

The Digital Image of Thought

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Abstract

This essay conceives a Deleuzian image of thought proper to the digital medium. I call this “the digital image of thought” (or “the digital image” for short). I begin with an introduction to Gilles Deleuze and Félix Guattari’s work on the image of thought and the related concept of the plane of immanence. Here, I emphasize that images of thought not only incarnate in entities recognized as either intelligent (e.g., a human mind) or as the products of intelligence (e.g., a work of art), but in material objects and media. The digital image, I argue, does not precede thought, but pertains to the latter category, as it is realized in the medium of digital data. Taking a speculative approach, I consider its implications were it to indeed inform human thought, arguing that in this capacity it would structure thought to meet the technical criteria of digital computability. From there, I present the digital image as a mechanism which would subsume thought under the needs of capital. Insofar as it yields digitizable (and thus monetizable) mental figures, I claim, it would figure minds as ideal environments for the creation of commodifiable concepts. I conclude by suggesting that, although the digital image is not an actually-existing precursor to thought, this possibility is an ideal of digital capitalism. For this reason, Deleuze and Guattari’s attempts to conceptualize a radically novel type of thought — one which would defy digital capture — are allied with contemporary political theorizations of the relationship between information technology and the psyche.

Introduction

This essay concerns Gilles Deleuze and Félix Guattari’s theory of the image of thought, which describes a non-conceptual and ineffable foundation for all activities that may be considered “thinking.” Defined broadly, images of thought predispose the thinking mind towards certain functions and outcomes and away from others. I propose the existence of an image of thought which predetermines the capacities, limitations, and possible structures of thought in accordance with the technical form of digitally computable data. This figure, which I call “the digital image of thought,” or, more simply, “the digital image,” envisions all digital operations as a kind of thinking whose boundaries mirror the representative limits of digital media. After describing its material attributes, I consider the implications of the digital image as an informant to human minds rather than digital systems. In this capacity, I argue, capital would subsume all activities constitutive of and associated with thinking. The

digital image is thus significant not only as a specific instantiation of the general image of thought, but as a theoretical support for a mode of capitalism increasingly reliant on the production and circulation of data.

1. On material images of thought

Deleuze developed the related theories of the image of thought and the plane of immanence throughout his career, including in texts co-authored with Guattari (Deleuze 1994; Deleuze & Guattari 1994; Deleuze 2008). The former signifies a nonconceptual precursor to thought: it does not manifest as ideas or opinions about the nature of thinking, but determines that which thought must presuppose in order to proceed (Deleuze & Guattari 1994: 37). In *What Is Philosophy?*, Deleuze and Guattari define it summarily as “the image thought gives itself of what it means to think, to make use of thought, to find one’s bearings in thought” (Deleuze & Guattari 1994: 37). The plane of immanence, meanwhile, functions as a milieu constituted and occupied by the mind’s conceptual outputs. Deleuze and Guattari liken it to “a desert that concepts populate without dividing up,” but warn that the plane must not be confused with its inhabitants (Deleuze & Guattari 1994: 36). Neither plane nor image present themselves positively in thought. They are distinguished from one another by their effects: whereas the image of thought preestablishes the range of thought’s positive and recognizable forms, the plane of immanence serves as thought’s container and connective tissue. One may imagine the latter as an imperceptible backdrop against which thought emerges in relief, while the former catalyzes certain types of thinking and obviates others. Both may take innumerable forms, each of which is prone to transfiguration and total dissolution.

