

ERASMUS UNIVERSITY ROTTERDAM
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BA PHILOSOPHY OF A SPECIFIC DISCIPLINE
BACHELOR THESIS

**A THOUSAND BLOCKCHAINS:
CAPITALISM AND TOKENMANIA**

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Abstract. Capitalism has become able to appropriate economically and quantitatively our “qualitative field of life” and to destroy and create social relations based on debt mechanisms. In parallel, technologies such as blockchain are expected to disrupt business practices and social interactions as they are currently conceived. For Brian Massumi, blockchain is what we need to resist capitalism and escape its pervasiveness, as it can help us “reinvent” the concept of value within broader collective arrangements. In this thesis, I argue against this assumption; blockchain is still inadequate for effectively resisting the pernicious effects of capitalism, and decentralized technologies cannot replace the hard work of politics.

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“Dai diamanti non nasce niente, dal letame nascono i fior.”¹
Nothing comes from diamonds; flowers are born out of shit.
(Fabrizio De Andrè)

¹ Fabrizio De Andrè, “Via Del Campo (Live),” YouTube video, June 7, 2017, <https://youtu.be/wJ5jjUVqHbE>.

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1. Introduction

Contemporary scholars such as Thomas Piketty are warning us that human progress is fragile, especially as it is constantly threatened by inegalitarian tendencies.¹ The capitalist system we live in has arguably raised living standards, thanks to its power to motivate people and allocate resources. However, such allocation is not exactly equitable, as today the wealthiest 1% of the population is richer than the bottom 90% combined.² Gilles Deleuze and Félix Guattari would probably invite us to look beyond wealth inequality, which is a symptom of something much broader. To better understand the problem, we should follow their definition of capitalism, “the only social machine that is constructed on the basis of decoded flows, substituting for intrinsic codes an axiomatic of abstract quantities in the form of money.”³ Its effects are visible in the massive financialization that we experience every day, when “the qualitative field of life”⁴ is appropriated economically and quantitatively.

Over the last decades, financial intermediaries have gained exceptional influence over our daily lives; capitalism has become able to exercise “control over the future”⁵ and to destroy and create social relations based on debt mechanisms. In parallel, technology has invaded the social sphere with innovations such as blockchain (a digital public ledger that records online transactions), which is expected to disrupt business practices and social interactions as they are currently conceived. We could envision “a monumental shift in the power structure of the world.”⁶ While some people are only concerned with new ways to increase their profits, others see blockchain as the most promising opportunity to effectively resist the pernicious effects of capitalism.

This thesis aims to: a) critically analyze financialization and its connections with capitalism and debt mechanisms; b) investigate the revolutionary potential of blockchain technologies with respect to economies and societies, in contrast to the drawbacks and risks they entail; c) evaluate the viability of ongoing experimental implementations of blockchain technologies in their attempt to resist capitalism; specifically, among these, the idea proposed by Brian Massumi, which requires us to “reinvent” the concept of value within broader collective arrangements. My conclusion is unequivocal: Massumi’s project, although interesting and promising, is undermined by weaknesses and contradictions. Blockchain technologies are not yet adequate for fully and effectively resisting capitalism.

In chapter 2 (Financialization), I investigate the logic behind the attribution of value and the circumstances which led to the emergence of money. For Deleuze and Guattari, the capitalist system sustains itself thanks to its ability to produce desires; these, in turn, create new needs that capitalism readily satisfies. This process implies a subtle form of subjugation, where money is used to generate

¹ Thomas Piketty, *Capital and Ideology* (Cambridge: Harvard University Press, 2020), 16.

² Ray Dalio, “Why and How Capitalism Needs to Be Reformed,” LinkedIn.com, April 5, 2019, <https://www.linkedin.com/pulse/why-how-capitalism-needs-reformed-parts-1-2-ray-dalio/>.

³ Gilles Deleuze and Félix Guattari, *Anti-Oedipus: Capitalism and Schizophrenia* (New York: Penguin, 2009), 139.

⁴ Brian Massumi, *99 Theses On The Revaluation Of Value. A Postcapitalist Manifesto* (Minneapolis University Of Minnesota Press, 2018), 39.

⁵ Maurizio Lazzarato, *The Making of the Indebted Man: An Essay on the Neoliberal Condition* (Cambridge: Semiotext, 2012), 46.

⁶ Andy Greenberg, “An Interview with a Digital Drug Lord: The Silk Road’s Dread Pirate Roberts (Q&A),” Forbes.com, August 14, 2013, <https://www.forbes.com/sites/andygreenberg/2013/08/14/an-interview-with-a-digital-drug-lord-the-silk-roads-dread-pirate-roberts-qa/>.

debt and make sure that the mechanism is continuously perpetuated. Ultimately, although the capitalist system is based not on money but on induced needs, alternative monetary frameworks are still desirable, but they would be insufficient to solve the problem at its roots. Capitalism, enhanced by financialization, should be actively resisted in more fundamental and revolutionary ways.

Some of these could involve blockchain technologies, which in the past years have experienced a rise in popularity, also prompted by Bitcoin's surprising performance in the currency market. In chapter 3 (Blockchain), I describe blockchain's basic features, such as decentralization, and its best-known financial implementations, such as cryptocurrencies and smart contracts. Blockchain-based money is not merely a digital currency, but rather, a set of protocols affecting social relations. Hence, its huge revolutionary potential could globally affect power structures. Can blockchain serve as a platform for collective individuation, despite its weaknesses? Although currency has become a constitutive element of social relations, a rupture with causality should take place on a pre-monetary level, and blockchain technologies may serve the purpose by virtue of their power to bring people together in ways unmediated by money.

In chapter 4 (Reinventing Value), I analyze Massumi's call for a reinvention of value by means of blockchain. After describing affect as the distinctive feature of the qualitative field of life and framing it in terms of a differential relation of power, I address the main weaknesses and contradictions of Massumi's proposal. First, since differentials of power entail variations of degree, a quantitative account of variations in the intensities of a quality is inevitable. Second, as we are forced into a condition of complicity with capitalism, it is rather utopian to think that we can technologically shelter from its influence. Third, the project depends on goods and services that necessarily need to be sourced from the dominant economy. This could introduce an unwanted-yet-present teleology, dictated by the technological platform's need for self-preservation. All this makes me think that blockchain technologies are not yet adequate for fully and effectively resisting the pernicious effects of capitalism.

Nevertheless, even if we manage, somehow, to reinvent value and register qualitative intensities, other issues will remain to be solved. In chapter 5 (Post-value challenges), I describe such issues. First, although blockchain allegedly eliminates the need to trust other people, we cannot speak of trustless technologies, and these are ultimately not even desirable. Second, the uncritical adoption of tokens combined with the tendency to tokenize everything can exacerbate the same capitalistic logic that blockchain is supposed to resist. Third, since blockchain has the potential to control economics, power relations risk being not avoided, but merely concealed. Lastly, the firm belief that decentralization coincides with democracy can be the symptom of network fetishism, that could make us look at networks with genuine interest even if these were the causes of our own oppression.

In chapter 6 (Conclusions) I summarize the arguments developed in the thesis and their implications. Some additional technical clarifications on the functioning of the blockchain can be found in Appendix A. Furthermore, since I ultimately believe that we are risking a shift from the opportunity to use blockchain to reinvent value towards a fervor to reinvent value to use blockchain, I present in Appendix B three considerations that could serve as the basis for the exploration of alternative paths.

2. Financialization

In this chapter, I investigate the logic behind the attribution of value and the circumstances which led to the emergence of money. For Deleuze and Guattari, the capitalist system sustains itself thanks to its ability to produce desires; these, in turn, create new needs that capitalism readily satisfies. This process implies a subtle form of subjugation, where money is used to generate debt and make sure that the mechanism is continuously perpetuated. Ultimately, although the capitalist system is based not on money but on induced needs, alternative monetary frameworks are still desirable, but they would be insufficient to solve the problem at its roots. Capitalism, enhanced by financialization, should be actively resisted in more fundamental and revolutionary ways.

