"Making sense of power": Repurposing Gilbert Simondon's philosophy of individuation for a mechanist approach to capitalism (by way of François Laruelle)

Laura Lotti – University of New South Wales

lauralotti@mac.com

Gilbert Simondon's philosophy offers fruitful resources to approach the problem of the relation between man and digital networked technology. However the validity of his method is significantly undermined by the seeming lack of a rigorous critique of political economy and by the strong normativity at the core of his idea of technical invention, which makes it difficult to adapt Simondon's thought to the all-encompassing capture of cybercapitalism. In order to overcome this impasse I propose to look at capitalism as an aspect of the individuation of the ensemble constituted by man and nature, made possible by specific techno-cultural interfaces – precisely, the technological evolution of the medium of money. Key to this is the relation between power relations and signification, or sense – that is, the way that a certain kind of making sense of the world allows in turn for certain formations of power, and vice versa. Further, by retaining the primacy that Simondon attributes to the technical as productive of epistemological and ontological ground, I propose that the normativity that is generally criticised in Simondon's philosophy can be productively reworked as a theory of value, precisely by availing of his concept of technical invention. The technical effort that allows for the coming to existence of invention allows to uncover gaps of resistance to the smooth extraction of coded information operated by cognitive capitalism, and to highlight occasions of reversibility of the sense of power, as the recent invention of electronic cash demonstrates.

Gilbert Simondon's philosophy has remained relatively unknown to the Anglophone academic world until recently. As Muriel Combes explains, "Simondon was greeted as a "thinker of technics" rather than as a philosopher whose ambitions lay in an in-depth renewal of ontology" (Combes, 2013, p. xxi). Although his writings have provided inspiration to a wealth of renowned French authors since the mid-twentieth century (e.g. Gilles Deleuze, François Laruelle, Bernard Stiegler), according to Brian Massumi (2009), the constructivist models of the Nineties were still too concerned with language and rhetoric to appreciate Simondon's ideas. Today, the times are ripe for a Simondonian revival. The 2010 "flash crash" caused by algorithmic failure; the beginning of a new geological era, the Anthropocene, determined by the increased (and mostly negative) impact of human activity on Planet Earth since the automation of production; the NSA scandal as a confirmation of the lack of security and ethics in digital networked communication, are just some of the contemporary global events to reopen the question of the relation between human and technological systems or to raise, as Massumi puts it "the issue of the immanence of the non-human to all of the vicissitudes of the human" (2009, p. 38) – this is the question at the heart of Simondon's thought. In this sense, amidst the (at times sensationalistic) claims for post-, trans-, in-humanism that animate the current philosophical debate, Simondon's philosophy offers fruitful resources to speculate upon the natural, technical, and cultural processes that constitute the human, by providing the means to account for "a humanism without the human to be built on the ruins of anthropology" (Combes, 2013, p. 50).

However, the strong normativity at the core of Simondon's philosophy has been criticised for not resolving the problem of the exploitation of cognitive labour under contemporary capitalism. In particular, one of the main critiques of Simondon's idea of technical invention (1989a, 2009a) is the seeming lack of rigorous engagement with the socio-economic conditions that allow for the development of a technological lineage (During, 2006; Chateau in Simondon, 2005b). Moreover, his central concept of transindividuation – synthesised by Muriel Combes as a relation of relations that is both internal to the individual

(defining its psyche) and exterior to the individual (defining the collective) (2013, p. 26) – is problematic for it seems to justify the rhetoric of flow and pre-programmed interaction supported by second-order cybernetics upon which contemporary forms of control thrive. For instance, referring to the domain of programming, "where certain forms of hacking and open-source may be viewed as Simondonian 'transindividual collectives'", Alberto Toscano observes that:

> contemporary work on "cognitive capitalism" … cannot but cast some doubt on the dichotomy of work and invention as the all-purpose key to the emergence of a non-alienated technical culture. Is it really enough that the genesis and existence of the technical object not be sundered for us to speak of nonalienation, and of interactions that would communicate and actualize our preindividual "human nature" (Toscano 2007a, pp. 204–205).

In order to overcome the "wall" Simondon's philosophy seems to leave us at,[1] I propose not to adopt a political economic approach *to* Simondon's thought, but to step into his philosophy and look at capitalism itself *as* an aspect of the individuation of the ensemble constituted by man and nature. Key to this is the relation between power relations and signification, or sense – that is, the way that a certain kind of making sense of the world, afforded by specific techno-cultural interfaces, allows in turn for certain formations of power, and vice versa – which is made possible by a re-examination of the formation of value in Simondonian perspective. By retaining the primacy that Simondon attributes to the technical as productive of epistemological and ontological ground, I propose that the techno-cultural normativity that is generally criticised in Simondon's philosophy can be productively reworked as a theory of value, precisely by availing of his concepts of invention and transindividual technical relation.

In order to illustrate my point, I discuss the establishment of capitalist values via an analysis of one of the most basic and perhaps mundane technologies we avail of daily: money. I first reframe Simondon's philosophy of individuation and technics as a process of "sense making", by coupling Simondon's formal approach to individuation with François Laruelle's early writings on political materialism. Secondly, I discuss the "sense" of capitalism as the structuration of a specific axiomatic of signification made possible by the development of fiat currency within Simondon's schema of the birth of technology (Simondon, 2014). Ultimately, I consider Simondon's idea of invention in terms of Laruellian minor hermeneutics to analyse how value is produced in the contemporary socio-economy. My wager is that Simondon's and Laruelle's formal treatment of individuation and power, respectively, allows to go "beyond the power principle" (Laruelle, 1978), bypassing the grand onto-theo-political truths upon which contemporary capitalism thrives, by demonstrating that every individual already contains the potential for both *pouvoir* and *puissance*, thus realising Simondon's (and perhaps Norbert Wiener's) project of a "universal cybernetics".

