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The Production of Space and the Archive of Everyday Life

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INTRODUCTION

“The cloud is a romantic surface which misleads by metaphors.”¹ It is a material and spatial reality — vast, cavernous, anonymous looking warehouses filled with seemingly endless aisles of powder coated aluminium cabinets standing to attention, flickering led lights, a cardiograph of data lives — click-like-tweet-porn-share-send-spam-delete — all serenaded by the deafening soundtrack of energy-hungry cooling fans. The cloud is human exclusion zones where robots respond to our buy-now-one-click demands, moving objects in the dark, the like of which we never knew we wanted across a military grade infrastructure — orders “fulfilled” by the logistical precariat of digital capitalism.² The cloud is Cobalt uploaded from the earth by the hands of child miners in the not-so-Democratic Republic of Congo, to facilitate the technologies of Tesla, Apple, Microsoft, Google and Dell who are currently being sued by International Rights Advocates on behalf of fourteen Congolese families.³ The cloud is dirty. The cloud is material. The cloud produces space. This is an architectural problem.

Fig 1. Cobalt mine in Kawama, DRC / Amazon Fulfilment Centre, location unknown

What then are the kinds of spaces being produced by the shifts in the modes of production facilitated by the technologies of planetary computation?⁴ How, as a profession, might we understand these spaces? Or, following Henri Lefebvre: Who produces this space? What is it that is being produced? How is it being produced? Why is it being produced? For whom is it being produced? To what extent do these spaces contribute to our our ability to participate in the democratic production of space? What Lefebvre, called The Right to the City⁵. The following paper will focus on the question: How, as architects, might we begin to understand these spaces? I propose that a useful framework is Lefebvre’s triadic of spatial production. It is useful because, as he writes, “shift[s] from one mode [of production] to another must entail the production of a new space.”⁶ These shifts produce new modes of being in the world because new modes of production create changes in the phenomenological, epistemological,
material and semiotic. For example, the advent of the railway produced these kinds of shifts by creating the ability to travel at previously unimaginable speeds, through inaccessible areas to places one could have only imagined which radically changed the traveler’s perception. Traditional travel space, was destroyed, as localities, previously inaccessible, or accessible only by means of cart and horse, collide and “move into each other’s vicinity,” losing “their old sense of local identity, which used to be determined by the spaces between them.” This spatial collision radically changed the subject’s perception of space-time. Over the past decade the modes of production have become increasingly embedded into everyday life. Plugged into our multi-scalar digital prosthetics — the city, a lamp post, a watch, a phone, an app, a tweet — we are no longer simply users of the products we produce or purchase but have become the products, simultaneously consumer, product and producer yet — for the purposes of the real-end-users accumulation of surplus value — hidden conveniently from the knowledge that we are any of those things. What more, we are the prosthesis — the we-infrastructure of computational capitalism, where ‘we’ includes human, other-than-human — organic and computational. Everything in everyday life has become part of the mode of production. The technologies that are governing these transformations are increasingly being deployed in the urban realm. I am not saying that the city is the material manifestation of the cloud, it is not, architecture and people, animals, bins, smart phones, data centres, brains, hormones, testosterone are all the cloud. The cloud is materially multi-scalar — bricks and mortar, skin and bones, fans and servers, neural impulses and frontal cortex’s. Nor am I saying, like the smart city ideologies of the techno-fantasists, that the urban realm is merely the stage set upon which the cloud performs. The cloud is a complex material entanglement that moves across multiple scales from the microscopic to the mega-city. The material manifestations of the cloud, like data centers are nodes in an entangled network that cannot be thought apart from the modes of being that they produce. This requires us to think beyond the question — dominant in much architectural discourse — of what it is and ask what does it do? Concerning the cloud these two questions cannot be separated, to ask one is immediately to ask the other. This is the reason why I propose that Lefebvre’s triadic is a useful conceptual framework which architects can use to understand the processes at play in the production of space within the archive of everyday life.. To make the case for the ongoing usefulness of the triadic I will begin by briefly introducing Lefebvre’s three-dimensional spatiology. I will then focus on two processes within the triadic that will help foreground the complex entanglements between architecture, ways of being in the world and the production of space. These two areas are perceived and conceived space. In The Production of Space Lefebvre does not explore in detail how it is that the shifts in the modes of production actually change modes of perception and conception. Someone who does do this is philosopher of technology Bernard Stiegler. I will therefore expand on the role of perception and conception in spatial production by reading them through Stiegler’s concepts of tertiary retention and tertiary pretention which I contend are central to understanding the spatial nature of shifts in modes of being created by new modes of production.