2.1 Money

In 1903, William Henry Furness III, an American anthropologist, spent some months on the island of Yap in Micronesia. He described habits and customs of the local population, including the use of “large, solid, thick, stone wheels, ranging in diameter”¹ as means of exchange. These rai stones were so inconveniently heavy² that, eventually, people stopped bothering about their physical possession; new owners gradually started to end bargains by accepting the mere acknowledgment of ownership, while the stones remained “undisturbed on the former owner’s premises.”³ Curiously, the Yapese used an oral ledger shared within communities, consisting of stories passed down over generations, to record changes in ownership and make sure they were known and indisputable.⁴

The value bestowed upon the stones was twofold. On the one hand, it depended on their size; for instance, a three-span rai stone was big enough to purchase fifty baskets of food.⁵ On the other hand, it could also involve extrinsic factors, such as the number of people who died to bring the stone home.⁶ Since the attribution of value can follow different criteria (e.g., usefulness, rarity, aesthetics), anything can potentially be turned into a currency: what is crucial is the mutual recognition among its users. Generally, only “our” money seems real and rational to us, and that of other countries appears as worthless.⁷ As Niall Ferguson puts it, money “is a matter of belief, even faith [...]; trust inscribed.”⁸ Ultimately, the acceptance of a specific currency is discretionary and based on the expectation that others would do the same.⁹

¹ William Henry Furness, *The Island of Stone Money, Uap of the Carolines* (London: JB Lippincott, 1910), 93.

² Nicholas Gregory Mankiw, *Macroeconomics* (New York: Worth Publishers, 2019), 130.

³ Furness, *The Island of Stone Money, Uap of the Carolines*, 96.

⁴ Scott M. Fitzpatrick and Stephen McKeon, “Banking on Stone Money: Ancient Antecedents to Bitcoin,” *Economic Anthropology* 7, no. 1 (June 7, 2019): 9, <https://doi.org/10.1002/sea2.12154>.

⁵ Furness, *The Island of Stone Money, Uap of the Carolines*, 101.

⁶ John Tharngan, Stone Money, *BBC News*, July 16, 2000, http://news.bbc.co.uk/1/hi/english/static/road_to_riches/prog2/tharngan.stm.

⁷ Milton Friedman, “The Island of Stone Money,” in *The Collected Works of Milton Friedman*, ed. Robert Leeson and Charles G. Palm (Stanford: Hoover Institution Press, 1991), 3.

⁸ Niall Ferguson, *The Ascent of Money: A Financial History of the World* (New York: Penguin Books, 2009), 29-30.

⁹ Dror Goldberg, “Famous Myths of ‘Fiat Money,’” *Journal of Money, Credit and Banking* 37, no. 5 (2005): 957, <https://www.jstor.org/stable/3839155>.

If we recognize the role of the rai stones in the Yapese society as means of exchange, we could argue that money is a response to the need to deal with issues of distribution of goods and allocation of work among economic agents. In other words, money could have emerged for necessity, as it makes economic transactions easier. This is in line with the theories of Adam Smith, who argued that every man “lives by exchanging, or becomes in some measure a merchant.”¹⁰ However, there is at least one other possible approach to account for the emergence of money. David Graeber claims that currencies precede trade, market transactions and barter, which are all relatively late developments.¹¹ This would mean that, historically, we should not be looking at money as a medium of exchange, but rather, as a standard of deferred payment giving consistency to an otherwise evanescent concept: debt, a prominent characteristic of pre-monetary societies.

2.2 Debt and desire

Graeber’s theory that debt and credit appeared before money requires an investigation beyond a merely transactionalist sphere. We need to move from the exchange of goods to the organization of relations among people, something that has little to do with the accumulation of wealth.¹² Following Michel Foucault, Deleuze and Guattari argued that the role of money within such a human economy is to make debt infinite, as “the tax on aristocrats and the distribution of money to the poor are a means of bringing the money back to the rich.”¹³ In other words, money makes the regime of debts stronger; hence, it is not a transparent tool of exchange, but rather a constitutive element of social relations.¹⁴ As Maurizio Lazzarato emphasizes, people are “trained” to promise to honor their debts.¹⁵

Let us suppose that a man freely decides to help his neighbor with some maintenance work. He would expect that, whenever he needs help in the future, his neighbor will return the favor; this can be seen as a form of cooperation-oriented feeling of mutual obligation. However, let us also consider Graeber’s paradigmatic example of the African slave trade. Here, the slaves’ obligation did not arise from individual freedom, but rather, from subjugation exercised by means of illegitimate violence. It is easy to see the change from human to market economy, as slaves shift from being subjugated to being commodified. Slavery can be seen as a form of pre-monetary social imbalance, degenerated into a market perversion. Although money is not the root cause of the injustices we observe in our daily lives, it often contributes to their exacerbation and perpetuation. Therefore, it still makes sense to look for alternative monetary frameworks.

Capitalism is responsible not only for the temporal perpetuation of debt, which Lazzarato calls “control over the future,”¹⁶ but according to Deleuze and Guattari, it also entails “an internalization of the creditor-debtor relation.”¹⁷ The capitalistic market economy structurally entails exploitation, and it

¹⁰ Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (Chicago: University of Chicago Press, 2010), 41.

¹¹ David Graeber, *Debt: The First 5,000 Years* (Brooklyn: Melville House, 2014), 58.

¹² *Ibid.*, 157.

¹³ Deleuze and Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, 197.

¹⁴ Massumi, *99 Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 17.

¹⁵ Lazzarato, *The Making of the Indebted Man: An Essay on the Neoliberal Condition*, 46.

¹⁶ *Ibid.*

¹⁷ Deleuze and Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, 218.

does not even require extrinsic forces (such as violence) for its self-preservation. Everything revolves around the ability to exploit lacks, implemented through a system of desire production that takes advantage of people's libidinal (and not exclusively sexual) impulses. The causal relation between needs and desires is reversed:¹⁸ fears, anxieties and loves are coded by debt relations and social dynamics of exchange are converted into cash.¹⁹ Ultimately, alternative monetary frameworks may mitigate these vicious cycles, but they would hardly be sufficient to fully escape capitalism.

2.3 Governance

One additional cause of capitalism's pervasiveness is the fact that the State quickly became its accomplice. As Graeber emphasizes, governments force their citizens to pay taxes in a specific currency.²⁰ More importantly, "social currencies," those related to "the creation, destruction, and rearranging of human beings,"²¹ risk being overwhelmed by the control exercised by the State. In these conditions, can the market be a site of justice? Back in the Middle Ages, some regulations were in place to ensure that "at least some of the poorest could buy things."²² However, according to Foucault, things changed from the middle of the 18th century, when the necessity and usefulness of governmental interventions started to be questioned. This is the essence of liberalism: the economy turns into a game and the State only needs to make sure that the rules are applied,²³ without worrying about (in)justice.

From the 20th century, economic liberals share a new goal: to model the overall exercise of political power on the principles of a market economy.²⁴ This so-called neo-liberalism entails a disruptive change of perspective: the sovereign State is replaced by the economic State²⁵ and the deregulation of markets enhances the emergence of new structures in the coordination of economy and state power.²⁶ The consequences are twofold. On the one hand, a new form of subjugation emerges, financial in theory, corporeal in practice. The human being turns into *homo aeconomicus*, an entrepreneur rather than a good exchanger, forced to become his own capital, producer, and source of earnings.²⁷ It is "a machinic enslavement profoundly enabled by and integrated with inherited forms of oppression"²⁸ whose ultimate goal is to govern people's behavior.²⁹ On the other hand, due to a process of boundless

¹⁸ Ibid., 27.

¹⁹ Ibid., 185.

²⁰ Graeber, *Debt: The First 5,000 Years*, 373.

²¹ Ibid., 157.