Individuation and technics

Simondon is best known for his philosophy of technics, which postulates that technical objects evolve progressively from element to individual to network and possess an increasing level of autonomy, culminating in the establishment of a technical mentality with the introduction of post-industrial technical objects (Simondon, 2009a, 2014). However, to fully grasp its relevance for media and communication studies, Simondon's theory can only be understood within the framework of his philosophy of individuation. Here I will briefly sketch out Simondon's theory of individuation before clarifying the role that technics and technology play in his schema, thus setting the groundwork for a reframing of Simondon's philosophy in political economic terms, with the support of François Laruelle's early political materialism.

The novelty of Simondon's philosophy lies in his formal approach to the problem of individuation engendering, as Muriel Combes aptly puts it "a reformation of our understanding" (2013, p. 1). By

---

[1] Here I paraphrase Elie During's article titled in French "Simondon Au Pied Du Mur" (During, 2006), which precisely deals with the problems posed by the concept of technical invention. All translations from the French are mine throughout the paper, unless stated otherwise in the bibliography.

substituting the idea of an ontology of being with an ontogenesis of becoming, Simondon reverses the view by which the individual has always been studied, not stopping his inquiry at the principle of individuation, which presupposes matter and form as a priori givens, but traversing it, thus "*grasp[ing] the individuated being from the viewpoint of individuation, and individuation from the viewpoint of preindividual being*, each operating at many different orders of magnitude" (Simondon, 1992, p. 311). Individuation is the single process underlying the ontogenesis of physical, biological and technical beings, and it is the sole process that allows for the conservation of being through becoming (Simondon, 1992, p. 301), therefore allowing for evolution. Individuation presupposes the existence of a disparation between at least two orders of magnitude or two scales of heterogeneous reality in non-interaction between each other, in a state of metastable equilibrium, and resolves the incompatibility between such states by giving rise to both the individuated being and its *milieu* of individuation. Crucial to Simondon's formal approach to individuation are operations. His allagmatic theory is precisely concerned with the energy exchanges among structures, which he calls transduction, that allow for the process of individuation:

> the principle of individuation is the operation that carries out an energy exchange between the matter and the form, until the unity leads to a state of equilibrium. One could say that the principle of individuation is the common allagmatic operation of the matter and form through the actualization of potential energy (Simondon, 1995, p. 44).

Attending to such operations allows to formally intervene in the process of individuation by manipulating the relational layer that constitutes the centre of individuality – i.e. emotivity and affectivity – that in his philosophy are the ground for perception and action.

Put differently, individuation rests upon an analogic operation of exchange across different domains of being with the preindividual dimension, and in living beings this creates an internal resonance "requiring permanent communication and maintaining a metastability that is the precondition of life" (Simondon, 1992, p. 305). Individuation is thus an operation of communication between at least two orders of magnitude non-compatible with each other, carried out by a process of *in*-formation. In contrast with information and communication theory, for Simondon information is a pure difference without content, structure or meaning. It is not quantifiable and carries an ontogenetic power within itself. Before being a technical concern, information is what allows for the perceptual engagement with an ensemble via the structuration of an axiomatic of signification. In a highly abstract manner, Simondon describes signification as the event of the discovery of an axiomatic that allows for the "initial resolution … of the tensions that result from the confrontation of the *primitive tropistic or taxonomic unities*" (Simondon, 2009b, p. 9). This process allows for the structuration of perception in relation to its *milieu* by giving a direction [*sens*] to the taxonomic unities that make up the world. This axiomatic, which appears in the very process of individuation, is both internal and external to the individual: internally, it connects the individuated being to the preindividual reality, by structuring affectivity and emotivity; externally, it connects taxonomic units to the environment, thereby structuring perception. The signification that emerges via the process of communication that allows for the individuation of being "is a relation of beings, not a pure expression" (Simondon, 1989b, p. 200), therefore it need not be conflated with language. Rather, it must be understood in spatial and ontogenetic terms, as the morphogenetic process that constitutes the very dimensionality of being (Simondon, 1995, p. 226) and that allows for the structuration of the perceptual spatio-temporal axiomatic upon which collective, physical, psychic individuation rests (Simondon, 1989b, p. 127).

Because matter and form are not ontologically constitutive, but a dimension of individuation, everything departs from an undifferentiated being, defined in the third part of *Du Mode* as "primitive magical unity" or *apeiron* (Simondon, 1989a, p. 162), in which there is no distinction between subject and object, man and nature. Being subsequently individuates under different guises – crystals, animals, humans, thought, technology, even relations (Simondon, 1992, p. 306). This is important to clarify Simondon's conception of politics. To Simondon politics is a mode of individuation of thought that departs from the aforementioned *apeiron* in accordance with a system of signification that affects, via its milieu, the process of individuation of other beings. As Alberto Toscano explains, Simondon's formal method "sets aside the

idea of a political disposition, of an originary sharing out of politics, in favour of a study of the conditioned contingency of political invention" (2007b) that result from the process of individuation across disparate fields. The individuation of the system of power relations known as Capitalism is the central concern of this paper. Before delving into that, however, it is worth clarifying the role that technics play in the system man-nature envisaged by Simondon.