THE TRIADIC

“To speak of ‘producing space’ sounds bizarre, so great is the sway still held by the idea that empty space is prior to whatever ends up filling it.” It sounds bizarre because beginning with Plato, philosophy has forgotten space. When considered as detached from the material reality of its production space becomes little more than an empty abstraction. Lefebvre’s understanding of space is non-Euclidean: Space is not an object; it is in fact neither subject or object; nor is it a container.
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Space does not pre-exist that which populates it. The production of space is a complex three-dimensional dialectically interconnected processes that oscillates between the epistemological, phenomenological, materialist and, semiotic (Figure 2). Moving away from the traditional Hegelian-Marxist understanding of the dialectic, Lefebvre introduces a three-dimensional dialectic17 that, unlike Marx, doesn’t end in a synthesis but rather thinks three moments as distinct but at the same time interconnected without reconciling them in a synthesis.18 Rooted in his unique theory of language that he develops in Le Langage et la Société (1966)19, he articulates his spatiology in three different ways: Semiotic, phenomenological, and materialist. Firstly, space is produced through the process’ of spatial practice, representations of space, and, spaces of representation. Secondly, space is produced through the process’ of the perceived, conceived, and, lived.20 Both of these triadics map onto the other and can be understood as follows: Spatial practice/perceived space is the network of infrastructures such as communication, or networks of places such as the house the workplace, or networks of finance, production and exchange. These are spatial practiced syntagmatic networks, determined by a system of rules informing how we ‘practice’ everyday life. Representations of space/conceived space can be understood as conceptualized space, the space of scientists, planners, architects, geographers, image makers, cartographers, and space articulated through speech in both a descriptive and performative way — the meanings of spatial representations are not stable and can shift.21 Representational space/lived space is space that we passively experience as we go about our lives, and how space is mediated to us as an act of perception and imagination through signifying processes of non-verbal symbols and signs. Each process is of equal value, “[n]on of these dimensions can be posited as the absolute origin, as ‘thesis,’ and non is privileged. That Lefebvre’s triadic connects the epistemological, phenomenological, materialist and, semiotic processes of spatial production makes it a useful conceptual framework for understanding the entangled nature of data infrastructures and the urban, what Stiegler, following Simondon, calls a techno-geographical milieu whereby nature becomes embedded in the functioning of a machine to to such an extent that it becomes part of the technical system.22

Fig 2. Lefebvre’s three-dimensional triadic

THE DATA CENTER OF EVERYDAY LIFE

An important node in the data infrastructure assemblage, and an obvious (an distracting) object of study for architects is the data center. Cavernous undecorated sheds, anonymous monuments to the places where internet cables break the surface of the earth, ferrying wants, needs and desires as small
packets of data in the form of light to be processed by endless aisles of servers. This new architectural form has been well documented (Varnelis 2015, White 2015, Hogan 2015, Koolhaas 2016, 2019, Pestilini 2019, Lally 2019). While these are useful studies they mostly focus on investigating the architectural typology of the data center but rarely ask what new modes of being and new kinds of space do these infrastructural nodes facilitate as part of the techo-geographic milieu. The data center as the physical storage space and location of real-time analysis of archivable data — which is everything — and the process of archiving as actualized in the present — you purchased this so we thought you’d like this — are not separate but manifest as a mutual condition and must be thought as such.23 The process of archivization is one that “produces as much as it records the event.”24 The data center as an infrastructure of spatial practice cannot be thought apart form the new modes of being that it facilitates. In the following section, reading Lefebvre through Stiegler, I will focus on two of those modes of being, perception and conception.

