm at the spot where I find myself. To these dispossessed souls, space seems to be a devouring force. Space pursues them, encircles them, digests them in a gigantic phagocytosis. It ends by replacing them. Then the body separates itself from thought, the individual breaks the boundary of his skin and occupies the other side of his senses. He tries to look at himself from any point whatever in space.<sup>16</sup>*

Within the *diplorasis*, there are instances where the viewer's subjective perspectival perception of space is subverted. The viewer, by unexpectedly encountering himself/herself as an other, will be caught in a game of identification. Where does the subjective viewer position himself/herself? As the body loses its fixed positioning in space, the conscious subject will experience a split with his/her projected image. This depicts another thinking of inside and outside, one that is similar to Grosz's, when she states that "the barrier between the inside and the outside, in the case of the human subject as much as the insect creature, is ever permeable, suffused not only by objects and apparatuses but by spatiality itself."<sup>17</sup> It is significant to underscore how the digital image processes employed within the *diplorasis* enact a somewhat similar disruption between the subject and its bodily image.

## THE "BODY-WITHOUT-ORGANS" AND PARTIAL OBJECTS

As the relation between the body and its enveloping space in the *diplorasis* becomes less distinct, how might we begin to articulate this understanding of the threshold between body/space? In order to extend this line of enquiry it will be useful to dwell in more detail on alternative readings of the organic body by looking at the body in Gilles Deleuze and Felix Guattari's "How Do You Make Yourself a Body without Organs?" and its articulation by architectural historian Georges

Teyssot. The organs in body-without-organs (BwO): "appear and function only as pure intensities... the organ changes when it crosses a threshold, when it changes gradient."<sup>18</sup> Deleuze and Guattari diverge from the "conventional idea of the body as functioning according to the internal logic and hierarchies that have long dominated physiology and clinical discourse."<sup>19</sup> Georges Teyssot defines the BwO as a body "purely in its exteriority, in relation to other bodies, perceived through relationships of surface, difference, affect, and desire."<sup>20</sup> The organism, on the other hand, is defined as "conceiving the body exclusively in terms of its interiority, its regime of internal distribution, in which autonomous organs fragment the whole into multiple parts, breaking up its integrity."<sup>21</sup> This articulation of the organism is extended by Teyssot to suggest the formulation of organs-without a body, such as transplants and grafts, that is, a hybrid. According to him, these entities are "bodiless – orphaned and celibate trapped between life and death."<sup>22</sup> This "partiality" defines "connections and couplings."<sup>23</sup> It is important to conceive of the *diplo-rasis* as a site where organic and inorganic bodies converge and diverge, thus multiple couplings shift the perceptual and cognitive coordinates of the body. As Teyssot claims, "such an organ [the organ-without-body], released from the body, may be sold as a commodity, as well as 'grafted onto' another body, another organism, be it biological, mechanical, or computational."<sup>24</sup> The body in the *diplo-rasis* is fragmented through its digital capture and then computationally recomposed. As the camera in the *diplo-rasis* captures the body, its stereoscopic projection operates as an extension of the bodily organs of the eyes. What is seen, the partial object of the viewer's own body, complicates the embodied visual operation. The processes of embodied vision, activated by the binocular operation of the eyes that are stereoscopically framed, are made to forcefully confront a disembodied image of the subject's own self. There is a correlation in this respect with artist Gary Hill's video installation *Inasmuch as It Is Always Already Taking Place* (1990). Hill's installation comprises different sized video screens that project partial images of his body. The images, according to Teyssot, are of "revealed and cut-out body parts... simultaneously 'fetishized' and rendered inaccessible."<sup>25</sup> The views within the *diplo-rasis* reveal partial images of the body from various angles; by three-dimensionalising the image, the viewer's own body becomes unexpectedly fetishised, its conversion into an "object" makes it paradoxically removed from the actual body. In the *diplo-rasis* the viewer, who is seeing himself/herself in a similar way to Graham's *Video Piece for Showcase Windows in a Shopping Arcade*, suddenly experiences a partial image, as in Hill's *Inasmuch as It Is Always Already Taking Place*, of their own body. This probing of the body is intensified by the "live feed" of the digitized stereoscopic image.