To Simondon, technics[2] serve the purpose of instituting a code of correlation that allows for the system man-nature to function in a state of internal resonance (Simondon, 2014, p. 176). Simondon reminds us that the individual must be grasped at its centre, according to the operations of becoming and spatio-temporal structuration that constitute it (Simondon, 1992) – similarly, the individuation of the system man-nature can only be studied via an analysis of the operations of technics. Although technics are initially free, the system they create initiates a progressive closure of their freedom, until a technical invention inaugurates a new system based on a new code. In *Du Mode* Simondon defines invention as that which brings about a new technical lineage (or *machinic phylum*, following Deleuze and Guattari's vocabulary): "the beginning of a lineage of technical objects is marked by a synthetic act of invention which constitutes a *technical essence*" (1989a, p. 43). Simondon further distinguishes between two types of inventions corresponding to two kinds of progress: the continuous and the discontinuous (2005b, p. 101). While continuous, relational progress rests upon an invention that reinforces that internal logic of the system, a "veritable invention" corresponds to the establishment of an auto-correlation among elements of the system. This way, the invention disrupts the previous order and establishes a new one. Invention is purely technical and possesses a normativity "intrinsic and absolute" (Simondon, 2005a, p. 513) that alone instantiates change in collective and individual values and exigencies, precisely by modifying the system of signification – i.e. spatio-temporal axiomatic – that underlies the individuation of a system. It is then up to socio-economic factors to establish whether to take up the invention and welcome it in their community.[3]

François Laruelle calls the capacity of technical objects to give direction [*sens*] to perception, "the sense of power" and could be considered the political completion of Simondon's project.[4] In *Au-delà du Principe de Pouvoir* (1978) Laruelle outlines his political materialism, which is precisely concerned with going beyond the principle of individuation of power. To Laruelle (1978, p. 15, 35), traditional political theory conflates power [*pouvoir*] with forces of production that don't explain "the production of the process of production of power" but that, on the contrary, already inhabit the "onto-theo-political thoughts" that constitute the sense of power. As for Simondon politics stems from a mode of individuation of thought, so for Laruelle Power is first of all the power of thought, the power of thinking. The relation between Power and the Beyond-of-Power is a relation of sense, which is not to be confused with its imaginary representations, or conceptual meaning. Sense is directional, or vectoral.[5] And the sense of

---

[2] Simondon defines technics as the practical uses of different utensils. The term has been largely employed in media studies, especially after Bernard Stiegler' discussion of Simondon's theory in *Technics and Time.* Commenting on *Technics and Time,* Andrés Vaccari states that: "The essence of the human, it seems, is the technical; which is paradoxically the other of the human: the non-human, the manufactured, unnatural, artificial; the inhuman even" (2009).

[3] In *L'individuation à la Lumière des Notions de Form et d'Information* Simondon makes a fundamental distinction between community (*communauté*) and society (*société*), in which we can read his critique to communism. A community corresponds to a code of extrinsic obligations that put individuals in relation to each other, while a society is founded upon an order of relations interior to the individuals. Community and society are antagonist with each other, but together they constitute the "collective reality" humans live in. Communitarian forces tend to incorporate technics into a system of social obligations, and assimilate technical effort to work (2005a, p. 513).

[4] François Laruelle was one of the thinkers to immediately recognise Simondon's genius, as some of his writings testify (Laruelle, 1994) and he helped Simondon edit and publish his second volume of his oeuvre on individuation, *L'Individuation Psychique et Collective* (Bardini, 2014). To my knowledge not many authors have put the two thinkers in conversation before. An exception is Nandita Biswas Mellamphy, who, in "Nietzsche's Political Materialism: Diagram for a Nietzschean Politics", discusses Nietzschean politics as "the operation of an elementary and fundamentally non-signifying force-mechanics" (Nandita Biswas Mellamphy, n.d.) by ways of François Laruelle's political materialialism cross-referenced with a Simondonian account of "forces" as "pre-individual affective 'potentialities'".

[5] The discussion of power as directionality resonates with McKenzie Wark's definition of vectoral power: "In the development of the vectoral regime of power, everything depended on the development of technologies of perception" (Wark, 2012, p. 32).

power, as the operations of circulation of knowledge, can only be countered by a "power [*pouvoir*] of the senses", that is the "ensemble of technologies that the West comprehends under the name of 'interpretation'" (Laruelle, 1978, p. 5). This corresponds to a "minor hermeneutics" which directly refers to the "interpretation" of the machinic (i.e. axiomatic) dimension of power.

According to Simondon-Laruelle then, capitalist power is a matter of individuation of thought, and of the technologies that allow for the operational circulation of knowledge, therefore structuring a specific axiomatic of signification, or sense.[6] Ultimately, it is a matter of how such a system of signification allows for the circulation of the value introduced by technical objects. Simondon-Laruelle's schema allows for a more nuanced understanding of the intricate relation between capital and technology, by demystifying capitalist power as *fait accompli*. For Laruelle the sense of power is inherently linked to the production of a certain mode of thought; similarly, for Simondon such a sense can be mobilised by technical invention, which is in itself "a seed of thought" (2005a, p. 514). But how is this relationship materially produced? In the next section I attempt to answer this question by following the technological development of one of the most basic capitalist technologies – money. Subsequently, I gesture toward contemporary technological developments that are undermining the sense of capitalist power by awakening the power of the senses.

The sense of power: On the modes of existence of capital

Although Simondon hardly discusses capitalist power, let alone money, it is possible to map the development of capitalism following the evolution of the mechanist phase of technological progress. In a rather obscure seminar from 1970, Simondon locates the origins of technology in the West in the encounter between technics (i.e. the practical uses of different utensils) and the *logos* of the theoretical sciences (Simondon, 2014, p. 176).[7] Contrary to technics – which, in spite of its close relation with human essence, is an autonomous, and automated mode of being radically different from the human – Simondon explains that technology, or "mechanics", is entirely human. The system it inaugurates supplants the generative code of correlation between man and nature with the law of man – "the law of conservation of movement, the law of conservation of work" (Simondon, 2014, p. 170) – as direct consequence of the development of human language and the theoretical sciences. Simondon explains that the law of man aims only for the domestication and regularisation of nature via the anticipation of natural phenomena and the exploitation of work, thereby introducing a conception of mechanical teleological progress. This has created a system that progressively incorporates the discontinuum into a continuum that annihilates the necessary action of *kairos* – the aleatory power of nature – in favour of a "sense" of the necessity of prediction and anticipation of relations, while at the same time it forecloses the freedom of technics, until a new invention inaugurates a new code. In short, with the development of mathematics and the theoretical sciences, the language of man (be it literary, political, mathematical, or scientific) has imposed on the autonomous *logos* of technology (i.e. its chain of operations that allow for a technical system to work), establishing a transcendental *nomos* (i.e. law) which has supplanted the eco-logic code of correlation with an eco-nomic code,[8] propagating in a horizontal transductive movement to encompass economic and social relations, to the cultural