The bio-technical human

To understand the relationship between modes of production and modes of being is to understand that the human does not just invent technology but the human is an invention of technology. 25 We do not stand apart from technology but are in a co-originary relationship with it. Technology is not simply a means to an end, it is the very condition of culture.26 The evolution of the technological prosthesis, defines the human which means that the only way life can continue is “by means other than life.”27 It is important here to note that the co-originary status of the biological and the technical is not merely a process that takes place against the backdrop of an abstract transcendental concept of space-time. The technological is constitutive of space-time. Technology produces space-time. But, according to Stiegler, following Virilio,28 there is a dimension that must be thought as prior to space-time which is speed.29 Life as constituted by both the biological and technical is primarily about the conquest of mobility30 be that the desire for prehistoric humans to expand the boundaries of their territory or the high-speed dark fibre cables now facilitating financial transactions at speeds faster than human perception.31 Against a backdrop of space-time as transcendental a chasm has been created between tēkhnē and episteme. When this chasm is bridged and speed is understood as prior to space-time — something that Lefebvre does not consider — we can see an important new dynamic at play within the triadic. By inserting the concept of speed into the triadic as prior to space-time we are reminded that as modes of production produce new kinds of speed the distance between lived space, the perception of
space and the conception of space is annihilated. There is no longer a distinction between here and there. To understand the consequences of increased speeds for the processes of perception and conception qua spatial production is to recognize that the perception and conception of space — which is exteriorised memory — is not just a biological process but is spatial and technical. It is a material process imbedded in the lived space of everyday life. A process that now operates at the speed of light.

The spatialization of memory

Perception and conception are constitutive of spatiality. This process, both biological and technical produces space which in turn produces modes of perception in the form of retentions and protentions via what Stiegler calls primary, secondary and tertiary retention. Primary retention can be understood as the perception of what is happening immediately around us. For example, as I write these words I am listening to some music. To make sense of the music I must be able to retain and remember the note that I am immediately hearing as well as the note that precedes it. Secondary retention is the recalling of past memory. For example, the memory of a melody that I was listening to yesterday. However, something different happens when the melody that I am listening to is recorded and replayed on a storage device — this Stiegler calls tertiary retention. Tertiary retention is memory that is external to but constitutive of human memory. Familiar examples of these would be the iCal app on my iPhone, a Facebook timeline or a Twitter feed. This third kind of memory that is exterior to the human body, and as such is spatial, aids the recall of specific memories. What is important here is that tertiary retention is constitutive of primary retention. Using the example of a turntable Stiegler writes: “You only have to listen twice to the same melody to see that between the two auditions, consciousness (the ear, here) never hears the same thing … because the ear of the second audition has been affected by the first.” That I can perceive the same melody twice (or look repeatedly at the same image on Instagram), but at each audition experience something different means that my perception of the melody (or the image) is not constituted by primary retention but is in fact constituted by tertiary retention. What this means is significant for our consideration of spatial production for imagination is placed at the very centre of perception and conception. That tertiary retention devices are now digital and by definition spatial is of great significance for it opens them to manipulation. The speed at which digital tertiary retention devices operate, the access they have to our immediate experiences — where we go, what we buy, what we think, what we like — and, their ability to record, remember and process events in real-time, radically changes our modes of being in everyday life. The selection process operating between secondary retentions and tertiary retentions is short-circuited. Digital technologies operate on a global collective scale with the ability to create and reproduce information in real-time. “Spatiotemporal distance between those recalling and what is recalled is collapsed, and a memory is iteratively reterritorialized in the moments of its recollection, over-determining it with the metadata of capture, storage and retrieval.” The implications for the production of space are clear: Everyday life has become over-coded with data, and as such new layers of meaning are applied to space. “As the informational networks and feedback loops connecting us and our devices proliferate and deepen, we can no longer afford the illusion that consciousness alone steers our ships.” Digital tertiary retention of this kind and scale is a global spacialization of memory, “a quasi-materialization of … consciousness.” This is precisely the business strategy being employed by Google / Alphabet — as well as others like CISCO and IBM (figure 3) — who in partnership with city authorities are seeking to deploy various data gathering technologies in the urban realm through their Sidewalk Labs project. In 2016 Sidewalk Labs CEO Dan Doctoroff, speaking about the now-
cancelled Sidewalk Labs project in Toronto articulated the companies purpose as being about the replication of “the digital experience in physical space” through various data gathering AI, machine learning and sensing technologies “including cameras and location data as well as other kinds of specialized sensors” which will all be funded “through a very novel advertising model….We can actually then target ads to people in proximity, and then obviously over time track them through things like beacons and location services as well as their browsing activity.” What Doctoroff is describing is not a model unique to the Sidewalk Lab’s project. Facilitated by personal mobile technologies this is now the business model of everyday life.

