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1 Preface: The New Paradigm

One way to begin to build the needed apparatus is to use the following approach: to rethink the nature of nature based on our best scientific theories, while rethinking the nature of scientific practices in terms of our best understanding of the nature of nature and our best social theories, while rethinking our best social theories in terms of our best understanding of the nature of nature and the nature of scientific theories.¹

This book is about the formation of a discourse on images that has been waiting in the wings for some time. A wider context for the emergence of this discourse is the crumbling of a system of thought that is called metaphysics. That this linear and historical model of comprehending the world is being replaced by a new paradigm ushered in by a constellation of accelerated developments that can be variously described as ‘algorithmic’, ‘ecological’, ‘new-materialist’, ‘fragmented’ and ‘holistic’ is generally recognized. What is less well understood is how this departure from the representational discourse affects the photographic image. A belief still lingers in the ability of the photograph to represent people, events and situations, in its power to aid recognition, memory, description and archiving, as if these powers can be retained independently from the new discursive practices that are driven by algorithmic, neurological and quantum models.

Perhaps it is because we are so used to placing great trust in photography’s ability to describe reality truthfully, to represent it faithfully and to report it accurately that we grew accustomed to believing that these powers of representation and description are somehow outside the movement of history and time, giving us a universal power of

¹ Barad, Karen *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Durham, NC: Duke University Press, 2007. P. 30

comprehension that is immune to the failures of our own limited experience. In allowing ourselves to be persuaded that our cognitive skills place us above our own human, fallible and mortal nature, we became a little like gods, and the ability to represent the world as a picture is for us more than a way of seeing – it became akin to theology, i.e. something larger than the finite trajectory of human life that bestows on it universal and eternal values of ‘truth’, ‘understanding’ and ‘knowledge’.

And yet, this understanding of photography as a reliable representational mechanism cannot be reconciled with what we now know about the world and ourselves. Briefly stated, these new understandings are: first, the centrality to contemporary culture of generative algorithms introduces elements of undecidability, randomness and unpredictability into all aspects of life.² Second, new insights into the structure of the brain suggest that the higher brain functions (i.e. rationality) cannot operate independently from instincts, desires and gut responses, overturning the Cartesian intuition that rationality and emotion can be spilt asunder.³ And third, the new conception of matter that is derived from quantum physics indicates that matter is not solid, independent and self-contained, but can be better described as an entanglement between bodies and techniques, organic and inorganic, artificial and natural, mind and body.⁴

² Parisi, Luciana. *Contagious Architecture: Computation, Aesthetics, and Space*. Cambridge, MA: MIT Press, 2014.

³ Damasio, Antonio R. *Descartes' Error: Emotion, Reason, and the Human Brain*. New York: Avon Books, 2004.

⁴ Barad, Karen. *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Durham,

NC: Duke University Press, 2007. P. 362.

At bottom, these new models reject the foundational premises of the Western tradition: subject-object, image-thing, form-content, identity-difference, substance-essence. What replaces these notions is not a single unified theory but a constellation of loosely connected developments that reject the belief in the existence of an ‘objective reality’ that exists independently of our attempts to grasp, picture, modify and analyze it. These developments are incompatible with the representational model of knowledge, which grounds truth in the ability of the mind to produce legible images of fixed and knowable nature. In every case, hierarchical structures of control-and-command give way to disjointed and fragmented processes driven by artificial intelligence, random and contingent assemblages, and automated models of decision making.