---

[6] Deleuze and Guattari discuss the "capitalist axiomatic" in *Anti-Oedipus* in a similar manner to Simondon-Laruelle. However, whereas to them capital works "as an axiomatic of abstract quantities" (1977, p. 228), it is important to note that for Simondon such axiomatic works at a deeper level, as the constitution of "intensive series" from which perception, then science, develop (Simondon, 2009b, p. 9). Furthermore, whereas for Deleuze and Guattari the capitalist axiomatic can be understood either in a strict economic sense or in a broader socio-political conception, for Simondon and Laruelle capitalist power needs to be understood as a result of the single operation of individuation, which encompasses the economic, political, and social spheres, in a somewhat similar way to Nitzan and Bichler's formulation of capital as both political and economic power (Nitzan and Bichler, 2009).

[7] Simondon traces the birth of technology in the West back to the encounter between the Eastern, or Egyptian, techniques and the Greek contemplative and theoretical sciences in the city of Alexandria around the year 300 BC. In Alexandria, the first cosmopolitan city of the Mediterranean, the development of alchemy "added technology to technics and sciences [allowing for] the development of the *logos* through *teknika*" (Simondon, 2014, p. 176).

[8] The etymology of the term "economy" – the management (*nomos*) of the household (*oikos*) – seems to point precisely to this movement of domestication of nature. This is evident today too; both classical and neoclassical economic theory share the goal of predicting economic agents' preferences and behaviours in order to forecast market dynamics and production/consumption. Furthermore, anticipation of market's behaviours is the central tenet of financial trading.

superstructure that constitutes the social (Simondon, 2014, p. 172). Therefore, the birth of technology marks the shift from an ecologic reality to an economic one. Here I propose that the bond between social and economic relations that forms the basis for capitalism can be understood by closely analysing the technological evolution of money since antiquity – which first brought to a quantification of human relations, and secondly to the abstraction of value from the underlying asset.

Money is a computational unit, store of value, and medium of circulation. Following Simondon's classification, money can be considered an elementary, therefore abstract, technology (i.e. a tool), which substitutes and quantifies the technic of exchange between man and nature. According to Simondon, this originates in the "debt" that humans have towards nature:

> We are natural beings that have a debt of technics to pay the nature that is within us; the seed of nature that is in ourselves must dilate in technics around us. We cannot achieve our essence without getting the organisers that are in us to shine (Simondon, 2014, p. 24).

Money is a technical object. As such, it is not only a thing, *hic et nunc* – it incorporates its own genesis, thereby instituting a set of transductive relations that extend to and modify culture (Simondon, 1989a, p. 20). Paradoxically, while money has remained an abstract technology since the introduction of coinage, the set of economic relations it has established has progressively concretised in capitalist power.

In his important study on debt, David Graeber demonstrates that the introduction of coinage during the Axial Age (approx. 600 BC) paved the way for the quantification of the values of pre-existing "human economies" further allowing for the rise of a "military-coinage-slave complex" (Graeber, 2012, p. 229) that typically increased debt. Coinage was possible with the discovery of metallurgy, which, according to Simondon, anticipates and introduces the industrial schema of production, based on the complete transformation of minerals into metal (2009a, p. 20), and on an idea of teleological progress that misunderstands the role of the technical object. Rooted in the discovery of metallurgy, the industrial mode of production progressively concretises during *la mécanique* – the mechanist era of the relation between man and nature. According to Simondon's analysis there exist three major phases of mechanist progress. Starting with Cartesianism in the seventeenth century, the process of mechanisation and domestication of nature intensifies throughout the eighteenth and nineteenth centuries – with the Enlightenment and Marxism respectively – transductively expanding in a horizontal movement to encompass more and more aspects of the world, first at the level of thought (with deductive sciences), then at the level of the entire individual (with pedagogy), and ultimately humanity as a whole (Simondon, 2014, p. 174). This period also coincides with the individuation of the long capitalist era in the West, made possible by the advances in calculus and commercial infrastructures that allowed for the development of banking systems and the invention of fiat currency. With fiat money, the value of social relations has increasingly been abstracted from the underlying asset it represents, and circulated freely in the form of bills of exchange or banknotes. Following Paolo Totaro and Domenico Ninno (2014) fiat money precisely derives from the application of the concept of mathematical function in the theoretical sciences to the practical sphere. Expanding on their argument, fiat money is perhaps the most ancient algorithmic technology. This has contributed to a certain gnoseological formation according to which the recursive function has shaped the *socius* by constituting "the premise to a conception of value as a quantitative continuum" (Totaro and Ninno, 2014, p. 9), which can be computed and accumulated.