²² Michel Foucault, *The Birth of Biopolitics. Lectures at the Collège de France, 1978-79*, ed. Michel Senellart (Basingstoke: Palgrave Macmillan, 2008), 30.

²³ Ibid., 201.

²⁴ Ibid., 131.

²⁵ Maurizio Lazzarato, "Neoliberalism, the Financial Crisis and the End of the Liberal State," *Theory, Culture & Society* 32, no. 7-8 (October 18, 2015): 71, <https://doi.org/10.1177/0263276415600037>.

²⁶ Joseph Vogl, "The Sovereignty Effect," *Qui Parle* 23, no. 1 (2014): 150, <https://doi.org/10.5250/quiparle.23.1.0125>.

²⁷ Foucault, *The Birth of Biopolitics. Lectures at the Collège de France, 1978-79*, 226.

²⁸ Jonathan Beller, "The Fourth Determination," (E-flux, October 2017), <https://www.e-flux.com/journal/85/156818/the-fourth-determination/>.

²⁹ Lazzarato, *The Making of the Indebted Man: An Essay on the Neoliberal Condition*, 150.

financialization, all realms of social life become submissible and eventually submitted to the economic approach.³⁰ As Randy Martin puts it, “money is both the means and ends of life.”³¹

Finally, another element should be introduced: risk. Since currencies typically differ across nations, the settlement of international trade imbalances requires a special kind of money, not pegged to the price of a commodity, universally recognized. In 1944, this led to the Bretton Woods agreement, which anchored international currencies to the US dollar, in turn anchored to gold, to ensure fixed exchange rates and prevent speculation.³² In 1971, however, US president Richard Nixon unilaterally decided to end dollar-gold convertibility, thereby triggering a deregulation of currency movements and a new regime of free trade, with an increasing threat of exchange rate instability and volatility.³³ As Massumi puts it, everything becomes “a calculus of risk,”³⁴ as value is now contestable and can be traded as a commodity. Financial derivatives (such as assets in the present linked to prices in the future) became a valid alternative to money.³⁵ This transformation has three main consequences. First, the increasingly unclear distribution of roles among social and economic actors leads to what Joseph Vogl calls a “sclerosis of political decision processes,”³⁶ or in other words, a crisis of governance. Second, the distinction between money and capital is revolutionized: derivative trading makes the idea to separate the real economy of values from financial markets more and more absurd.³⁷ Financial relationships are no longer passive reflections of people’s expectations, but they actively affect economic activity. Third, people are now divided between those able to take risks and those who are “at risk.”³⁸

2.4 Resistance

We have seen that financialization entails a new form of subjugation. But who benefits from it? One might say that the better off are those who have large capitals to leverage. Yet, according to Deleuze and Guattari, the ultimate beneficiary is capitalism itself, as everybody works for its immortality.³⁹ As Massumi puts it, “humans do not run capitalism; capitalism runs through the human.”⁴⁰ It is so pervasive that any alternative configuration appears utopian, but this does not mean that everybody is affected in the same way. As Piketty eloquently emphasizes, different rates of development and uneven

³⁰ Vogl, “The Sovereignty Effect,” 148.

³¹ Randy Martin, *Financialization of Daily Life* (Philadelphia: Temple University Press, 2002), 3.

³² Frances Thomson and Sahil Dutta, “Financialisation: A Primer” (Amsterdam: Transnational Institute, 2018), 3, <https://www.tni.org/files/publication-downloads/financialisation-primer-sept2018-web.pdf>.

³³ Dick Bryan and Michael Rafferty, *Capitalism with Derivatives* (London: Palgrave Macmillan, 2006), 118.

³⁴ Brian Massumi, *The Power at the End of the Economy* (Durham: Duke University Press, 2015), 4.

³⁵ Bryan and Rafferty, *Capitalism with Derivatives*, 10.

³⁶ Vogl, “The Sovereignty Effect,” 126.

³⁷ Bryan and Rafferty, *Capitalism with Derivatives*, 13.

³⁸ Randy Martin, *An Empire of Indifference: American War and the Financial Logic of Risk Management* (Durham: Duke University Press, 2007), 11.

³⁹ Deleuze and Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, 346.

⁴⁰ Massumi, *99 Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 36-37.

wealth concentrations result worldwide in pervasive and increasing inequality.⁴¹ Is progressive wealth taxation⁴² the solution we should pursue?

Deleuze and Guattari would probably argue that Pikettian interventions would not free people from desire-induced enslavement. In other words, the dark side of capitalism would not disappear. Besides inequality, several other issues would remain, such as those concerning human subjectivity; progressive wealth taxation would not prevent capitalism from producing desires and perpetuating its subjugation forces. Equality-oriented policies can support people's endurance to financialization, but this is ultimately functional to capitalism's perdurance. Instead, Deleuze and Guattari call for active resistance: subjugated groups should become subject-groups, who "have as their sole cause a rupture with causality, a revolutionary line of escape."⁴³ Mark Seem, in his introduction to *Anti-Oedipus*, paraphrases this concept in terms of a task: groups have to connect in new ways, construct new social arrangements.⁴⁴ Guattari, in his *The Three Ecologies*, is even more radical: we need "existential mutations."⁴⁵ In Appendix B, I describe what this could mean.

In September 2011, a movement named *Occupy Wall Street* started major protests across 1,500 cities against an unfair global economy pervaded by "the corrosive power of major banks and multinational corporations."⁴⁶ Some define the movement as a force that attempted to fight financialization through a "situated resistance."⁴⁷ Others, such as Massumi, argue that Occupy's model of open-assembly is an example of inclusive participation.⁴⁸ These protests could resemble what Ian Pindar and Paul Sutton would call "unpredictable and untamed dissident subjectivities"⁴⁹ but, reportedly, the movement failed precisely because it kept drawing its power from a utopian impulse⁵⁰ that prevented any constructive engagement with the political systems in place. Nevertheless, actual change cannot prescind from an alternative way of looking at the world. As argued by George Orwell, new alternatives require new vocabularies,⁵¹ new words. Some people have one specific new word in mind when they speculate about the end of capitalism, and this word is "blockchain."

⁴¹ Thomas Piketty, *Capital in the Twenty-First Century* (London: The Belknap Press Of Harvard University Press, 2014).

⁴² Ryan Cooper, "Why Everyone Is Talking about Thomas Piketty's Capital in the Twenty-First Century," (The Week Publications Inc, March 25, 2014), <https://theweek.com/articles/448863/why-everyone-talking-about-thomas-piketlys-capital-twentyfirst-century>.

⁴³ Deleuze and Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, 377.

⁴⁴ Mark Seem, "Introduction," in *Anti-Oedipus: Capitalism and Schizophrenia* (New York: Penguin, 2009).

⁴⁵ Félix Guattari, *The Three Ecologies* (London: Bloomsbury Academic, 2014), 34.

⁴⁶ Occupy Wall Street, "About Us," [Occupywallst.org](http://occupywallst.org/about/), 2011, <http://occupywallst.org/about/>.

⁴⁷ Charles Barthold, Stephen Dunne, and David Harvie, "Resisting Financialisation with Deleuze and Guattari: The Case of Occupy Wall Street," *Critical Perspectives on Accounting* 52 (May 2018): 13, <https://doi.org/10.1016/j.cpa.2017.03.010>.

⁴⁸ Massumi, *The Power at the End of the Economy*, 90.

⁴⁹ Ian Pindar and Paul Sutton, "Translators' Introduction," in *The Three Ecologies* (London: Bloomsbury Academic, 2014), 14.

⁵⁰ John Ehrenberg, "What Can We Learn from Occupy's Failure?," *Palgrave Communications* 3, no. 1 (July 4, 2017): 1, <https://doi.org/10.1057/palcomms.2017.62>.

⁵¹ George Orwell, "The Principles of Newspeak," in *1984* (London: Houghton Mifflin Harcourt, 2011).