1.1 Genealogy of representation

The representational model is based on a twofold principle that underwrites most knowledge systems of Western civilization. The first part is drawing a limit, a dividing line between two kinds of entities: theoretical (spiritual) and material (corporeal). This is a fundamental (but ultimately false) distinction between what something is and how it is described. The word *apple* describes a fruit with crisp and sweet flesh (🍏), but the word *apple* cannot be bitten into, even though both *apple* and 🍏 mean the same thing. Images and objects are forever conceptually separated and belong to different categories: images are clones of objects, never the other way around. There is no grey area, no twilight zone that permits the existence of entities that are part matter and part spirit. Form and content are not only conceptually separated, they are also defined in opposition to each other, so an image is that which is not an object and an object is that which is not an image. In the same way that Newtonian (classical) physics considers mass and energy as separate and categorically different entities, representation understands the image as absolutely and ontologically distinct from an object. The

second part of the representation principle establishes a fixed standard that is shared by all the disciplines and all the faculties of human perception. For while representation admits that change happens, the one thing that never changes is representation itself. For that reason, there is a hierarchy and stability in the representational model that is universal, ahistorical and eternal.

Because representation is so deeply woven into the flesh of the Western *subject* it is more than a methodology, it is his methadone. Marx famously remarked that religion is the opium of the people, but he forgot to add that representation is their legal high. Indeed, the socio-political function of representation is not dissimilar to that of religion: both establish a hierarchy, a given-once-and-for-all order, an eternity of clones destined to repeat the same thing over and over again. It is not an accident that Immanuel Kant offers representation as the mechanism that will free men from the bondage of the Middle Ages, for representation holds the keys to knowledge that does not require the authority of god, the priest or the good book.⁵ However, representation is capable of this accomplishment because – like religion – it situates an external authority that men must abide by. Because it is invisible, tasteless and odorless, limitless and universal, representation commands respect as the law of the land, the totality that nothing is exempt from. As the basic premise of classical science, representation implies objectivity and disinterested observation guaranteed on the one hand by a clear-cut separation between the scientist and the object of study – so the scientist’s own material conditions do not affect investigation – and on the other by an assumed neutrality that allows the scientist to assert the universality of ‘his’ findings.⁶

⁵ Kant, Immanuel. *An Answer to the Question: 'What is Enlightenment?'*. London: Penguin, 2009.

⁶ Olkowski, Dorothea. *Gilles Deleuze and the Ruin of Representation*. Berkeley: University of California Press, 1999.

Upheld by the conviction that the images and things belong to two ontologically distinct categories, the belief in the objectivity of representation reigned supreme until the appearance of photography in the 19th century, which presented metaphysics with an impossible conundrum: an image that is both distinct from and continuous with an object. According to the Platonic, Aristotelian and even Newtonian models of knowledge, a chimera like this cannot exist. To say otherwise is to declare that mass and energy are somehow one and the same thing (as Einstein did in joining them as $E = mc^2$ – energy equals mass by speed of light squared – in 1905). Suddenly, the Platonic theory of knowledge – the 2,000-year-old fable of the cave (the sensual world is an illusion, true knowledge is accessible only to reason) – caved in, and the shadows on the walls of the cave started to mingle with objects as they appear in broad daylight. Plato's cave gave way to the photographic exposure, which merges darkness with a flash of lightning in one techno-poetically enabled instant. Despite the superficial similarity between Plato's cave and the photographic darkroom, photography suggested a radically different model of knowledge, for here the materiality of the photographic process is written directly into the image in such a way that the sensual and the rational, the process and the image are fully entangled and indivisible. The conceptual, the physical, the social and the sensual are all mixed together in the outlandish moment of photographic exposure, overturning the metaphysical principle of the separate disciplines in charge of ideas (philosophy), matter (physics), society (ethics) and sense (aesthetics). The binary split between the conceptual and the material, which guaranteed the objectivity of the representational method, is destroyed by the photograph, for here the material and the conceptual are one and the same. In other words, the 🍏 is not more real than the photograph of an *apple*, for at the last count, both 🍏 and *apple* are symbolic avatars of mass/energy. The fruit does not pre-exist its

image, rather it comes into existence by the act of naming it. The image is raised to the dignity of a ‘thing’, and representation is revealed as a particularly persuasive conspiracy theory aimed at maintaining the fiction that ‘reality’ has an existence independent from our image of it. Through photography we come to appreciate the words of the pre-Socratic philosopher Parmenides (b. around 515 BC), ‘Thinking and Being are the same thing.’⁷

It is precisely because photography is both ‘thinking and Being’, i.e. an objectifying process and a material presence, that it is at one and the same time the fullest expression of the logic of representation and the very limit beyond which it cannot go. Photography does more than represent reality – it modifies our conception of the real as solid and intransient into a global network of self-replicating nodal points.

