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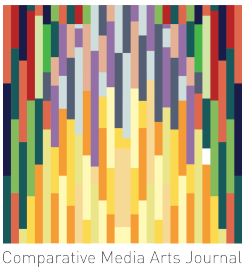
You Must Be Wondering Where You Are

Article, Dave Biddle



Abstract

Contemporary socio-economic systems composed of cybernetically modelled technologies are increasingly characterized by a valuation of measurable information. Such a state reduces its subjects to informational mosaics, where no aspect of the individual can evade measure. For such subjects, the absence of absence has a disenchanting effect. Serving as a supplement to a series of 360° videos, the following article studies 360° camera technology to analyze this disenchanting transformation of subjectivity in contemporary cybernetic-capitalism, and further reflects on experimentations with recursive aesthetics in 360° video as a visual grounding through which to re-enchant the position of the cybernetic-subject.

Keywords: 360° Video, Cybernetics, Autopoiesis, Gestalt

The State Which Sees

The reflexive organization of Western Capitalist societies according to cybernetic modelling has brought forth unprecedented social transparency (Han 2015, 1), a condition that continues to succeed through the integration of internet-based technologies into every aspect of daily life. Personal internet devices such as smartphones, tablets and laptops increasingly become "materialized ideologies, […] a concrete governmentality" that form the massive data-collection apparatus of the surveillance state (Tiqqun 2020, 91). The influence of cybernetics as a mode of socio-economic organization is identifiable in the exclusion of all social and economic activities that cannot easily be technologically measured (Tiqqun 2020, 27). When describing this general loss of unmeasurability in daily life, a result of turning socio-economic operations over to "opaque automated procedures and black box algorithms", artist Hito Steyerl concludes that, in contemporary society, "to be eliminated is to be automated, and conversely, to be automated is to be eliminated" (Steyerl 2018).

Following this line of inquiry into the realm of visual media, I turn to the 360° camera to consider the (im)possibility of subjectivity within cybernetically modelled social systems. I begin my study of 360° video, and visual media more generally, with a passage from G Spencer

Brown's text *Laws of Form* (1969): "Thus, we cannot escape the fact that the world we know is constructed in order to see itself. This is indeed amazing. Not so much in view of what it sees, although this may appear fantastic enough, but in respect of the fact that it can see at all. But in order to do so, evidently it must first cut itself up into at least one state which sees, and at least one other state which is seen" (105).

A cursory analysis of traditional video media is necessary before moving on to discuss 360° camera technology. To do so I will borrow from the theoretical framework of biologists Humberto Maturana and Francisco Varela, whose concepts of "structural coupling" (1992, 75-80) and "perturbation" (1992, 95-99) are foundational to the Autopoietic Model of Cognition. In their analysis of the relationship between cognitive systems and their environments (1992, 135), Maturana and Varela claim that a system can be understood in two distinct ways: one where the system is autonomous and "the environment doesn't exist", and another where "features of the environment and the behaviour of the [system]" are fundamentally connected (1992, 135). Although these views are epistemologically incompatible, Maturana and Varela suggest that a full comprehension of cognitive systems requires a combination of the two (1992, 135). As such, the Chilean biologists and philosophers of mind present a radical constructivist view of cognition that navigates the space between representationalism and solipsism. They describe the relationship between a system and its environment as being causally linked only from the perspective of an outside observer, which suggests that a system is internally structured in such a way that corresponds to certain aspects of its environment, but that those correspondences exist only as seen externally by a separate cognitive system (Maturana and Varela, 1992, 135). In this analysis the observer uses shifting figure / ground relations to grasp the complex reality of the system and its environment, and by doing so forms in integral part of the total structure of the system.

In the case of traditional visual media, the image, like the system, can be understood both as an autonomous entity *and* as an interconnected part of a larger network of images and symbols acting as its environment. As such it is the observer (or viewer) who acts as the meta-ground to connect them, since the viewer is a cognitive network through which images can form meaningful relations, and thus make possible any interactions between images and their symbolic milieu. The meta-ground is the groundless absence out of which all other figure / ground relations emerge, whether within the boundaries of an image, or in the way the image relates to its broader symbolic environment.