Although images of thought defy description on their own terms, one may characterize them in regard to the kind of thinking they permit and deny. Deleuze and Guattari describe the Cartesian, Platonic, and Heideggerian images as, respectively, “a matter of a subjective understanding implicitly presupposed by the ‘I think’ as first concept”; “the virtual image of an already-thought that doubles every actual concept”; and “a pre-ontological understanding of Being” (Deleuze & Guattari 1994: 40). In his book *In Search of a New Image of Thought: Deleuze and Philosophical Expressionism*, Gregg Lambert examines works by such writers as Franz Kafka, Stéphane Mallarmé, and Herman Melville for images whose effects on thought reflect the aesthetic principles of literary expressionism (Lambert 2012: 36; 128; 116). According to Arkady Plotnitsky, images of thought realize themselves in scientific processes. His essay “The Image of Thought and the Sciences of the Brain” describes their influence on the disciplines of neuroscience, psychiatry, and psychology (Plotnitsky 2010). As Deleuze,

Guattari, Lambert, and Plotnitsky indicate, the particular effects of images give clues as to the general structures of thought they underlie.

Images of thought not only apply to thinking minds and their products, but also material substrates and processes. Thus, the filmmaker's film and the sculptor's clay bear images of thought distinct from the films and sculptures towards whose creation they are applied. In these instances, physical properties — which would include such features as the granularity of the film and the density of the clay — are mutually constitutive with images of thought. Lambert illustrates this principle by imagining the thinker as a visual artist. As he writes, the powers of both are given by the tools at their disposal, so that “the formal procedures available to the artist are as infinite as the materials themselves.” In practice, however, this range is always finite, as “each material component has a certain range of formal properties (density, color, texture, pliability, etc.) that determine its possibilities for expression” (Lambert 2012: 6). For example,

paper has certain possibilities that are absent in plaster but present in cloth; ink expresses certain attributes (the line, for instance) that metamorphose in pastel or water-colors, and even more in collage, mixed media, or metal. This heteronomy with which art is said to occupy itself — in order to draw from it its materials, its textures, its color, its figures — bears the conditions of the production of the modern artwork. (Lambert 2012: 6)

The digital image of thought functions in this manner. Its vision of thinking is not instantiated in the human mind or its products, but in digitally computable data considered as an empirical substance. By its predicates, the formal requirements of computability determine the limits of that which digital operations may express or “think.” My argument is that these features translate an image of thought proper to the digital *qua* digital. This image allows only thought which may be digitally computed, that is, as matter to be yielded and processed by computers, to the effect that the incomputable is rendered unthinkable. In the following section, I will elucidate the relationship between computability and the digital image.

2. Computability, discreteness, and digital ontology

Computable information comprises mathematically discrete variables, or integers which possess a finite sum of possible values (Kazlauskas 2021). Discrete variables are typically distinguished from continuous variables, or those which comprise an infinite sum of values. Across scholarly disciplines and contexts of practice, the discrete is generally identified with the digital, and the continuous with the analog (Maley 2011). Philosopher M. Beatrice Fazi

defines the digital as “a data technology that uses discrete (that is, discontinuous) values to represent, store and manage information” (Fazi 2018: 4). In an essay addressed to fellow programmers, Joe Celko explains that computational functions favor discrete data “because [they] can be made digital instantly.” Discreteness accounts for the precision associated with digital communication processes, whereas analog technologies more crudely approximate their functions and objects. “Look at an analog wall clock,” Celko writes. “The second hand is always moving, so the best you can do is to round the time to the nearest minute” (Celko 2019). Against the ambiguity of the continuous, discreteness endows computer programs with epistemic certainty and stability.

Fazi’s research addresses the role of the discrete in the aesthetics of computational processes (Fazi 2018b). She does not, however, attribute intrinsic properties to discreteness in and of itself, which according to her resists qualitative characterization (Fazi 2018b: 3). This elusiveness comports with a conceptual understanding of the discrete as quantitative abstraction. Defined as sequences of standardized intervals, binary units of computable data lack innate features proper to data as such. They cannot be perceived any more directly than one may perceive a quadratic equation, as both digital information and mathematical operations are rendered intelligible through symbols which do not constitute their general form. Although digital functions typically operate on the binary integers zero and one, these integers cannot be considered inherent to digitality, as it is possible to build digital systems that use other characters. What matters instead is the finitude that establishes zero and one as discontinuous components of a computer system. While it constitutes digitality, the property of discreteness contributes little towards an ontology unique to the digital.