3. Blockchain

In the last years, blockchain has experienced a rise in popularity, also prompted by Bitcoin's performance in the currency market. While some people are only concerned with new ways to increase their profits, others see blockchain as the most promising opportunity to effectively resist the pernicious effects of capitalism. In this chapter, I describe blockchain's basic features, such as decentralization, and its best-known financial implementations, such as cryptocurrencies and smart contracts. Blockchain-based money is not merely a digital currency, but rather, a set of protocols affecting social relations. Hence, its huge revolutionary potential could globally affect power structures. Can blockchain serve as a platform for collective individuation, despite its weaknesses?

3.1 The basics

A blockchain is a digital public ledger. Digital because it consists of numbers coded into computer software, public because it is globally broadcasted among individual users through the internet.¹ It is ultimately a sort of database with some special features, the most prominent being decentralization. Its records are linked together by means of cryptography, which also prevents their alteration with no need for a central authority. The database consists of a chain onto which new information can be appended by mutually distrustful parties; these can reach consensus thanks to a policy that determines the validity of the chain's status and automatically resolves any potential dispute (for a more detailed technical explanation, see Appendix A).

The basic blockchain principles were first developed back in 1991, when Stuart Haber and W. Scott Stornetta proposed a mechanism to time-stamp digital documents.² However, we must wait until 2008 to see a financial implementation, when a person using the name Satoshi Nakamoto published a paper describing a blockchain-based peer-to-peer version of electronic cash, now known as Bitcoin.³ In the following years, several cryptocurrencies based on the same mechanisms were developed, such as Ethereum, Litecoin, Cardano, and many others.⁴ Crucially, there are relevant differences between digital currencies, which are ultimately a digital representation of cash, and cryptocurrencies (see Figure 1). Since the latter are fully decentralized, they allow payments to transit from one party to another without intermediary financial institutions. The consensus mechanism prevents double-spending and time-stamps all the records, which are permanent and visible to anyone.⁵

¹ Malcolm Campbell-Verduyn, "What Are Blockchains and Why Are They Relevant to Governance in the Global Political Economy," in *Bitcoin and Beyond: Cryptocurrencies, Blockchains and Global Governance*, ed. Malcolm Campbell-Verduyn (London: Routledge, 2018), 1.

² Stuart Haber and W. Scott Stornetta, "How to Time-Stamp a Digital Document," *Journal of Cryptology* 3, no. 2 (1991), <https://doi.org/10.1007/bf00196791>.

³ Satoshi Nakamoto, "Bitcoin: A Peer-To-Peer Electronic Cash System." *Bitcoing.org*, 2008, <https://bitcoin.org/bitcoin.pdf>.

⁴ Luke Conway, "The 10 Most Important Cryptocurrencies Other than Bitcoin?," Investopedia.com, January 19, 2021, <https://www.investopedia.com/tech/most-important-cryptocurrencies-other-than-bitcoin/>.

⁵ Nathan Reiff, "Blockchain, Explained," Investopedia.com, February 1, 2020, <https://www.investopedia.com/terms/b/blockchain.asp>.

Coincidentally, in the same year Nakamoto’s paper was published, a severe financial shock took place globally. The housing bubble burst in the United States⁶ and a series of chain reactions led to an international banking crisis and a decline in credit availability. Yet, Bitcoin was able to survive and even flourish.⁷ One may think of it as a response to the financial crisis, but the bigger picture is different; cryptographers had been working on cryptocurrencies for decades and Nakamoto’s paper should not be seen as the reaction to a specific event, but rather, as the final step of a long journey, “a long-awaited solution to a long-standing problem.”⁸ Cryptocurrencies are not temporary remedies to transitory challenges; they entail a radical reframing of the functionalist understanding of money.

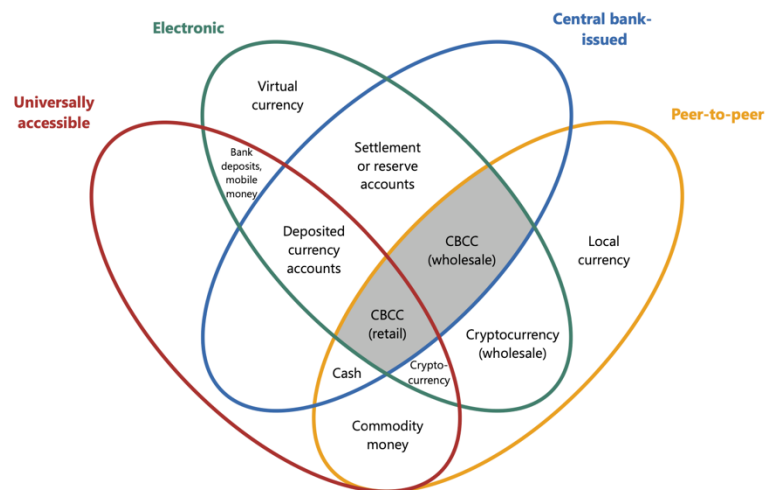


Figure 1. The money flower: a taxonomy of money.⁹

3.2 Revolutionary potential

For Jonathan Beller, blockchain is not a matter of exchanging goods or services. It is a technology that makes us deal with tokens, namely “protocols for denominating social relations.”¹⁰ Such relations are not limited to money transactions; hence, blockchain has implications far beyond

⁶ Jeff Holt, “A Summary of the Primary Causes of the Housing Bubble and the Resulting Credit Crisis: A Non-Technical Paper,” *The Journal of Business Inquiry* 8, no. 1 (2009): 120–29, <https://journals.uvu.edu/index.php/jbi/article/view/211>.

⁷ Moritz Hütten and Matthias Thiemann, “Moneys at the Margins: From Political Experiment to Cashless Societies,” in *Bitcoin and Beyond: Cryptocurrencies, Blockchains and Global Governance*, ed. Malcolm Campbell-Verduyn (London: Routledge, 2018), 25.

⁸ Noelle Acheson, “Bitcoin Was Not a Response to the Financial Crisis of 2008,” *CoinDesk.com*, January 24, 2021, <https://www.coindesk.com/bitcoin-financial-crisis>.

⁹ Morten Linnemann Bech and Rodney Garratt, “Central Bank Cryptocurrencies,” *BIS Quarterly Review* (September 17, 2017): 60, https://www.bis.org/publ/qtrpdf/r_qt1709f.htm.

¹⁰ Jonathan Beller, “Economic Media: Crypto and the Myth of Total Liquidity,” *Australian Humanities Review* 66 (May 2020): 218, http://australianhumanitiesreview.org/wp-content/uploads/2020/05/AHR66_17_Beller.pdf.

cryptocurrencies.¹¹ The expectations are so high that some argue that it will trigger “a monumental shift in the power structure of the world.”¹² For instance, the newly formed movement of Decentralized Finance (*DeFi*) revolves around “smart contracts,” computer programs that automatically execute the terms of agreements among parties, thanks to a built-in settlement system.¹³ The execution of financial obligations can be delegated to a decentralized technological environment. From a certain point of view, this is justifiable: digital media can now perform calculations much more efficiently than humans.

In 2016, Don and Alex Tapscott wrote a book called *Blockchain Revolution*, where they thoroughly describe the benefits of blockchain technologies. On a technical level, they argue, the system ensures networked integrity, preventing single members from acquiring a controlling position over the transactions’ records. The lack of central nodes of control and points of failure makes security extremely high. On a social level, the system preserves privacy, enforces individual rights (such as ownership), and favors inclusion, by lowering barriers to participation. Infinite transactions can take place among participants without intermediaries within disparate domains; there can be benefits for governments, businesses and even artists. Ultimately, blockchain is the basis for the creation of new substructures for a distributed economy, or a “distributed capitalism.”¹⁴ But is a new form of capitalism what we really need? If not, can blockchain still help us design alternative, non-capitalist forms of social organization?