**The archive of everyday life**

The previously unimaginable changes in speed created by planetary computation, the new technologies of real-time digital tertiary retention — which are also technologies of tertiary imagination qua protention — have caused a disruption to take place in the very structure of everyday life (which is itself now the mode of production) which has significant implications for spatial production. This is the archive of everyday life. Light-speed technologies and their real-time capture, storage, analysis and re-presentation instantly archives and processes the everyday at such a speed that in a very real way “[t]he present no longer has time to take place.” The present is always-already archived, an “algorithmicized present.” There is no longer a present-now of everyday life only light-speed archival circuits that at the moment of archiving become, via algorithmic selection, possible futures. Even those futures that do not come to pass, are, for the archive, as important as futures that are actualised. These are fed back into the archive, rendered as useful data for the creation of more protentions — everyday life is no longer separate from the factory, it is the factory, the “past gnawing into the future.” The materiality of the cloud as the temporal storage space and real-time analysis of archivable data — which is everything — and the process of archiving as actualized in the present are not separate but manifest as a mutual condition. This mutuality is increasingly becoming co-constitutive whereby the material manifestation of the cloud adjusts itself according to the data that it gathers in the actual moment of its adjusting. This is the reality of the light-speed archive. My iPhone gathers real-time information while simultaneously archiving, processing and representing that information to me. This is the automatic-everyday where we are sold the myth that our digital prostheses are opening out a world of possibilities when in fact, according to a specific and ever changing grid of algorithmic governance, they are closing it down. Architecture has become the veil of
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secretory that digital capitalism needs in order to survive and the currency of this new city is attention.51
What then does it mean to have a right to this kind of city?52 I propose that Lefebvre’s triadic of spatial
production is a useful conceptual tool for architects to begin to explore answers to this question.

Shifts in the modes of production produce new ways of being which produce new kinds of space. The
shift from one mode of production to another is not simply a historical event it is an ontological event
that creates phenomenological, epistemological and semiotic revolutions. That Lefebvre’s triadic
operates across these three philosophical registers means that it remains a useful conceptual
framework for understanding spatial production in our age of planetary computation.