The "relational invention" of fiat money fits well with Simondon's analysis of the mechanist phase of technological development. As a matter of fact, with its circulation, fiat money precisely performs the function of the *perpetuum mobile* that the laws of thermodynamics and the general law of the conservation of energy disproved, thereby shifting the focus on the productivity of work, both for the machine, and for the operator (Simondon, 2014, p. 170). Furthermore, in order to function, this system is based on a relation of trust, rather than a material relation with nature, in which both the party that "owns" and the party that "owes" must trust the apparatuses that warrant the value of this relation in the present, in order to gain from future occurrences, and that allow for its circulation – namely, banks, commercial hubs, and the State. Whereas commodity money possesses an intrinsic value determined by the precious materials it is made of (e.g. gold, silver), paper money has no intrinsic value, but only exchange value – which resides in

the system of relations guaranteed by the money token. Following Laruelle's analysis, this process of abstraction empties power of any theoretical meaning, and instead validates the concept of power as a social and political construct – largely indebted to the market dynamics that determine the circulation of knowledge: "Like the older terms of Existence or Structure, but with more facility because it expresses fewer theoretical requirements … [power] has conquered the grand capitalist style: as a concept, its practical value is virtually null, it is rather its exchange value, to which it is reduced, that makes its only possible usage" (1978, p. 1-2). In this way, money becomes the form of expression (the *logos*) of capitalist value. Money is *pouvoir d'achat* – purchasing power – the purchase of Power upon reality.

Thus, there cannot be such a thing as a subsumption of man and technology to capital. In Simondon's universal cybernetics there is only place for man, nature, and technics. To him alienation is precisely due to the development of theoretical sciences in the past centuries. As Pascal Chabot observes: "[a]lienation, for Simondon, is rooted in this intellectualism, which has the knowledge and the idea of power (*puissance*) while lacking any concrete power (*pouvoir*), except for that which it appropriates from others for its own purposes" (Chabot, 2013, p. 44). Importantly, the alienation of man from technology is not only a socio-economic matter, due to the privatisation of the labour process, but more profoundly, a physical-psychological one, which started precisely with the mechanist era of technological development, which has hindered "a more profound and essential relation, that of the continuity between the human individual and the technical individual" (Simondon, 1989a, pp. 117–118). Thus, "the bankers … are also as alienated from the machine as the members of the new proletariat" (Simondon, 1989a, p. 118). Simondon reminds us that technical progress proceeds by leaps and bounds (Simondon, 1989a, p. 40) and not according to a continuous line. The introduction of the idea of teleological process has caused a disequilibrium between the internal functioning of the machine and its external finality (i.e. the economy of production and consumption) (Simondon, 1989a, p. 119), which in turn has hindered the process of individuation in the human *qua* human, prompting an increasing level of alienation and foreclosure of the freedom of technics. Thus, the process of quantification, abstraction, acceleration for economic purposes triggered by fiat money has favoured the progressive individuation of the capitalist system of signification, with profound political consequences. As Deleuze (1992) famously stated after Simondon, with the rise of the societies of control we have indeed become dividuals, in the sense that the individual body is substituted with and fragmented into a numerical code, which grants access to information and allows for manipulation by apparatuses of control.

The abstract circulation of values money affords has evolved with its underlying technological developments, weaving a signifying infrastructure of the sense of power that has progressively expanded to different fields of life. At the time his writing, Simodon couldn't forecast the paradigmatic shift cybernetics would bring about. However, he could sense the import of "this new macrocosmic closure":

> its contours are still blurred; it contains both elements of science fiction and strategic concerns; it tends to become, if not a sacred art as the first hermetism, at least a monopoly of great powers [*puissances*] attempting to forecast their future (Simondon, 2014, p. 171).

Interestingly, to Simondon, cybernetics constitutes the formalisation of the Marxist cognitive schema (2014), the third phase of mechanism. To Simondon, Marxist dialectics introduced a break in the continuum instantiated by the "law of man". However, by applying the concept of revolution to all social groups, it integrated the discontinuous into the continuum. Subsequently, cybernetics gave a general intelligibility to such a complex system in multiple states of equilibrium, thereby initiating the rhetoric of uncontested flow upon which contemporary capitalism still thrive.

Indeed, cybernetics started the process of financialisation of life (Mirowski, 2002), by introducing concepts such as game theory and statistical samplings that still constitute the foundations of contemporary digital networks. Fast-forward forty years from Simondon's analysis; the acceleration of economic activity has reached the point of liquefaction – pure flow. Liquidity is the precept of financial trading. The more circulation, the more capital is produced. This has generated an all-encompassing acceleration that has transductively impacted all fields of life. The present conflation between economic and social exchanges at the level of software design (Easley and Kleinberg, 2010) constitutes the

apotheosis of this process of financialisation. On the one hand, "technical *reseaux*" play an increasingly fundamental role in constituting, supporting, and modifying the planetary infrastructure;[9] on the other hand, we are witnessing the seeming demotion of politics in favour of a pervasive monetisation and gener-alised algorithmic trading (of currencies, derivative, options, personal and non-personal data, cognitive labour, personal relations etc.) that indeed seem to make the process of individuation follow market dynamics. Whereas fiat currency could be considered a first instance of algorithmic technology, today algorithms perform the function of universal *numéraire.* While the production of value is increasingly bequeathed to ranking algorithms, rather than to labour, that operate an exploitation of cognitive capital beyond the scope and method of any major political economic theory (Pasquinelli, 2009), the social sphere is exposed to the contingency of price in financial markets, as demonstrated by the 2008 global recession and 2010 flash crash. Supposedly, we live in a quantified world. Transactions don't need to "take place" – they deterritorialise in the market to reterritorialise again in the *socius* as numbers, as price.

While financial capitalism runs on ever thinner, straighter, and faster fibre optic cables, and is increasingly interwoven within the fabric of social life and the geo-materiality of the world, the processual nature of value as fruit of the labour process has been superseded by the immediacy and contingency of price. Following market theorist Elie Ayache (2010), Jon Roffe argues that values, that are qualitative and predispositional in character, have been superseded by price in "the market ... as the *socius* of the capitalist social formation, the inscriptive sine qua non of capitalism" thus granting ontological primacy to contin-gency, rather then to processual production (Roffe, 2013). While Roffe's argument seems to point to a conceptualisation of the market not only as the *socius* of capitalist social formation, but more radically as the site where individuation happens, I believe that Simondon's philosophy, coupled with Laruelle's materialist politics and the primacy that both accord to contingency (which is shared by Roffe and other authors, and that will be made clear below), offers a more nuanced account of the creation of value, which allows to map the current situation in order to highlight movements of reversibility in the contemporary sense of power.