Sometimes, the narratives surrounding blockchain technologies tend to be rhetorical. Don and Alex Tapscott’s enthusiasm could appear excessive especially to people like David Golumbia, who argues that blockchain is close to right-wing ideologies and libertarian market fundamentalism.¹⁵ Even Massumi acknowledges the risk of deceptive bracketing of the concept of capital,¹⁶ which can turn independence from evil banks into a mere “transactionalist liberation of self-interest.”¹⁷ This is probably still too far from the rupture with causality and the revolutionary line of escape that Deleuze and Guattari had hoped for. Since unconditional trust in decentralization might conceal or elide underlying tensions,¹⁸ we should contextualize the blockchain technologies we rely on within the narratives they arise from. This would force us to grasp “questions of ethics, values, social perspectives, causality, politics, psychology, and emotions.”¹⁹ Furthermore, such an approach can also help to detect ideology-independent issues, some of which are already well known.

¹¹ The Economist, “The Great Chain of Being Sure about Things,” *TheEconomist.com*, October 31, 2015, <https://www.economist.com/briefing/2015/10/31/the-great-chain-of-being-sure-about-things>.

¹² Greenberg, “An Interview with a Digital Drug Lord: The Silk Road’s Dread Pirate Roberts (Q&A).”

¹³ Don Tapscott and Alex Tapscott, *Blockchain Revolution* (New York: Penguin, 2018), 175.

¹⁴ *Ibid.*, 99.

¹⁵ David Golumbia, *The Politics of Bitcoin: Software as Right-Wing Extremism* (Minneapolis: University Of Minnesota Press, 2016), 9.

¹⁶ Massumi, 99 *Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 22.

¹⁷ Salvatore Iaconesi, “The Financialization of Life,” *Medium*, September 3, 2017, <https://startupsventurecapital.com/the-financialization-of-life-a90fe2cb839f>.

¹⁸ Jon Baldwin, “In Digital We Trust: Bitcoin Discourse, Digital Currencies, and Decentralized Network Fetishism,” *Palgrave Communications* 4, no. 1 (February 13, 2018): 4, <https://doi.org/10.1057/s41599-018-0065-0>.

¹⁹ Joshua Tanenbaum, “Design Fictional Interactions,” *Interactions* 21, no. 5 (September 1, 2014): 22–23, <https://doi.org/10.1145/2648414>.

3.3 Known issues

The cryptocurrencies' mining process is extremely energy-intensive, and this poses serious concerns in terms of environmental sustainability. Regardless, they have become increasingly popular. For instance, since it ensures anonymity, Bitcoin is often used on the darknet, where drugs and other illegal items are sold worldwide.²⁰ Furthermore, cryptocurrencies are often used for speculative trading,²¹ as people see them as a way to circumvent capital controls. Some argue that this is not necessarily a bad thing, since speculation is what keeps the market functioning properly.²² On the other hand, experts in economics and financial markets predict that there will soon be a collapse due to a speculative bubble.²³ The value of Bitcoin in the currency market has been growing at increasing speed, but the rise in prices is fueled by market sentiment and momentum, rather than solid underlying economic fundamentals.

In terms of security, Blockchain networks are extremely safe and hard to hack; however, any entity that manages to gain control of more than 51 percent of the mining operations could theoretically override actions performed by other miners, double-spend coins and even prevent new transactions from being confirmed.²⁴ Today, acquiring the necessary share of computing power on a global scale is not only extremely difficult, but also highly unlikely. However, quantum computers (able to perform certain tasks substantially faster than classical computers) are being developed with very promising results.²⁵ About a quarter of the Bitcoins in circulation are significantly exposed to a quantum attack.²⁶ Nevertheless, post-quantum encryption mechanisms are already under development; therefore, if appropriately updated, cryptocurrencies could return virtually inviolable.²⁷

Finally, in terms of privacy, we should mention that in 2013 during a congressional hearing on virtual currencies in the United States, it was acknowledged that - since cryptocurrencies' ledgers are public - it is often possible "to identify the people involved in transactions, or at least more possible than it was with transactions involving cash."²⁸

²⁰ Danny Bradbury, "Silk Road and Beyond: Bitcoin's Complex Relationship with the Dark Web," TheBalance.com, 2015, <https://www.thebalance.com/what-is-a-dark-market-391289>.

²¹ Miles Kruppa and Hannah Murphy, "DeFi Movement Promises High Interest but High Risk," Ft.com, December 30, 2019, <https://www.ft.com/content/16db565a-25a1-11ea-9305-4234e74b0ef3>.

²² Laura Shin, "Blockchains Are for Speculation, and That's a Good Thing," Forbes.com, December 20, 2017, <https://www.forbes.com/sites/laurashin/2017/12/20/blockchains-are-for-speculation-and-thats-a-good-thing/>.

²³ Dietmar Peetz and Gregory Mall, "Why Bitcoin Is Not a Currency but a Speculative Real Asset," *SSRN Electronic Journal*, 2017, 7. <https://doi.org/10.2139/ssrn.3098765>.

²⁴ Columbia, *The Politics of Bitcoin: Software as Right-Wing Extremism*, 38.

²⁵ Victor Tangermann, "This Quantum Desktop Computer Can Be Yours for Just \$5,000," Futurism.com, February 5, 2021, <https://futurism.com/the-byte/quantum-desktop-computer-5000>.

²⁶ Itan Barmes and Bram Bosch, "Quantum Computers and the Bitcoin Blockchain," Deloitte Netherlands, n.d., <https://www2.deloitte.com/nl/nl/pages/innovatie/artikelen/quantum-computers-and-the-bitcoin-blockchain.html>.

²⁷ Roger Huang, "Here's Why Quantum Computing Will Not Break Cryptocurrencies," Forbes.com, December 21, 2020, <https://www.forbes.com/sites/rogerhuang/2020/12/21/heres-why-quantum-computing-will-not-break-cryptocurrencies/>.

²⁸ Nathaniel Popper, *Digital Gold: Bitcoin and the inside Story of the Misfits and Millionaires Trying to Reinvent Money* (New York: Harper, 2016), 228.

3.4 Technological mediation

One of the main criticisms of contemporary capitalism concerns the unprecedented influence that financial intermediaries have gained over our lives,²⁹ accentuated by digitization. Mainstream financial narratives carry out something similar to a mental manipulation, through which people are pushed to conform to certain standards and embrace predetermined opinions.³⁰ Conversely, blockchain is passed off as a formidable tool for human emancipation.³¹ However, one could legitimately disagree: after all, we are living in a “machine-controlled economy”³² and in some sectors cryptofinance is becoming so pervasive that human involvement could be eradicated altogether.³³ This would amount to an apparent impotence, as hinted by Yuk Hui: In a preprogrammed context, such as the blockchain, people’s roles are always already anticipated.³⁴ Should we see this as a form of alienation?

The automation of monetary systems is something that Bruno Latour would call “delegation,” whereby humans give agency to non-human actors. He sees it as a distribution of competences in which technology takes over not only people’s actions and attitudes, but also values and ethics.³⁵ According to Madeleine Akrich, certain behaviors can be prescriptively imposed back: technical objects define the actors with which they interact.³⁶ This also applies to cryptocurrencies, as we are forced to blindly obey some procedures that detach us from financial processes, turning us into passive operators.³⁷ Since digitization is now subservient to desire production, we might even abandon the concept of delegation and think of blockchain-induced alienation as a form of misappropriation, a sort of theft of subjectivity.

A different approach could arise from a contemporary interpretation of the theories of Gilbert Simondon, who argued that alienation is ultimately attributable to people’s lack of knowledge about machines’ nature and essence.³⁸ Technical mediums can still foster transindividual relations and lead to the realization of people’s unrevealed potential both at the collective and individual level. Rather than technical objects, blockchain technologies should then be seen as technical platforms, able to bring people together and “organize them as a decentralized collective,”³⁹ possibly in ways unmediated by money. Since the individual subject is the result of the so-called process of individuation, never-ending

²⁹ Thomson and Dutta, “Financialisation: A Primer,” 2.