Drawing on Gregory Bateson's articulation of figure / ground dynamics in Gestalt Psychology (1972, 189), we can observe that the lines of distinction establishing figure / ground relations for an observer are based on classifications of certain aspects of the observed world, but these lines of distinction, or frames, are themselves subject to classification and can thus be included in their own distinguishing processes (Bateson, 187,188). It is necessary then for the meta-ground to function recursively to allow for lines of distinction to loop back onto themselves and adjust according to their own rules of distinction. This means that the ground against which all figures are made perceivable must also be subject to lines of distinction. Thus, the frame that delimits a background is "a frame whose function is to delimit a logical type" (Bateson, 189). Bateson points out that it is this outer frame that gives rise to paradox, since, according to his interpretation of Bertrand Russell, "no class can be a member of itself" (189).

Turning back to traditional video media for an example, we can observe that the frame that distinguishes the figure from the ground in a YouTube video might be delimited by the distinction "human / non-human". The ground will thus be the non-human environment within which the character in the video exists (though neither are *actually* human). The frame that distinguishes the ground from the meta ground is the edge of the laptop screen which makes the distinction "YouTube video / non-YouTube video". This outer frame is the line between the "state which sees" and the "state which is seen", and so must always be in flux according to a recursive loop of perception and distinction. The figure in the YouTube video might be wearing a hat that reminds the viewer of a tree outside their window, causing the latter to notice that tree against the background of the video character. The meta-ground then is always folding back into the figure in such a way that constantly reinvents the figure's meaning, and which constantly re-establishes new frames based on these new meanings. The meta-ground allows for connections to be made across the boundaries of logical types and thus to give rise to new meanings within the figure / ground relations on the screen. This in turn re-establishes the delimitation between the ground and the meta-ground in an endlessly transformative loop.

But if the boundaries of the meta-ground are always in flux, how can we regard it with any ontological certainty? Here I propose that that which cannot be seen of an image provides the viewer a space within which to situate themselves as the meta-ground, or the "state which sees".

The Camera Which Erases

The cyberneticization of contemporary life creates a system that philosopher Byung Chul Han describes as *The Transparency Society*: a society whose valuation of quantification attempts to turn all aspects of life into measurable information (Han 2015, 2). "Today's social system", states Han, "submits all its processes to the demand for transparency in order to operationalize and accelerate them [...] Transparency stabilizes and speeds the system by eliminating the Other and the Alien" (Han 2015, 2).

Serving as emblematic for the type of social system described by Han, the 360° image offers its viewers no absence or void within which to situate their own perceptual apparatus, or self. Instead, the 360° camera offers an image that is made up entirely of the "state which is seen". To accomplish this structural organization, the 360° camera captures light from all directions using multiple fish-eye lenses, stitches their videos together as a rudimentary digital mosaic, and then edits itself out of the images it creates, leaving a post-surgical scar as a trace. Viewers of 360° video find themselves in a space where there is no room for their constitution as a meta-ground, only evidence of their erasure in the form of a "seam" in the visual information. I propose that the individual subject within cybernetic society functions as a "seam": a subtle aberration of information that indicates where a composite image is stitched together. As such they are involved in the structural operations of a particular system under the pretense that they are the central figure of importance in that system, while in fact they are fundamentally excluded from its reality (as the viewer of the 360° video is excluded from the structural reality of the image)

The Matrix Which Embeds

To further analyze images through a systems-theoretical framework, I turn to physicist Heinz von Foerster and his notion of "the matrix which embeds" (von Foerster, Maturana 2012). Recalling Gregory Bateson's phrase "the pattern that connects", von Foerster, in conversation with Humberto Maturana, proposes the possibility of a three-fold understanding of the world: the scientific, which is rooted in separation; the systemic, which looks for "the pattern that connects"; and the holistic, which von Foerster describes as an attempt to understand "the matrix which embeds". Using this elegant analytic framework to think about images, we can say that the scientific view identifies separate aspects of an image as figures to be understood as autonomous totalities; the systemic view identifies the relations between these totalities and thus studies how the interconnected aspects of the image (which includes aspects of the broader symbolic environment that the image exists in relation to) constantly reconstitute each other through their separateness across a shared ground; and finally, borrowing from Maturana, the holistic view includes the observer as a meta-ground to understand the "connectedness of all aspects as a matrix in which the different elements, either parts or relations, are embedded". By including the observing system in the total matrix of parts and relations, the holistic view is closely aligned with von Foerster's definition of second order cybernetics (Scott 2004, 1372). According to von Foerster's broader conception of cybernetics, "The environment of an observing system 'contains no information; it is as it is'. Von Foerster's achievement was momentous: he shows that as we draw on our science to explain how we ourselves work we find ourselves in a hermeneutic circle of explanation" (Scott 2004, 1372).