REFERENCES

1 Wolfgang Ernst, “TECHNICAL STORAGE AND TECHNO-ARCHIVE.” https://www.musikundmedien.hu-
berlin.de/de/medienwissenschaft/medientheorien/ernst-in-english/SCRIPTS/PDF/storage.pdf (accessed Nov ,
2020).
3 Planetary computation is a phrase that was first used in the 1970’s by Felix Guattari (Guattari Félix, Lines of
Flights. For Another World of Possibilities (London: Bloomsbury, 2016) p. 191.) where he writes “the computer is
effectively on the point of being integrated into a complex of enunciation in which it will become impossible to
’separate out’ human intervention and machinic creativity.” I have coupled this with Henri Lefebvre’s phrase
“planetary urbanization” which he used in The Urban Revolution (Lefebvre Henri, The Urban Revolution
(Minneapolis: University of Minnesota Press, 2003)) to describe the process of urbanization that overcomes the
binary difference between the ‘city’ and the ‘urban’. The city being a historical bounded entity contrasted with the
urban and the homogenising process of urbanisation, which like a mesh thrown over space (the city and beyond)
dissolves the bounded set of the city elevating exchange value over use value thus creating abstract space.

Planetary computation is also a phrase recently adopted by Benjamin Bratton (Bratton, Benjamin H. 2005. The
Stack. Massachusetts: MIT) to describe the distortion of Westphalian territories and geographies by process of
computation that operate across multiple scales or layers that he calls the stack. My use of the term planetary
computation encompasses all of these meanings.

4 The Right to the City, is a theoretically complex and provocative formulation. Its recent popularity has been
helped by interpretations of those like David Harvey and its use by activist groups like the Right to the City
Alliance. Yet, The Right to the City is like many of Lefebvre’s texts, elusive — it opens out a wide and long vista
into his vast corpus of over sixty other texts. It is telling that Lefebvre — an important post-Marxist thinker, at a
time of political uncertainty — would mark the centennial of Capital by proposing an urban, geospatial,
materialization of Marx. Marxist thinking had never given the urban much significance. The Right to the City is
Lefebvre taking Marx at his word that “the world’s becoming philosophical is at the same time philosophy’s
becoming worldly, that its realization is at the same time its loss.” For Lefebvre the right to the city is nothing less
than a revolutionary conception of citizenship performed through the production of heterogeneous differential
spaces that rupture the spatial coding of the homogenous abstract spaces of capital — the right to the city is the
production of space that counters abstract space.

46.
6 For an interesting overview of how digital technologies change modes of being see Stephane Vial, Being and
the Screen, How the digital Changes Perception (Massachusetts: MIT, 2019).
9 See N. Katherine Hayles, Unthought. The Power of the Cognitive Nonconscious (Chicago: The Chicago
University Press).
10 The Production Of Space by Henri Lefebvre, 15.

13 The Production Of Space by Henri Lefebvre, 12.

14 Ibid., 73.

15 Ibid., 92.

16 Ibid., 94.


18 Ibid., 30.

19 Lefebvre’s three dimensional dialectic is based on Marx (social practice), Hegel (knowledge and language) and Nietzsche (creative action). His first application of the three-dimensional dialectic is in his theory of language as laid out in Le Langage et la Société (1966). In short, the triadic of material/social practice, knowledge/language and the creative act are framed as the syntagmatic, paradigmatic and the symbolic (figure 2). The syntagmatic deals with the “formal rules ... that determine the relationship between signs, their possible combinations, sentence structure and syntax.” The paradigmatic dimension refers to a system of meanings where “the possibility of substituting one term for another that is equivalent to the first from one point of view and different from it when viewed from another angle.” The symbolic dimension refers to “images, emotions, affectivity and connotations” and as such relates to the ambiguous and complex nature of everyday lived language. The triadic of syntagmatic, paradigmatic and the symbolic form the basis of what Lefebvre in The Production of Space calls a “spatial code” — a linguistic, textual and semiotic code by which space can be read and interpreted. However, space that is only this is reduced to “an epistemological (mental) space — the space of discourse and of the Cartesian cogito.” Therefore, a spatial code does not just deal with the textual or spoken word it also includes “non-verbal signs (music, sounds, evocations, architectural constructions)” and is also “a means of living in ... space, of understanding it, and of producing it.” The syntagmatic, paradigmatic and the symbolic cannot be understood apart from Lefebvre’s Nietzschean inspired linguistic theory: To understand language correctly one must begin from the spoken word, lived and breathed, and not from a system or model. Thus, the syntagmatic cannot be separated from the material reality of social practice. The paradigmatic cannot be separated from knowledge, language and the written word and their associated systems of meanings, codes and metaphors and the ideologies and power structures by which they are conceived. The symbolic dimension cannot be separated from the creative act of the production of images, symbols and signs. See Schmid, “Henri Lefebvre’s Theory of the Production of Space, 36-37.