If the conventional relation of inside/ outside corresponds to notions of the organism, these notions are constantly shifting with the changing understanding of a cybernetic-organic hybrid. Donna Haraway describes how these dualisms are contested in her seminal essay "A Cyborg Manifesto: Science, Technology, and Socialist Feminism in the Late Twentieth Century." She writes:

High-tech culture challenges these dualisms in intriguing ways. It is not clear who makes and who is made in the relation between human and machine. It is not clear what is mind and what body in machines that resolve into coding practices. In so far as we

know ourselves in both formal discourse (for example, biology) and in daily practice (for example, the homework economy in the integrated circuit), we find ourselves to be cyborgs, hybrids, chimeras.<sup>26</sup>

The perceiving body in the *diplo-rasis* becomes a hybrid – made possible only through particular configurations of informational systems with embodied perception. The setup, to a certain extent, briefly destabilises the perceptual groundedness of the viewer's frame. It does this by unexpectedly making one confront the gaze of another. The viewer's perception is reversed onto their body. Subsequently, this encounter reveals other ways by which to think of the body via the image. It becomes useful to consider how the imagery of embodiment is mediated with informational processes. In this respect, Katherine N. Hayles' account of the cyborg in *How we became Post-human: Virtual Bodies in Cybernetics, Literature and Informatics* is particularly relevant. Hayles repeatedly underscores how a new subjectivity emerges through the crossing between a "materiality of informatics with the immateriality of information."<sup>27</sup> The *diplo-rasis* generates a situation where the embodied viewer encounters their informational body. This experience is in-formed by electronic media and their re-appropriation of older media (in particular the stereoscope). As Hayles claims, the experience of embodiment (and this would also apply for the *diplo-rasis*) is "imbricated" within culture. What is therefore assumed through this article is an extension of the pliable psychophysical body that is now incorporating the informational within its bodily schema. As a media art project the *diplo-rasis* attempts to explore how the embodied viewer is changing via emerging cultural constructs (database media). In the *diplo-rasis*, an instance of the changing status of the body in new media is played out.

## CONCLUSION

This article set out to re-visit the outside/inside dialectic that contributes to a certain established thinking of architectural space. In Bachelard's *The Poetics of Space*, the reciprocity of outside and inside is informed by looking at natural organisms and their implied geometries. Through the *diplo-rasis*, a custom-made media installation, another articulation of the body is explored, one where the body is not so clearly delineated from its external environment. The viewer that experiences the installation stereoscopically confronts himself/ herself. This simulated auto-scopie machine produces a rupture between the self and its self-image. As the body, in this case, becomes suffused by its enveloping environment, it no longer adheres to a clearly demarcated position in space. By looking at other instances that probe the interaction between the body and its limits, it was possible to configure a line of enquiry that extends such considerations of alternative body/space relations. These alternative relations include Graham's video installations from the 1970s. Through the video medium Graham explored a dissonant relation between the perceiving viewers and their environment. This situation was then further probed by looking at examples where the subjective body is indistinct from external space. To this end, the concept of the pliable body and Caillois' work on psychasthenic patients were referred to. As the subjective framing becomes suffused by its con-



text, Deleuze and Guattari's body-without-organs and Teyssot's "organs-without-bodies" offered ways of considering how the understanding of the body also increasingly changes. This change is construed not only through the psyche, but also in relation to the organic schema of the body. The multi-faceted malleability of the body, as sketched out by Graham, Grosz, Caillois, Deleuze and Guattari, and Teyssot, finally meets the informational in this article's exploration of the outside/inside dialectic. With the digitization of the image and its possible permutations, the body becomes further infiltrated, shifting its perceptual and cognitive coordinates. Through the virtual space of the *diploresis* I am both inside and outside my body.