1.2 From production to information

It should hardly come as a surprise that photography can shed light on the deepest and most dramatic paradigm shift that befell Western society, because its invention coincides with the moment when said society moved from being invested in modifying the world (the problem of labour and machines) to being invested in information (the problem of thought and artificial intelligence).

Since its invention in the 19th century, the photographic image gave visual expression to the idea of ‘immaterial labour’ that is oriented not towards the modification of spatial-temporal reality (the world of work), but towards the production of information (data processing).⁸ It has done so by showing what happens to the real

⁷ See the excellent analysis of this fragment of Parmenides in: Gallop, David, ed. *Parmenides of Elea: Fragments: A Text and Translation*. Rev. ed. Phoenix Presocratics 1. Toronto: University of Toronto Press, 1991.

⁸ Flusser, Vilém. *Into Immaterial Culture*. Metaflux Publishing, 2015.

once it is placed inside a ‘black box’ – the photographic camera being its first instance and the prototype of all the black boxes that followed on from it.

Whether a camera or a computer, a black box is a device with an input and an output. If you feed data into a black box, it will be output as information.⁹ Significantly, the kind of information that the black box outputs depends not on the kind of data that it is being fed, but on the kind of invisible processing that is taking place inside it. In the case of the digital camera, for instance, it is an entirely arbitrary decision that the data that is placed within the camera is being output as a picture that has visual resemblance to the object in front of the lens. What the camera outputs is determined not by the object that is being photographed but by the authors of the code that instructs the algorithms how to process the input data. The same packet of data could be output not as an image file but as a sound, a text file, as a string of numbers, or it could be left unprocessed.¹⁰ It is therefore not essential for a photograph to exist as a visual image. In parenthesis, it is salutary to mention that black boxing is not unique to digital photography. Traditional analogue photographs are also the outcome of a process that computes the real and outputs it as information. The operations that take place inside the photographic darkroom are not in principle different from the operations of algorithms, and any deviation from the executable programme (changes to the chemistry, temperature or order of operations) results in an output with different

⁹ On the difference between data and information see Galloway, Alexander. ‘Are Some Things Unrepresentable?’ *Theory, Culture & Society* 28, no. 7–8 (2011): 85–102.

¹⁰ Rubinstein, Daniel, and Katrina Sluis. ‘The Digital Image in Photographic Culture: Algorithmic Photography and the Crisis of Representation’. In *The Photographic Image in Digital Culture*, edited by Martin Lister, 2nd edition, London: Routledge, 2013. PP. 22–40.

material qualities – a point that is completely lost on the believers in the so-called indexicality of photography.

Appearing as innocuous pictures on our smartphones and tablets, these photographic skeuomorphs are harbingers of a revolution in information technology in which the homey familiarity of photographs is used to algorithmically manipulate our own identities by exploiting our weaknesses and weaponising our selves against ourselves. Yet precisely because photography is a black box that produces an image, and therefore establishes connections between algorithms and human emotions, desires, thoughts and feelings, it is capable of shedding light on the manipulative power of computation.

The digital code that streams through the algorithmic structures and the computational assemblages that dominate contemporary life is for the most part invisible and inaccessible to our comprehension. Yet, in photography this entwined entity that effortlessly merges code and thought, feedback loops and emotions, data processing and action is presented as an image, and therefore it makes graspable the internal logic of a new layer of consciousness that corresponds to the societal shift from production to information.