The power of the senses: Towards a technical theory of value

Following the mechanical evolution of money it is possible to understand how today capitalist power "makes more sense" than anything else – the system of signification it has established seems impregnable. This, I have argued, is due to the invention and technical evolution of money. However, Laruelle reminds us not to stop at the function of the technologies of power, but to pursue its sense beyond its principle of individuation. Sense constitutes the "*au-delà* of the linguistic function" (1978, p. 240) being it spoken, written, visual, or mathematical. While function is mechanical (the *logos*), sense is machinic. Sense is the transcendental condition internal to the function, therefore, the very condition for the production of meaning. "Sense, in its authentic concept, is not the end or the aim, it is a "fact" (the political effect pro-duced by another active power or medium) towards a power to have an end [*pouvoir d'avoir une fin*] and of being constrained by a local task" (Laruelle, 1978, p. 240). Sense is self-constituting, precisely like the Simondonian idea of signification, which corresponds to "the auto-constitution of a topology of being that resolves a prior incompatibility through the appearance of a new systematic" (Simondon, 1989b, p. 127). Thus, sense only arises via a process of individuation, *as* the individuation of thought. It is a vector, which bears both the power to carry on the "task" required by the event of signification/individuation, and also the power (both in terms of *pouvoir*) to actively resist to it. Thus, "making sense" corresponds to an allagmatic operation that allows for a new axiomatic of being. It is a concrete, individualised power.

---

[9] Benjamin Bratton defines the "stack" as a kind of Simondonian technical *reseau*: "Planetary-scale computation takes different forms at different scales: energy grids and mineral sourcing; chthonic cloud infrastructure; urban software and public service pri-vatization; massive universal addressing systems; interfaces drawn by the augmentation of the hand, of the eye, or dissolved into objects; users both overdetermined by self-quantification and exploded by the arrival of legions of nonhuman users (sensors, cars, robots). Instead of seeing the various species of contemporary computational technologies as so many different genres of ma-chines, spinning out on their own, we should instead see them as forming the body of an accidental megastructure … This model is of a Stack that both does and does not exist as such: it is a machine that serves as a schema, as much as it is a schema of ma-chines" (Bratton, 2014). The individuation of the stack as a technical ensemble affects the individuation of both man and nature, and vice versa.

In order to break the status quo a new "veritable technical invention" is needed, which corresponds to the establishment of "a new regime of functioning" (Simondon, 2014, p. 301) between individuals (both technical and biological). This is because a technical invention inserts itself within the community by instituting a function that modifies collective values and beliefs on the basis of its own internal design, thereby modifying its associated *milieu* and impacting collective and psychic individuation. The true, discontinuous, invention possesses:

> something which goes beyond the community and institutes a transindividual relation, going from individual to individual without passing through the communitarian integration guaranteed by a collective mythology. The immediate relation between individuals defines a social existence in the proper sense, since the communitarian relation doesn't allow individuals to communicate directly with each other but constitutes a totality via whose intermediary individuals communicate indirectly, and without a precise conscience of their own individuality (Simondon, 2005a, pp. 513–514).

Simondon already sensed this possibility with the concretisation of the cybernetic schema. Although to Simondon cybernetics constitutes a further phase in the mechanist evolution of technics, he also lets transpire that it may inaugurate a new era of technological development, due to the instantiation of a "movement of thought" (Simondon, 2014, p. 302) that would contribute to the development of a technical mentality – a thought-network, that is "the material and conceptual synthesis of particularity and concentration, individuality and collectivity" (Simondon, 2014, p. 307). As a matter of fact, cybernetics has furnished the cognitive schema for the invention of post-industrial technical objects – that is, technical objects, such as information and telecommunication networks that eschew the foreclosing mechanist schema that the *logos* of the sciences has imposed upon technics (Simondon, 2014, p. 303). Simondon describes post-industrial technical objects as the unity of two layers of reality – one stable and permanent, which adheres to the user, and the other modular, impersonal, mass-produced by industry and distributed by all the networks of exchange (Simondon, 2014, pp. 311–312). The "reticular structure" that characterises post-industrial technical objects makes them open and participable. While Simondon was mainly referring to telecommunication networks such as phone cables and antennas, contemporary algorithms constitute the emblem of post-industrial technical individuals. As a matter of fact, the process of transduction that occurs from mathematical formalization to digital implementation (i.e. the fact that electronic circuits "can count") opens algorithms to the incomputable dimension of preindividual reality, thereby creating infinite occasions to produce novelty. In a similar sense, Luciana Parisi (2013, p. 46) discusses algo-rithms as "objectiles" – i.e. "spatio-temporal events" that not only are open to the possibilistic past, but also to infinite potential futures. Therefore, the process initiated with cybernetics, rather than foreclosing chances of disentanglement, has opened up an infinite variety of potentialities for reversal of the sense of power, that are immanent to the unilateral function of digital computation.

The open character of post-industrial technical object is evident in the financial-technical ensemble too. The invention of the Black-Scholes-Merton equation (1973), which created the trading of derivatives as we know it by allowing for a scientific estimate of the price of options in the market, introduced noise in financial markets as fundamental condition of their functioning. "Noise makes financial markets possible, but also makes them imperfect" (Black, 1986, p. 530). Noise doesn't only relate to the asymmetry of information between two parties, but first and foremost to the openness to untapped potentials immanent to the channels of communication. With the digitalisation of trading platforms and the introduction of algorithmic trading, which operates via real-time simulations and statistical samplings, such as the Monte Carlo method, the openness of digital objects is felt at the deeper level of the individualisation of algo-rithms in complex environments, as they interact with both random, but individualised data, and the preindividual dimension of computation. The 2010 Flash Crash in the context of high-frequency trading (HFT) seems to confirm this thesis: *no one knows what happened*. In this context, Mackenzie Wark's comment about the 1987 Black Monday is more actual than ever: "finally – and this goes for the capitalists too – an inhuman power rules over everything" (Marx cited in Wark, 1994, p. 174).