It thus becomes crucial to speculate how architecture is changing and continues to change with this informational turn of the pliable body. In *The Alphabet and the Algorithm*, Carpo states that "the history of architecture features a conflation of different technological timelines... its modern history is linked to the traditional chronology of the industrial revolution."<sup>28</sup> The same materials that were introduced with the birth of modernism in the early twentieth century are still predominant in the building industry today. Yet, new media technologies are radically re-scripting our sensory bodies. Hence Marshall McLuhan's claim that "the extreme bias and distortion of our sense-lives by our technology would seem to be a fact that we prefer to ignore in our daily lives"<sup>29</sup> becomes particularly relevant today. As imaging formats increasingly conflate with (in) the bodily schema, one questions the very boundaries between body and its prosthetic technologies. Emerging "architectures" will increasingly inhabit this very interface between the body and its prosthetic sensory and cognitive faculties.

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## CREDITS

Visual material for *Diploresis*: George Themistokleous. Software/hardware engineer for the *Diploresis*: Savvas Socratous.

## NOTES

1. Gaston Bachelard, *The Poetics of Space* (Boston: Beacon Press, 1994 [1958]), 212.
2. Bart Verschaffel, "The interior as architectural principle," *Palgrave Communications* 3, Article number: 17038 (2017): 2.
3. Bachelard, *The Poetics of Space*, 211 (emphasis in original).
4. Verschaffel, "The interior as architectural principle," 2.
5. *Ibid.*, 4 (emphasis in original).
6. The *diploresis* was developed as part of my doctoral research, entitled *Embodying Perception: Countering the Limitations of Visual Representation* (2013-2017). The description of the *diploresis* has been presented in conferences, publications and featured in an exhibition. Earlier stages of its development have been exhibited at the Acadia 2016 Exhibition - *Posthuman Frontiers: Data, Designers and Cognitive Machines*, University of Michigan, Taubman College. And published in: George Themistokleous, "Diploresis: The Other Side of Vision," in *Acadia 2016 Posthuman Frontiers: Data, Designers, and Cognitive Machines: Projects Catalog of the 36th Annual Conference of the Association for Computer Aided Design in Architecture*, eds Kathy Velikov, Sandra Manninger and Matias Del Campo, Acadia Publishing Company, 146 – 151.  
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- George Themistokleous, "Mediating the Interval," in *Image Temporality: The Relation of Time, Space and Reception of Visual Media, Yearbook of Moving Image Studies (YoMIS)*, eds Lars C. Grabbe, Patrick Rupert-Kruse and Norbert M. Schmitz (Darmstadt: Böhner-Verlag, 2017) 156-179.  
 7. The *diploresis* utilises the Wheatstone stereoscope, invented by Sir Charles Wheatstone in the 1830s. For more on the Wheatstone stereoscope see Jonathan Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (Cambridge: MIT Press, 1992).  
 8. Dan Graham, "Notes on Video Piece for Showcase Windows in a Shopping Arcade," in *Two-Way Mirror Power: Selected Writings by Dan Graham on his Art*, ed. Alexander Alberro (Cambridge: MIT Press, 1999), 48.  
 9. *Ibid.*, 49.  
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## BIOGRAPHY

George Themistokleous ([www.machiningvision.org](http://www.machiningvision.org)) is an architect and lecturer in architectural design, history and theory at the Leeds School of Architecture. His doctoral research re-considers the changing role of visual perception in relation to media technologies through custom-made installations. Due to the interdisciplinary scope of the work, it has been presented, exhibited and published in different fields (art, architecture, media, film). The forthcoming papers: 'Mediating the Interval' and 'Digitally Stitching Stereoscopic Vision' will be published in the *Yearbook of Moving Image Studies –YoMIS* (Böhner-Verlag) and *Visual Research Methods in Architecture* (Intellect) respectively. He is co-editor of the book *This Thing Called Theory* (Routledge).