If the digital cannot be understood ontologically, it may be possible to conceive it with respect to functionality. Alexander Galloway implies as much in his essay “Empty Frames,” where he writes that “digital representation always aspires toward an empty frame... because the digital means framing and nothing else” (Galloway 2018). This understanding of digital representation comports with Bernard Stiegler’s theory of grammatization, which refers to the tendency of technology to break continuous phenomena into discrete components. For Stiegler, information technology always grammatizes its subjects; as John Tinnell puts it, grammatization processes split each continuous flux “into a system of discrete elements” that may include “alphabetic characters, mechanical systems, [and] recombinant DNA sequences” (Tinnell 2015: 135). For Galloway and Stiegler, to digitize is to atomize and, in so doing, ineradicably alter the subject of digitization. To take up Galloway’s metaphor, data might be said to function like empty squares placed against continuous backgrounds, as in frames hung on a wall. The frames recede so that viewers are unaware of their presence and formal role; nevertheless, the framed sections of the wall are ontologically distinct from their surroundings and apprehended by viewers as such.

The possibility that digital media always and only convey ontologies which originate beyond them supports Galloway's account of the "ideal" digital picture as an "empty frame" (Galloway 2018). Observing the Platonic concept of the ideal, this statement indicates that the true form of the datum precedes its own investment with ontological import. In the same sense that the world of ideal forms is unavailable to rote perception, the ideal of the datum cannot be uncoupled from that which it communicates or "frames," at least from the perspective of human apprehensibility and intelligibility. For this reason, I construe the ontology of digital objects as "already-thought" or prior to the data-form. In the same sense that Platonic thought processes reconstruct ideal forms, digital functions represent (re-present) that which originates beyond them.

Affirming representation as the primary function of thought, the Platonic and digital images both take fidelity to their referents as the standard measure for the value of thinking. Dan McQuillan argues that this virtue characterizes the epistemic foundation of data science, an interdisciplinary field that includes "programming (typically in R or Python), data munging (parsing, scraping and formatting data), statistics, linear algebra, multivariate calculus, SQL (structured query language), machine learning and data visualisation," among other activities (McQuillan 2017: 255). Data science, he writes, presupposes "a hidden mathematical order that is ontologically superior to the one available to our everyday senses," à la Plato's world of forms (McQuillan 2017: 253). Locating truth as exterior to the subject, data science and Platonic thought both treat the vagaries of human interpretation as a barrier to their object. Per McQuillan's argument, data science reinforces the Platonic vision which unites truth with totality, objectivity, and goodness, and discounts the value of the subjective and particular.

3. Representativeness and difference in itself

Although they share an epistemological orientation, there is at least one important difference between Platonic and digital processes of representation. Whereas the former attempts to reconstruct transcendent realities, the latter corresponds with manifest phenomena. Because they apply to extant objects, digital functions cannot yield what Deleuze calls "difference in itself," a concept which envisions difference as absolute unequivocality. For Deleuze, true difference does not negate, distort, or depart from actually-existing entities or processes. It is *sui generis*, or unique in the literal sense of the word, evoking "forces in thought that are not the forces of recognition" (Deleuze 1994: xv). By means of introduction to the concept, Deleuze asks the reader to imagine something that is not "distinguished from something else" but which nonetheless "distinguishes itself" (Deleuze 1994: 28). This "unilateral

distinction” does not refer in any sense to any phenomenon beyond itself. One might say that it is auto-foundational or, in Deleuze’s words, that it “makes itself” (Deleuze 1994: 28).