However, Simondon reminds us that, while the non-human is central to human progress and increasingly autonomous, ultimately "human reality" is what resides within machines (Simondon, 1989a, p. 12).

The concept of transindividual technical relation at the basis of a "real invention" precisely points toward this direction. The human presence among machines is a perpetual invention that goes well beyond the mechanist paradigm of the industrial era. As a matter of fact, the technical invention is born as the concretisation (i.e. individuation) of the thought of an inventor-designer, via a technical effort that opens a new channel of communication between man and nature – a transindividual technical relation. This produces an "irradiation of values" (Simondon, 1995, p. 514) that departs from the individual, because: "communicating is in the nature of the individual, it is irradiating the information that he himself created". As a matter of fact, to Simondon the living being can be considered a node of information – "it is a system within a system, containing within itself a mediation between two different orders of magnitude" (Simondon, 1992, p. 306). Technical effort can be regarded as one kind of Laruellian minor hermeneutics – a material operation aimed to establish a new sense of power. To Simondon: "the technical being is open to all human gesture to use it and recreate it, and it inserts itself into an *élan* of universal communication" (Simondon, 2005a, p. 512).

> The *value* of the *dialogue* of the individual with the technical object is to preserve human effort, and to create a transindividual domain, distinct from community, within which the notion of freedom takes a *sense*, and which transforms the notion of individual destiny but it doesn't crush it. [The technical being] is the correlative of the individual's autocreation (Simondon, 2005a, p. 515 – emphasis added).

In this context, a close reading of Simondon's theory offers transindividuation as a form of radical xenocommunication, a mode of communication that always already implies an alien component – the preindividual. This reformulation challenges the all-encompassing smooth extraction of coded information operated by cognitive capitalism, by uncovering gaps of resistance to programmed interaction that allow for the encounter with a "real collective" in the form of contagious transindividual thought.

Therefore, whereas financial markets constitute a further step in the continuous evolution of fiat currency, the invention of cryptocurrency seems to introduce a break in the mechanist-capitalist paradigm, and could be considered a veritable invention. Cryptocurrencies are a peculiar hybrid of fiat currency and commodity money, born out of the "reinterpretation" of previous discoveries in cryptography and computer science (Nakamoto, 2008) that eschew any previous theory of value, and have the potential to set the foundations for a radically new political economy, overcoming the divisions between human and non-human, asset-matter and money-form. This is because digital cash has introduced a system of values that embraces the open character of post-industrial technical objects, and that may radically disrupt the status quo that fiat money has imposed on the world since at least the Renaissance. Whereas capitalist power, in its emptied form, is closely related to the exchange value of fiat currency, a new mode of power is emerging, based on entirely different premises – the technical value produced by the technical effort involved in the invention, and use, of cryptocurrency.

While an in-depth discussion of cryptocurrencies is beyond the scope of this paper, the invention of Bitcoin and other altcoins testify the liveliness of a transindividual collective in a true dialogue with the technology, based on a collective technical effort made possible by the "reticular" structure of algorithms, and with each other, aimed to the expansion of such a thought-network, regardless of any political credo. Importantly, this confirms Simondon's claim that "a technical being is thus a seed of thought" (2005a, p. 514), which is currently reawakening the power of the senses that lies in each and every individual. While we still do not know whether, with the digitalisation of mathematics and the sciences, we are indeed coming to the transductive convergence between technical individuation and psychic individuation, as Massumi asks (2009, p. 45), Simondon's philosophy reminds us that ultimately, the future of humanity is in our hands, in the power of the senses.

Conclusions: Beyond the power principle

In this essay, I have examined the establishment of capitalist power as a process of "sense making", via the application of Simondon's philosophy of individuation and technics to the medium of money, coupled with François Laruelle's early work. Furthermore, I have discussed Simondon's concept of invention as a novel approach to the theory of value. Simondon sees value as inherently technical, introduced by an

invention that radically modifies the relation between man and nature. The definition of a technical, or machinic value points towards a higher order of values that, in economic terms, can be explained neither through Marx's labour theory of value, nor as the output of the law of marginal utility. Instead it is closer to what Felix Guattari (1995, p. 55) calls "constellations of Universes of value", that are constituted at the "machinic interface between the necessary actual and the possibilist virtual". To Guattari (1995, p. 55): "The sterile opposition between use value and exchange value [needs to] be relinquished in favour of an axiological complexion including all the machinic modalities of valorisation: the values of desire, aesthetic values, ecological, economic values…". Precisely, the discussion of the mechanist development of money allows us to understand the categories of exchange value and use value as part of the capitalist mode of signification. Contrarily to the abstract, relational character of fiat money, which inaugurated a system based relations of capital and trust in apparatuses of control, the invention of cryptocurrency introduces a system of values that embrace the open, ontogenetic nature of post-industrial technical object. It remains to be seen whether the development of cryptocurrency, in experimenting with open-ended approaches to the technology at our disposal, represents a true departure from the predictive mechanist paradigm discussed throughout this paper. Ultimately its potential lies in a newfound "common sense," a "sense of the commons" to be achieved in cooperation with technologies rather than in antagonism or separation. This can only be realised via a *trans*gression from the necessity of teleological progress: a transindividuation. As Simondon observes: "isn't it all creation a transgression?" (2014, p. 449).

Bibliography

Ayache, E. (2010) *The Blank Swan: The End of Probability*. Chichester: Wiley.