³⁰ Guattari, *The Three Ecologies*, 35.

³¹ DeFi Capital, “The Merits of Blockchain Technology,” n.d., <https://deficapital.com/merits-of-blockchain/>.

³² Tim Brouwer, “Proof-of-Transaction: The Materiality of Cryptocurrency,” *Research.hva.nl*, August 25, 2018, <https://research.hva.nl/en/publications/proof-of-transaction-the-materiality-of-cryptocurrency>.

³³ Kruppa and Murphy, “DeFi Movement Promises High Interest but High Risk.”

³⁴ Yuk Hui, *On the Existence of Digital Objects* (Minneapolis: University Of Minnesota Press, 2016), 157.

³⁵ Bruno Latour, “Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts,” in *Shaping Technology/Building Society: Studies in Sociotechnical Change*, ed. Wiebe E. Bijker and John Law (Cambridge: Massachusetts Institute Of Technology, 1992), 231–232.

³⁶ Madeline Akrich, “The De-Scriptio of Technical Objects,” in *Shaping Technology/Building Society: Studies in Sociotechnical Change*, ed. Wiebe E. Bijker and John Law (Cambridge: Massachusetts Institute Of Technology, 1992), 211.

³⁷ Brouwer, “Proof-of-Transaction: The Materiality of Cryptocurrency,” 5.

³⁸ Gilbert Simondon, *On the Mode of Existence of Technical Objects* (Minneapolis: Univocal Publishing, 2017), 16.

³⁹ Juho Rantala, “Blockchain as a Medium for Transindividual Collective,” *Culture, Theory and Critique* 60, no. 3–4 (October 2, 2019): 261, <https://doi.org/10.1080/14735784.2019.1694213>.

and always incomplete,⁴⁰ blockchain technologies could create the conditions for further individuations, by stimulating self-awareness and reflexivity.⁴¹ This can ultimately prompt the resolution of tensions and the achievement of an equilibrium in which human relations and habits are restructured and technologies are stabilized by the same network to which they belong.⁴² One question remains unanswered: how can blockchain favor individuation? As we will see in the next chapter, an interesting response has been provided by Massumi in his *99 Theses On The Revaluation Of Value*.

⁴⁰ David Scott, *Gilbert Simondon's "Psychic and Collective Individuation": A Critical Introduction and Guide* (Edinburgh: Edinburgh University Press, 2014), 53-54.

⁴¹ Rantala, "Blockchain as a Medium for Transindividual Collective," 259.

⁴² Hui, *On the Existence of Digital Objects*, 56-57.

4. Reinventing Value

We have seen that capitalism, enhanced by financialization, perpetuates debt and implements a form of subjugation grounded on the production of desire. Even though currency has become a constitutive element of social relations, a rupture with causality should take place on a pre-monetary level, and blockchain technologies may serve the purpose by virtue of their power to bring people together in ways unmediated by money. In this chapter, I analyze Massumi's call for a reinvention of value by means of blockchain. After describing affect as the distinctive feature of the qualitative field of life and framing it in terms of a differential relation of power, I address the main weaknesses and contradictions of Massumi's proposal. Finally, I argue that blockchain technologies are, as of yet, inadequate and in need for additional components to complement their computational dimension.

4.1 Affect

Capitalism's ability to produce desire and, thus, create needs, makes it reasonable to combine the flows of capital with the economy of the libido, as Deleuze and Guattari did.¹ The capitalist machine channels life activity "toward modes of existence and manners of relation propitious for the generation of profit."² Massumi embraces the view on capitalism proposed by Deleuze and Guattari, as made evident by his description of how "the qualitative field of life is economically appropriated and subsumed under the principle of perpetual quantitative growth."³ But what does this qualitative field refer to? For Massumi, it is a contagious "boost of vitality"⁴ entailing a shift from self-interest towards a dimension of collectivity. Crucially, in a non-capitalistic society, what links individuals would not involve profit; rather, it would rely on sentiments or, as Foucault calls them, "disinterested interests."⁵

Interactions among individuals consist of vital forces that belong to different levels of life. These constitute all the subjective factors pertaining to the immanent outside of capitalism⁶ that we can identify with the word "affect." Massumi, in an introductory chapter of *A Thousand Plateaus*, specifies that affect is not a personal feeling, but rather, the "ability to affect and be affected."⁷ This brings us to Baruch Spinoza, who defined someone's essence in terms of *puissance*,⁸ intended as what one can actually do based on the body's power of acting.⁹ Affection, then, can either increase or decrease such power. Nevertheless, an interaction is required between an affected body and an affecting one: again, there is a dimension of collectivity. Deleuze, interpreting Spinoza, proposes an analogy with

¹ Seem, "Introduction."

² Massumi, *99 Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 17.

³ *Ibid.*, 39.

⁴ Massumi, *The Power at the End of the Economy*, 69.

⁵ Foucault, *The Birth of Biopolitics. Lectures at the Collège de France, 1978-79*, 301.

⁶ Massumi, *99 Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 9.

⁷ Brian Massumi, "Notes on the Translation and Acknowledgments," in *A Thousand Plateaus: Capitalism and Schizophrenia* (Minnesota: University of Minnesota Press, 2005).

⁸ Gilles Deleuze, "Cours Vincennes: Power (Puissance), Classical Natural Right," (December 9, 1980), <https://www.webdeleuze.com/textes/20>.

⁹ Benedictus De Spinoza, *A Spinoza Reader: The Ethics and Other Works*, trans. Edwin Curley (Princeton: Princeton University Press, 1994), 154.

infinitesimal calculus: infinitely small quantities can be part of a differential relation, which “will present itself as the subsistence of the relation when the terms vanish.”¹⁰ The same applies to bodies affecting each other. Based on the very affection, their relation originates something new, a differential in power subsisting beyond the bodies.

As the economy is an open system, its subsistence is based on processes of appropriation of potentials that are to be found in the processual field of its immanent outside.¹¹ This is why, for capitalism, affect is an externality, namely a force that modulates economic logics without being part of them.¹² The encounter of two bodies mutually affecting each other results in a variation of power, but ultimately such an occasion is only completed by “the promissory note of incompleteness it envelops, in excess over its determinate character.”¹³ An occasion of experience, that is the moment in which affection occurs, can ground its course on “germinal forms left by the antecedent occasion among the detritus of its passing.”¹⁴ In other words, the encounter always results in a surplus of potential, which Massumi calls “surplus value of life,”¹⁵ part of a perpetual turnover of excess whereby every absorption is followed by a release. Capitalism systematically captures the surplus value of life and turns it into capitalist surplus value.¹⁶

For Massumi, then, the goal is to “take back” the qualitative field of life by recognizing affect’s irreducibly qualitative nature.¹⁷ To collectively and creatively counter the capitalistic capture, we need new social architectures of interaction¹⁸ that could be based on blockchain technologies. Yet, existing cryptocurrencies do not revalue value, but rather, they “repeat, each in its own way, essential characteristics of the capitalist equation.”¹⁹ Hence, a new digital environment for alter-economic experimentation²⁰ should be invented, beyond Bitcoin, to break up institutional structures and initiate a “revolutionary investment of desire”²¹ that could undermine capitalism. In this digital environment, creative collaboration would foster “different experiences of collectivity in action,”²² whose qualities are to be “registered”. But how can we register affect? For Massumi, it is a matter of “affective resonance,” through which differentials of power are given emphasis based on some criteria.²³

¹⁰ Gilles Deleuze, “Cours Vincennes - St Denis,” (February 17, 1981), <https://www.webdeleuze.com/textes/38>.

¹¹ Massumi, *99 Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 39.

¹² *Ibid.*, 9.

¹³ Brian Massumi, “Virtual Ecology and the Question of Value,” in *General Ecology: The New Ecological Paradigm*, ed. Erich Hörl (London: Bloomsbury, 2017), 352.