The concept of difference in itself is implicated in Deleuze’s excavation of what he calls the “traditional” or “classic” image of thought. The traditional image prescribes a conventional mode of thought with which difference in itself is incommensurate (Deleuze 1994: xvi). It is not correct to say that the difference in itself deviates from the traditional image, as the notion of deviation implies the existence of a source from which to deviate. More precisely, difference in itself has no connection to that which it is not, whereas the traditional image only allows thought which is oriented to schemas distinct from itself. In the following passage, Deleuze suggests that the traditional image reinforces the mental tendency to recognize the known rather than yield the unknown:

we take as a model the process of recognition — in other words, a common sense or employment of all the faculties on a supposed same object; we designate error, nothing but error, as the enemy to be fought; and we suppose that the true concerns solutions — in other words, propositions capable of serving as answers (Deleuze 1994: xvi).

Those who presuppose the traditional image value veridicality over all other properties and aims of thought. By contrast, difference in itself cannot be brought into relation with any standard which may be used to ascertain its level of truth and/or representativeness. Whereas difference in itself is absolutely obscure, the traditional image only allows for the rehearsal of ideas and thought patterns with which the thinker is already familiar. The thinker cannot perceive, internalize, and inquire into the unknown, for in the moment that they confront it, they assimilate it (albeit automatically) into a mental matrix that cannot accommodate its alien dimensions. The digital image of thought, as a variant of the traditional image, establishes the basis for this matrix. To be digitized is to assume the standard form of symbols intended to transmit meaning rather than create it anew. Although digital functions may yield non-representative content (e.g., abstract art), computational outputs cannot supersede the predetermined structure of their encoding. The digital mandate to representation seals off all *terra incognita*.

The virtue of representational accuracy prevails in the world of digital tech, where innovation is conventionally understood as an expansion in the capacity to produce high-fidelity or “lossless” media. Historians Lisa Gitelman and Virginia Jackson trace this ideal to the nineteenth century, writing that those who observed industrial-era photographs were “struck by the apparent displacement of human agency in the production of life-like images” (Gitelman & Jackson 2013: 5). Whereas paintings enshrine their creators’ individual sensibilities, photographic mechanisms allowed artists to effectively disappear from their work. They add that this apparent absence of perspective — what they call “mechanical objectivity” — came

to be seen as a desirable trait in information technology (Gitelman & Jackson 2013: 5). Today, digital devices equip their users with the ability to realistically portray their surroundings and internal states — or, at least, to project the illusion of such realism. But even when digital media modify their subject matter, they affirm it as a necessary and ever-present point of reference. This is because all communication technologies presume an essential analogical likeness between themselves and their objects. By virtue of this likeness, data may assume the form of a galaxy, an operating system, or a folk song. But there is no common denominator by which difference in itself may be figured as pixels, code, waveforms, or any other extant structure, whether digital or analog.

Deleuze claims that the traditional image of thought forecloses the generative potential of philosophical research. Throughout his career, he pursued a novel theory of thought which would allow philosophy to take proceed without predicates or, as he put it, to pursue “the witch’s flight” (Deleuze & Guattari 1994: 41). This search took him beyond the domain of philosophy. In his book *Proust and Signs*, he identifies an alternative paradigm for thought in the literature of Marcel Proust, while *Difference and Repetition* recalls his efforts alongside Guattari towards the creation of a concept inspired by “the mathematical function of differentiation and the biological function of differentiation” (Deleuze 2004; Deleuze 1994: xvi). This endeavor resulted in the theory of difference in itself, which expresses «a storable relation between these two concepts which could not appear at the level of their respective objects» (Deleuze & Guattari 1994: 10). But not all creative and intellectual pursuits were so useful to their aims. In *What is Philosophy?*, they censure “computer science, marketing, design, and advertising” as “disciplines of communication” which cannot help but reduce concepts to platitudes ready-made for exchange in capitalist markets (Deleuze & Guattari 1994: 10). The digital image, which belongs to computer science, fashions thought to be natively available for economic circulation, as I will explore in the following section.