With von Foerster's analytical system working alongside Gregory Bateson's articulation of figure / ground dynamics in Gestalt Psychology (189) we can see that the 360° camera, by capturing visual information from all directions and editing itself out of its own final product, constructs a new kind of image that changes the way a viewer situates themselves in relation to figure and ground. In contrast to the traditional camera which leaves an absence in its final product - an aspect of the totality of the image that "contains no information" - the 360° camera creates a product that values only the "state which is seen". In 360° video, the absence of an absence within which to situate a "state which sees" suggests that the self-reflexive organization as described in *Laws of Form* no longer applies.

As stated above by Bernard Scott about von Foerster's recognition that self-reflection through scientific means leads to "a hermeneutic circle of explanation" (Scott 2004, 1372), the visual apparatus, like the meta-ground, is made up of a category of information that is fundamentally unmeasurable. If turned into an object of observation (eg. if we photograph a camera lens or we observe a dissected eyeball), the "state which sees" becomes the "state which is seen". Like trying to catch a reflection of yourself in a mirror before it meets your gaze, the impossibility of the "state which sees" simultaneously acting as the "state which is seen" maintains a void for the constitution of subjectivity. In a series of experimentations with 360° video technology titled *You Must Be Wondering Where You Are,* I use aesthetics of reflexivity to re-establish a point of opacity that serves as an absence wherein the viewer can situate themselves as a subject again. Creating a paradoxical image of recursive infinitude, these videos re-establish the figure / ground structure within 360° video by turning the image's ground into a figure within itself: a totality that is contained within itself as a part.

The Absence Which Re-Enchants

In *Laws of Form (1969),* G. Spencer Brown observes an enchanting and inescapable paradox at the heart of perception: "the fact that the world we know is constructed in order to see itself". The increasing tendency toward maximum transparency that characterizes cybernetic capitalism has a disenchanting effect by constructing a world that can be observed, and thus measured, *in toto* (Han 2015, 3). The panoramic view of the 360° camera represents a mode of viewing that is particular to these current socio-economic trends, where absence is devalued and subjectivity is erased; the meta-ground found in absence gives way to pure presence.

In 1931, mathematician Kurt Gödel put forward a self-referential formula that used recursion to reveal a paradox within the "type-theory-protected and therefore supposedly paradox-free world defined by Russell and Whitehead in their grandiose three-volume oeuvre *Principia Mathematica*" (Hofstadter 2007, 138). According to cognitive scientist Douglas Hofstadter, Gödel "created a 'subjectless formula fragment'" (Hofstadter 2007, 142). In doing so, Gödel formulated the mathematical equivalent to a figureless ground, and then inserted that same ground back into the formula as its own figure. By revealing the paradox of re-entry, Gödel subverted the figure / ground relations of Bertrand Russel and Alfred North Whitehead's logical types, establishing a meta-ground that would allow for figures to become their own ground in a series of cascading infinities.

Attempting to follow Gödel's paradoxical logic, the video series titled *You Must Be Wondering Where You Are* approaches the 360° camera as a "subjectless video fragment" with a total structure that can be inserted back into itself to re-establish in the image a space of unobservability as a site for the constitution of subjectivity. In keeping with the theme of re-enchantment, *You Must Be Wondering Where You Are* seeks to insert the absent subject back into 360° video and establish a new meta-ground in immersive media by relying on an endless looping of figure and ground that can only be imagined through a dizzying fractal-logic. Each video seeks to evoke an infinite regress by exploring different ways that limited amounts of information can pass through the boundaries separating figure / ground / meta-ground.

The Links Which Connect

Cube - https://vimeo.com/491373502
Disk - https://vimeo.com/521510567/76b1749d9e
Cylinder - https://vimeo.com/527021332/6536f23e82

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About the Author

Dave Biddle (being me) is an artist and theorist (being conspiracy theorist) who works often with video, sound, and text (being non-disciplinary), and always with performance (being made of bodies). Dave Biddle lives in Vancouver (being the traditional territories of the Musqueam, Squamish and Tsleil-Waututh First Nations) where he continues to consider the lilies (being being).