¹⁴ *Ibid.*, 356.

¹⁵ *Ibid.*, 362.

¹⁶ Deleuze and Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, 35.

¹⁷ Massumi, *99 Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 4.

¹⁸ Beller, “The Fourth Determination.”

¹⁹ Massumi, *99 Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 24.

²⁰ *Ibid.*, 103.

²¹ Deleuze and Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, 378.

²² Brian Massumi, A Cryptoeconomy of Affect, interview by Uriah Marc Todoroff, *The New Inquiry*, May 14, 2018, <https://thenewinquiry.com/a-cryptoeconomy-of-affect/>.

²³ Massumi, *99 Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 55.

4.2 Quantity vs. quality

For Massumi, qualitative differentials are characterized by the variability of their intensities, something that, he argues, we can try to register.²⁴ We would need an “affect-o-meter,”²⁵ a mechanism to computationally turn qualities into binary machine codes. Somehow, these qualities resemble what Nora Bateson calls “warm data,”²⁶ indicating the content of relational interdependencies. With a Simondonian approach, we could consider these affective qualities as weights containing potentials, virtualities²⁷ that constitute pre-individual realities, namely the basic ingredients for transindividuality. Across different energetic fields, there are disparities of potentials that coincide with disparities of information. When an event occurs, a new level of existence is attained qualitatively, although the corresponding discharge of energy is quantitatively measurable.²⁸

Massumi argues that the registering process is based on insistency,²⁹ a qualitative emphasis that refers to the aesthetic dimension of qualitative differences, non-reducible to quantities. Clearly, a different emphasis is given to different insistencies, but how can we qualitatively distinguish one differential power from another? It is a matter of degrees, as insistency is precisely the degree of a quality; a quality in higher degree claims more emphasis. For Massumi, a degree is not an intensive magnitude, which would imply a quantitative aspect, but rather an affective intensity, which expresses itself “in the aesthetic dimension of a purely qualitative difference of degree.”³⁰ I find it hard to classify the transformation of qualities into binary machine codes as a qualitative approach; in my opinion, Massumi’s appeal to the notion of degrees brings quantification back into the picture.

The references to the immanent outside of capitalism, described as “the irreducibly affective limit of a complexly relational field,”³¹ show that Massumi embraces a Deleuze-Guattarian perspective. However, Deleuze himself argues that degrees of affective intensity are characterized by an intrinsic distinction, independent from and prior to the extrinsic distinction between figures that constitute their extensive representation.³² Already in the Middle Ages, John Duns Scotus had argued that a form can have different “latitudes,” distinctions of degree that express variations of the quality of a form.³³ A quality contains infinite homogeneous parts “such that changes in the degree or variations in the intensities of quality can be explained by the addition or subtraction of these parts.”³⁴

What are the implications for Massumi’s attempt to design an affect-o-meter? Since changes in degree result from adding or subtracting homogeneous parts of a quality, variations of intensity have

²⁴ Ibid., 27.

²⁵ Massumi, *A Cryptoeconomy of Affect*.

²⁶ Nora Bateson, “Warm Data,” May 28, 2017, <https://norabateson.wordpress.com/2017/05/28/warm-data/>.

²⁷ Simondon, *On the Mode of Existence of Technical Objects*, 253.

²⁸ Brian Massumi, “Technical mentality” revisited: Brian Massumi on Gilbert Simondon, interview by Arne De Boever, Alex Murray, and Jon Roffe. *Xenopraxis*, 2009, http://xenopraxis.net/readings/massumi_technicalmentality.pdf.

²⁹ Massumi, *99 Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 91.

³⁰ Ibid., 93.

³¹ Massumi, *The Power at the End of the Economy*, 14.

³² Massumi, *99 Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 131.

³³ Simon Duffy, *Logic of Expression: Quality, Quantity and Intensity in Spinoza, Hegel and Deleuze*. (New York: Routledge, 2016), 126.

³⁴ Ibid., 127.

an inevitably quantitative account. This is incompatible with the claim that “affective resonance ultimately resists measure”³⁵ and “relation is always more lively than its systematic registering.”³⁶ Furthermore, although the numbers employed in a scale of intensity lack quantitative significance,³⁷ the intrinsic distinction between degrees makes them orderable, as they are characterized by positional differences. Hence, although differentials of power pertain to a purely aesthetic dimension, they are inevitably perceived on a quantitative scale of intensity that is constitutive of the notion of degree. For Deleuze, a number cannot “adequately express the nature of modes”³⁸ since it derives from an abstract way of thinking. However, different degrees of power are singular modal essences that belong to a scale of intensity, and as such, should be considered quantitatively distinguishable from one another.³⁹ The implication is that although flows of power should not be treated numerically, their registering would be inevitably quantitative. This is why Massumi’s approach cannot escape quantification.

4.3 Ecology and teleology

Massumi acknowledges that we cannot just walk out of capitalism; there is a “processual embrace”⁴⁰ binding together surplus value of life, capitalist attempts of appropriation and postcapitalist creative processes of resistance. Hence, we are all living an ontological condition of complicity with capitalism that cannot be avoided.⁴¹ Nevertheless, such a condition should be practiced strategically, in order to make escape prevail over capture.⁴² This strategic play Massumi calls “creative duplicity,”⁴³ which also involves “recognizing what works in the systems we work against.”⁴⁴ His new blockchain-based digital environment can be seen as a temporary autonomous zone capable of interaction with the existing economy.⁴⁵ But a question may arise: why is this needed? For Massumi, it is both because we do not have a choice, as “there is no position of purity from which to oppose capitalism,”⁴⁶ and because there are matters of practical self-sustenance that cannot prescind from the usual market logic.

How could the new digital environment enable creative duplicity? For Massumi, the only way would be to exploit “the two-sidedness of intensive magnitude”⁴⁷ by means of a digital membrane, that would create a separation between collective production of surplus values of life and the dominant economy.⁴⁸ Such a membrane would be characterized by a certain porosity, allowing some transactions between the two environments to take place, enabled by a new cryptocurrency. This would be, in turn, backed by the confidence built over time by keeping the creative process ongoing. Outside the

³⁵ Massumi, *99 Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 45.

³⁶ Ibid.

³⁷ Duffy, *Logic of Expression: Quality, Quantity and Intensity in Spinoza, Hegel and Deleuze*, 130.

³⁸ Gilles Deleuze, *Expressionism in Philosophy: Spinoza* (New York: Zone Books, 1992), 203.

³⁹ Duffy, *Logic of Expression: Quality, Quantity and Intensity in Spinoza, Hegel and Deleuze*, 139.

⁴⁰ Massumi, *99 Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 67.

⁴¹ Ibid.

⁴² Ibid., 68.

⁴³ Ibid., 69.

⁴⁴ Massumi, *A Cryptoeconomy of Affect*.

⁴⁵ Massumi, *99 Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 88.

⁴⁶ Ibid.

⁴⁷ Ibid., 124.

⁴⁸ Massumi, *A Cryptoeconomy of Affect*.

membrane, this new cryptocurrency would fulfill the traditional function of money, so that the project could access those goods and services that necessarily need to be sourced from the dominant economy, such as food, travel, accommodation for participants, and so on.⁴⁹

While I recognize that “there is no room for purism,”⁵⁰ I argue that this idea of creative duplicity has some weaknesses. Firstly, as Beller puts it, Massumi’s digital membrane should be “aware of capital’s savage granularity but still capable of insulating a cooperative endeavor from capital’s toxicity.”⁵¹ This is technologically rather utopian. But even if we could design such a digital membrane, it would embody a form of delegation, whereby technologies would define the actors with which they interact.⁵² There would be a high risk of blockchain-induced alienation (see Chapter 3.4 Technological mediation) and creative encounters could be significantly hindered. Secondly, there is a contradiction in terms of teleology. Massumi declares that “no product separate from the process would guide the process teleologically” and “emergent collectivity would be valued as the product.”⁵³ In other words, the project’s goal should be the creative process, and not the creative product. However, he also says that the project aims to “find ways of processually coupling with the existing economy in order to sustain itself.”⁵⁴ Hence, I ultimately agree with Miriam Tola when she argues that Massumi’s new cryptocurrency appears as a way to “monetize affective intensities.”⁵⁵ The participants’ legitimate ambition to find ways to keep their project ongoing risks turning the creative product into a new goal.