20 The Production Of Space by Henri Lefebvre, 38-39.

21 Schmid, “Henri Lefebvre’s Theory of the Production of Space, 36-37.


28 A distinction should be made between Stiegler’s and Virilio’s understanding of speed. “For where Virilio maintains a strong, albeit residual, attachment to the authenticity of situated bodily presence and to the phenomenological conception of the ‘body proper’ (which he takes from Merleau-Ponty), Stiegler, of course, has no faith at all in the purity of ‘presence’ since he has already shown the way in which any coming to presence always passes through the altenity of technics.” Ian James, The New French Philosophy (Cambridge: Polity, 2012), 71-72.


31 N. Katherine Hayles, Unthought. The Power of the Cognitive Nonconscious, 142-177.
What I am saying here is different to Harvey’s argument that capitalism compresses time-space see Harvey (1990). What I am saying is that the speeds that capitalism can now harness drastically change, for example, the time between the perception, representation and say conception of a space. Google Maps or Instagram being possible examples.


Ibid, 37.


Ibid, 60.

Technics and Time: 3. Cinematic Time and the Question of Malaise by Bernard Stiegler, 73.


N. Katherine Hayles, Unthought. The Power of the Cognitive Nonconscious, 141.

Technics and Time: 3. Cinematic Time and the Question of Malaise by Bernard Stiegler, 73.


Wolfgang Ernst. The Contemporary Condition, The Delayed Present: Media-Induces Tempor(e)alities & Techno-traumatic Irritations of “the Contemporary” (Berlin: Stermburg Press, 2017), 36.

Ibid., 26.


Henri Lefebvre understood everyday life to be both the repetition of daily life and also the activities that take place within daily life. For Plato, the everyday was vulgar — truth was sought elsewhere. For Marx, the focus of the everyday was work, labour and production. For Lefebvre, philosophy had forgotten everyday life, Marx did not reach the full dimensions of the everyday — beyond the factory in the ordinary and mundane rhythms of the lived was the everyday, for Lefebvre, philosophy begins here. See Henri Lefebvre “Toward a Leftist Cultural Politics: Remarks Occasioned by the Centenary of Marx’s Death,” in Marxism and the Interpretation of Culture, ed. Cary Nelson and Lawrence Grossberg (London: Macmillan Education Ltd, 1988) 78.


The right to city is the right to the production of space and as such in its performance as a revolutionary conception of citizenship must involve the reconfiguring of phenomenological, epistemological, semiotic and material modes of being in the world. As performative, the right to the city — which is the right to space and the right to difference — is both action and gesture which speak as action and claim to modes of being in the world. While it is no less than the material right that a certain group might exercise to a geographic locale, a neighbourhood, a building or a right to the basic necessities such as water, food, shelter, education, it is also much more. As a semiotic right it is the right to the production of meanings in and about space — the right to the signifier. As an epistemological right it is the right to the production of knowledge — the right to discursive strategies where repressed and silenced ways of being known or knowing are contested. As a phenomenological right it is the right to perceptual regimes enacted as the right to be perceived in space as bodies or ways of being that might otherwise be made to be invisible. For example, a right currently being challenged by the infrastructures of algorithmic governance in the form of predictive policing software. Or the right to the production of retentions performed as the right of the forgotten or oppressed to remember or be remembered. It is the right to the production of pretentions — the right to imagine; to participate in the actualisation of possible futures; to have ones voice heard, recognised and validated.