4. The digital reification of thought

The plane of immanence has no discernible end, at least from the perspective of the thinker. The aggregate of all possible ideas, experiences, and impressions does not appear to be finite, as if one risks exhausting their supply of new thoughts to think. In Deleuze and Guattari’s words, the horizon of the plane of immanence “recedes when the subject advances” so that a path for thought unfurls so long as one continues to think (Deleuze & Guattari 1994: 38). The goals of thought are likewise assumed to be infinite in both scope and attainability. Those who presuppose Deleuze’s traditional image assume that truth, its ulti-

mate ambition, extends without end. Because the digital image of thought idealizes representation, it heeds no limit to that which may be reconstructed in digital and mental formats. A self-replenishing array of digitizable figures lies at its vanishing point. Its effect on thinking may be likened to the infinite scroll, a web design technique which automates the renewal of content as one navigates across a website or application. The infinite scroll presents figures at an instantaneous pace that preempts the mental production of difference in itself. The thinker always remains within the remit of its offerings, which is to say that they cannot help but acknowledge its endless procession of prefabricated forms. The image's relative infinity is taken as absolute, as no lines of flight are available to carry the thinker away. Computers "think" or yield information in this manner, as their outputs are indelibly linked (however contingently) with inputs.

As it establishes the conditions for digital thinking, the digital image figures minds as economically productive forces. Thought that passes from the non-digital into the digital without any ontological loss has been reified, or structured so that it permits its own commodification (Lukács 1967: 2). Indeed, digital objects comprise a vast and rapidly expanding suite of goods and services. Data may or may not be "the new oil" (as was once famously claimed in *The Economist*), but the commodities they comprise are indispensable to contemporary capitalism ("The World's Most Valuable Resource Is No Longer Oil, but Data" 2017). In light of this development, political and economic theorists have addressed the central role of mental labor in today's circuits of production and exchange. Matteo Pasquinelli connects this research program with the origins of Italian workerism (*Operaismo*), a mid-century tradition of Marxist inquiry which examines labor conditions *in situ* ("The Renaissance of *Operaismo*," 2021). In his essay "Italian *Operaismo* and the Information Machine," Pasquinelli highlights an early publication from Romano Alquati, a seminal figure in the workerist movement. Alquati's "Composizione organica del capitale e forza-lavoro alla Olivetti," published in two parts, the first in 1962 and the second in 1963, identifies a link between the meaning of information — a primary concern for the then-burgeoning field of cybernetics — and the Marxist notion of living labor, which refers to the potential of workers to generate financial value (Pasquinelli 2011: 50; Wark 2014: 69). Noting that the essay was never translated into English, Pasquinelli reports that Alquati conducted his studies at a computer factory, where he observed that bureaucracy "descends into the bodies of the workers" to "record control information via the mediation of the circuits of cybernetic machinery." This project inspired Alquati's theory of "valorizing information ['informazione valorizzante']," which encompasses "the flow [of labor] running upstream and feeding the cybernetic circuits of the whole factory" (Pasquinelli 2011: 54). Valorization processes compact the mental labor of workers in computer systems, where it becomes economically valuable in the capacity of information.

Yann Moulier Boutang's theory of "cognitive capitalism" and Byung-Chul Han's theory of "psychopolitics," both explored in eponymous books, are similarly concerned with the mental origins of digital capital. Moulier Boutang's *Cognitive Capitalism* argues that traditional theories of financial value fail to account for the economic function of cognition, while Han's *Psychopolitics: Neoliberalism and New Technologies of Power* interrogates selfhood and subjectivity in the age of ubiquitous computing (Moulier Boutang 2011: 50; Han 2017: 61). Both texts present a vision of mental reification wherein thought gives itself to commodification via digital networks. As they claim, today's capitalism is as much a psychological phenomenon as it is economic and political. *Psychopolitics* depicts digital networks as forces which exploits the traditional image of thought's inclination to veridicality. As Han declares, the internet enacts a "violence of positivity" which encloses users in themselves (Han 2017: 32). As a "technology of domination," he argues, the psychic terror of the digital may only be defied by a "break with all certainty" which "calls to life a different constellation of Being" (Han 2017: 79).