As developments in computational intelligence, neuroscience and quantum physics begin to influence and communicate with each other, it becomes apparent that photography is a linchpin of many of these processes. It also emerges that a quest for a positive definition of photography that is cognizant with new perspectives on space and time as continuous, and with intelligence (artificial or otherwise) as fundamentally irrational, is urgently required to understand the cultural and political composition of contemporary life.

1.3 Fragmentation of Photography

In the broadest terms, this book explores the impact of the disintegration of the representational world view on photography. Succinctly put, it maps a transition from what can be called ‘traditional theories of photography’ to a new approach that diverts from the persistent focus on the rationality of the optical image and in so doing prepares a way of encountering photography not as a visual image but as a new way of inhabiting the immaterial materiality of the contemporary augmented reality¹¹. The critique of the traditional view of photography can be summarized in three points. First, the traditional view is *narrow*, in the sense that it engages with only a small number of actual photographic practices, often ignoring the uses of photography that fall outside of its conception as an aesthetic practice. Second, it is *optical*, in as much as it understands photography as an act of light writing, attributing to it signifying and aesthetic qualities, forgetting that many photographic operations, practices and events are inaccessible to human vision and do not exist as an image. And third, it is *parochial* because, while photographs and photographic techniques are widely used in everything from law enforcement and medical research to the study of antimatter and cosmic radiation,¹² traditional photographic theory does not for the most part relate to other disciplines in the sense that it does not contribute to them and does not learn from them.

¹¹ Golding, Johnny. ‘Fractal Philosophy, Trembling a Plane of Immanence and the Small Matter of Learning How to Listen: Attunement as the Task of Art’. In *Deleuze and Contemporary Art*, edited by Stephen Zepke and Simon O’Sullivan. Edinburgh: Edinburgh University Press, 2010.

¹² Doser, Michael. ‘The World Unseen: Photography as a Probe of Particulate Materiality’. *Philosophy of Photography* 7, no. 1–2 (2016): 139–54.

This book does not aspire to become the new definitive or normative code for the deciphering of images; its aim is not to replace the discourse of the Index with something more up to date. Rather, this book encourages the reader to think through images in a way that changes both images and thoughts. To think about images in ways that are not indebted to representational thinking requires paying close attention not only to the concerns of thought, but also to the manner, style and timbre of thought. At stake is the possibility of communication that does not rely on the normative values of correspondence and truth.

In the digital age, a photograph is no more a representation of the world than a URL is a representation of online content. The URL does not signify, nor can it be true or false; rather, what we need to know of a URL is whether it is *working* or *broken*. To say the same thing slightly differently, the Internet did not abolish the notion of truth, nor did it substitute it with a post-truth; instead, it has shown that the meaning of truth is interlinked with the technological paradigm of the age. Contemporary culture, its disciplines and discourses are replete with references to and uses of photography. Yet, despite the significance of photography for the construction of the fabric of social, political and scientific reality, photography studies for the most part tend to focus on the aesthetics of the image without reference to the expanded visual field that is continually mined by a broad range of disciplines. One of the aims of this book is to address this critical deficit by providing a snapshot of photography's engagement with the contemporary environment. Instead of the traditional approach of assuming that photography is determined ultimately by representation (sometimes also referred to as index, document, punctum or archive), this book suggests that photography is a rich interdisciplinary field that transcends the traditional boundaries of visual studies, aesthetics and media.

This book is raising the question of what becomes of photography when its presumed visuality is augmented by cultural artefacts produced by computation, randomness, automated processing and incompleteness. Because to see photography in terms of the traditions of visual culture, with all their ocular-centric, perspectival and representational baggage, is to ignore the fact that photography is not only an image, it is also a slice of the 'real' that the age of present-day technology is made of. The photograph is at one and the same time absolutely technological and visual. It is not only a visual medium but also the possibility of grasping the sensual 'now' of the information age.

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