Bardini, T. (2014) Simondon, Individuation and the Life Sciences: Interview with Anne Fagot-Largeault. *Theory, Culture & Society*, 31(4), 141-161.

Black, F. (1986) Noise. *The Journal of Finance*, 41(3), 529–543.

Black, F. and Scholes, M. (1973) The Pricing of Options and Corporate Liabilities. *The Journal of Political Economy*, *81*(3), 637–654.

Bratton, B. (2014) The Black Stack. *E-Flux*, *03*. Retrieved from http://www.e-flux.com/journal/the-black-stack/

Chabot, P. (2013) *The Philosophy of Simondon: Between Technology and Individuation*. Trans. A. Krefetz and G. Kirkpatrick. London: Bloomsbury.

Combes, M. (2013) *Gilbert Simondon and the Philosophy of the Transindividual*. Trans. T. LaMarre. Cambridge, MA: The MIT Press.

Deleuze, G. (1992) Postscript on the Societies of Control. *October*, 59, 3–7.

Deleuze, G., and Guattari, F. (1977) *Anti-Oedipus: Capitalism and Schizophrenia.* Trans. R. Hurley, M. Seem, and H. R. Lane. London: Continuum.

During, E. (2006) Simondon au Pied du Mur. *Critique*, (706). Retrieved from http://www.ciepfc.fr/spip.php?article41

Easley, D. and Kleinberg, J. (2010) *Networks, Crowds, and Markets: Reasoning About a Highly Connected World*. New York: Cambridge University Press.

Graeber, D. (2012) *Debt: The First 5,000 Years*. Brooklyn, New York: Melville House.

Laruelle, F. (1978) *Au-delà du Principe de Pouvoir*. Paris: Payot.

Laruelle, F. (1994) The Concept of a "First Technology": A "Unified Theory" of Technics and Technology. In G. Chatelet (Ed.), *Sure Simondon: Une Pensée de L'Individuation et de la Technique* (206 – 219). Paris: Albin Michel. Trans. N. Biswas Mellamphy. Retrieved from http://speculativeheresy.wordpress.com/2008/08/03/laruelles-essay-on-simondon-the-concept-of-a-first-technology/

Massumi, B. (2009) "Technical Mentality" Revisited: Brian Massumi on Gilbert Simondon. *Parrhesia*, 7, 36 – 45.

Mirowski, P. (2002) *Machine Dreams: Economics Becomes a Cyborg Science*. Cambridge and New York: Cambridge University Press.

Nakamoto, S. (2008) *Bitcoin: A Peer-to-Peer Electronic Cash System*. Paper.

Nitzan, J. and Bichler, S. (2009) *Capital as Power.* London: Routledge.

Mellamphy, N. B. (n.d.) *Nietzsche's Political Materialism: Diagram for a Nietzschean Politics.* Unpublished paper. Retrieved from https://www.academia.edu/2769407/ Nietzsches_Political_Materialism_Diagram_for_a_Nietzschean_Politics

Parisi, L. (2013) *Contagious Architecture: Computation, Aesthetics, and Space.* Cambridge, MA: The MIT Press.

Pasquinelli, M. (2009) *Google's PageRank Algorithm: A Diagram of the Cognitive Capitalism and the Rentier of the Common Intellect.* Retrieved from https://www.academia.edu/1992027/ Googles_PageRank_Algorithm_A_diagram_of_Cognitive_Capitalism_and_the_Rentier_of_the_Common_Intellect

Roffe, J. (2013) Brief Summary – The Intensive Pricing Surface of the Market. Presented at the Between Philosophy, the Social and the Market Workshop, Melbourne. Retrieved from https:// www.academia.edu/5498181/Brief_Summary_-_The_Intensive_Pricing_Surface_of_the_Market

Simondon, G. (1989a) *Du Mode d'Existence des Objets Techniques.* Paris: Aubier.

Simondon, G. (1989b) *L'Individuation Psychique et Collective.* Paris: Aubier.

Simondon, G. (1992) The Genesis of the Individual. In *Incorporations.* Trans. M. Cohen and S. Kwinter. New York: Zone Books.

Simondon, G. (1995) *L'Individu et sa Genèse Physico-Biologique.* Grenoble: J. Millon.

Simondon, G. (2005a) *L'Individuation a là Lumière des Notions de Forme et d'Information.* Grenoble: J. Millon.

Simondon, G. (2005b) *L'Invention Dans les Techniques: Cours et Conférences.* (J.-Y. Chateau, Ed.). Paris: Seuil.

Simondon, G. (2009a) Technical Mentality. *Parrhesia,* 7, 17–27.

Simondon, G. (2009b) The Position of the Problem of Ontogenesis. *Parrhesia, 7,* 4-16.

Simondon, G. (2014) *Sur la Technique: 1953-1983.* Paris: Presses Universitaires de France.

Toscano, A. (2007a) Technical Culture and the Limits of Interaction: A Note on Simondon. In J. Brouwer and A. Mulder (Eds.) *Interact or Die!.* Rotterdam: V2 Pub./NAi Publishers.

Toscano, A. (2007b) The Disparate: Ontology and Politics in Simondon. Presented at the Society for European Philosophy/Forum for European Philosophy, University of Sussex.

Totaro, P., and Ninno, D. (2014) The Concept of Algorithm as an Interpretative Key of Modern Rationality. *Theory, Culture & Society,* 31(4), 29-49.

Vaccari, A. (2009). Unweaving the Program: Stiegler and the Hegemony of Technics. *Transformations,* 17. Retrieved from http://www.transformationsjournal.org/journal/issue_17/article_08.shtml

Wark, M. (1994) *Virtual Geography: Living with Global Media Events.* Bloomington: Indiana University Press.

Wark, M. (2012) *Telesthesia. Communication, Culture, and Class.* Cambridge: Polity.