Han and Moulier Boutang's views on the psychopolitical effects of computation are, for the most part, consistent with the effects of the digital image of thought. Neither, however, identifies a causal link between these effects and the material structure of data; both instead claim that digital capitalism forsakes the material in favor of the immaterial. Throughout *Cognitive Capitalism*, Moulier Boutang uses the term "intangible" as a general descriptor for digital goods. These "intangibles" include "audiovisual media, computers, the Internet, [and] game consoles," among other goods and services (Moulier Boutang 2011: 56-57). Han likewise frames digital commodity production as an affair of the mind rather than the body. Here, he argues that the psychic realm has become the eminent site of political contestation:

Now, immaterial and non-physical forms of production are what determine the course of capitalism. What gets produced are not material objects, but immaterial ones – for instance, information and programs. The body no longer represents a central force of production... now, productivity is not to be enhanced by overcoming physical resistance so much as by optimizing psychic or mental processes. (Han 2017: 25)

Although the theory of psychopolitics usefully illuminates the psychic toll of digital capitalism, Han mistakenly implies that the subsumption of the psychic/mental outmodes the subsumption of the material/physical. Indeed, as observed earlier in the paper, data *qua* data comprise abstractions with no observable material properties, so that the digital realm is easily construed as "immaterial." But digital matter is entirely and irreducibly physical. One need only look to the environmental costs of computing as evidence for the interfusion — to the point of undifferentiability — of the (allegedly) immaterial and the material (Siddik, Shehabi & Marston 2021). It is not so much that data are contiguous with the physical world,

but that they are composed of it, reducing to discrete symbols inscribed in hard substrates. The interface of hardware and discrete encoding determines the empirical features and technical capacities of computation. From this juncture, information is produced, processed, and transmitted with the speed and precision that has come to define contemporary communication technology.

These features have made digital information valuable in every conceivable sense. Digital capitalism is at least as dependent on the material world as the economic systems that pre-dates it. When data are able to move quickly, accumulate without measurable limit, and take on seemingly endless guises, they are ideally equipped to contribute to an economic system which presupposes limitless expansibility. Their speed and modularity, which accounts for their economic value, is an effect of their immutable structure. In computer systems, this structure functions as a template for information processing. As an image of thought, it delimits mental activities in compliance with the technical requirements of computability.

The relationship between the rigidity of data and the malleability of digital media may appear as a paradox. Yet the conceivable breadth of digital outputs does not exceed that of pen, paper, and other analog means of production. What distinguishes the digital from the analog is not the former's range of expression, but the extent to which it is taken as a faithful bearer of the real. Computers are granted the capacity for verisimilitude by the structural inflexibility of the datum. As a precursor to human thought, the digital image would endow minds with the ability to function as virtually inexhaustible wellsprings of concepts. The currency of these conceptual outputs accords with the degree to which they accurately capture the external world, and their valorization transforms thinking minds into workers *par excellence*.

Conclusion

The above has not and will not come to pass in practice. As stated in the introduction, I am submitting this theory speculatively: the digital image models the internal mechanisms of digital systems, not the human *cogito*, where it would circumvent creativity and agency. Popular rhetorics of technology support this cause, however, in employing such terms as “intelligent,” “thinking,” and “learning” to describe computer functions. To characterize machines as “intelligent” is to conceal those aspects of mentality which cannot be translated into economic value. My presentation of the digital image of thought mobilizes Deleuze and Guattari against this campaign of obfuscation.

In his influential paper “Computing Machinery and Intelligence,” Alan Turing declares that the question of whether machines can think “too meaningless to deserve discussion.” But he

expected that public discourse would change by the century's end, so that one might come to speak of thinking machines "without expecting to be contradicted" (Turing 1950). The fact that this prediction has proven true does not render the figure of the "thinking machine" any less absurd. The digital image of thought emphasizes the material division between organic and digital systems as one among many possible affronts to such a notion. This challenge is philosophical in nature, but advanced for social and political purposes.

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