What Massumi could and should try to achieve is not a return to quality based on liberation from quantification, as this would prevent him from “registering” in the first place and his affect-o-meter would be useless. Rather, he could aim to liberation from enumeration, as quantities can be expressed in a non-numerical way. In this case, however, the registering process could not take place within a purely computational environment. Since, in general, cryptocurrencies are more akin to financial speculation than cultural relation,⁵⁶ we need to achieve a more effective (social, rather than technological) insulation from capitalism, and become able to deal with quantities with no need to make use of numbers. Blockchain technologies are, as of yet, inadequate and in desperate need for new components to complement their computational dimension (see Appendix B Alternative paths).

⁴⁹ Massumi, 99 *Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 127.

⁵⁰ *Ibid.*, 130.

⁵¹ Jonathan Beller, “T100 Communism Must Wager on Economic Media by Brian Massumi,” *Cultural Critique* 110, no. 1 (2021): 229, <https://doi.org/10.1353/cul.2021.0008>.

⁵² Akrich, “The De-Description of Technical Objects,” 211.

⁵³ Massumi, 99 *Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 115.

⁵⁴ *Ibid.*, 123.

⁵⁵ Miriam Tola, “Surplus-Value of Life and Regimes of Valuation,” *Dialogues in Human Geography* 10, no. 3 (January 6, 2020): 403, <https://doi.org/10.1177/2043820619895876>.

⁵⁶ Beller, “The Fourth Determination.”

5. Post-value challenges

We have seen that Massumi's proposal has some weaknesses, mainly due to blockchain's computational nature and the difficult coexistence between old and new socio-economic models. Nevertheless, let us assume that we can, somehow, reinvent value and register qualitative intensities in a non-numerical way. Would this mean that blockchain has been successful in enabling us to resist the pernicious effects of capitalism? In this chapter, I show that other issues, that do not concern the conception of value, are still relevant and should be carefully considered.

5.1 Trust

I have previously argued that blockchain, and specifically Bitcoin, was not a direct response to the global financial crisis in 2008, but rather a solution to a long-standing problem (see Chapter 3.1 The basics). Primavera De Filippi claims the opposite, but with an additional connection to what she calls the "trust crisis."¹ Trust plays indeed a key role. In the Middle Ages, financial institutions grounded their power on new forms of money that slowly destroyed "the local systems of trust that had allowed small-scale communities across Europe to operate largely without the use of metal currency."² Now, it is undeniable that the international banking crisis and the consequent decline in credit availability were complemented and possibly enhanced by an increasing loss of trust in governmental and financial institutions. If we were to embrace the simplistic narrative that frames big banks as enemies, we might say that they were defeated with their own weapons. This narrative, however, could also bring us to think that what we need is a "move towards a world in which we trust no one."³

Let us suppose, *ab absurdum*, that the best way to deal with mistrust is to eliminate the need for trust in the first place. Blockchain technology seems to go in this direction, as it presents itself as a potential solution to trust issues among transactors. Bitcoin, for instance, is described as "a system for electronic transactions without relying on trust."⁴ We do not need to trust intermediary financial institutions because they are completely absent, and neither have we to trust the parties with which we interact, because the consensus mechanism makes it unnecessary (see Appendix A). Don and Alex Tapscott explain that, whilst before blockchain trust in transactions derived from individuals and intermediaries, now it derives from the network, which is itself the foundation of trust.⁵ We could speak of "built-in trust." Nevertheless, media representations are quite fairytale: authoritative magazines such as *The Economist* defined blockchain as "The Great Chain of Being Sure about Things,"⁶ as if it provides direct access to the absolute truth. Clearly, this is not the case.

¹ Primavera De Filippi, Morshed Mannan, and Wessel Reijers, "Blockchain as a Confidence Machine: The Problem of Trust & Challenges of Governance," *Technology in Society* 62 (August 1, 2020): 1, <https://doi.org/10.1016/j.techsoc.2020.101284>.

² Graeber, *Debt: The First 5,000 Years*, 373.

³ Ethan Zuckerman, "The Economics of Mistrust," in *The End of Trust*, ed. Daniel Levin Becker, Dave Eggers, and Claire Boyle (San Francisco: McSweeney's Publishing, 2018).

⁴ Nakamoto, "Bitcoin: A Peer-To-Peer Electronic Cash System," 8.

⁵ Tapscott and Tapscott, *Blockchain Revolution*, 85.

⁶ The Economist, "The Great Chain of Being Sure about Things."

Currencies' acceptance is based on the expectation that others would do the same (see Chapter 2.1 Money). Why should it be different for cryptocurrencies? In fact, it is not. Blockchain also creates "shared expectations with regard to the manner in which it operates, and the procedural correctness of its operations."⁷ Hence, trust is not at all unnecessary; for instance, Bitcoin users must trust the integrity of its underlying system⁸ and all involved actors, such as miners and programmers. As explained by Jon Baldwin, we also need to trust algorithms and encryption software.⁹ A blockchain-based network does not operate in a self-contained manner, but rather, it is a hybrid system "made up of both technical and social components."¹⁰ As Langdon Winner puts it, technology's impact on society "must be understood with reference to the social actors able to influence which designs and arrangements are chosen."¹¹ Blockchain reduces the need for trust, as it enhances transparency and accountability,¹² but speaking of trustless technology is nonetheless grossly misleading.

Regardless, is a trustless technology desirable? In our daily life we are normally free to decide if and when to trust each other, but with blockchain we would be compelled to trust an algorithm, and once we entered the system, our free choice would disappear. Algorithms would themselves embody trust, in a proceduralized way.¹³ For Salvatore Iaconesi, built-in (proceduralized) trust would come at the expense of a culture of co-responsibility between human beings.¹⁴ If we look at Massumi's attempt to take back the qualitative field of life, can we really believe that mutual affection and surplus value of life are compatible with proceduralized trust? Probably not. Ultimately, the solution to mistrust is not to eliminate trust, both because it is impossible, and because the (vain) attempts to do so are detrimental to human co-responsibility. Rather, we should look for ways to creatively embrace mistrust. This does not mean that there is no room for blockchain, quite the contrary; we may even keep using it as we are used to. What needs to change is the reason why we use it. For Ethan Zuckerman, our goal should be to "build systems that help us trust better and more wisely."¹⁵

5.2 Tokenmania

Blockchain technologies are often depicted as "new avenues for experimentation toward the autonomy of art [...] from the extractive logic of financial markets."¹⁶ This is reflected in Massumi's conception of the aesthetic dimension: affective interactions are improvisational, free from existing

⁷ De Filippi, Mannan, and Reijers, "Blockchain as a Confidence Machine: The Problem of Trust & Challenges of Governance," 2.

⁸ Popper, *Digital Gold: Bitcoin and the inside Story of the Misfits and Millionaires Trying to Reinvent Money*, 55.

⁹ Baldwin, "In Digital We Trust: Bitcoin Discourse, Digital Currencies, and Decentralized Network Fetishism," 3.

¹⁰ De Filippi, Mannan, and Reijers, "Blockchain as a Confidence Machine: The Problem of Trust & Challenges of Governance," 7.

¹¹ Langdon Winner, "Do Artifacts Have Politics?," *Daedalus* 109, no. 1 (1980): 134, <http://www.jstor.com/stable/20024652>.

¹² Tapscott and Tapscott, *Blockchain Revolution*, 84.

¹³ Iaconesi, "The Financialization of Life."

¹⁴ Ibid.

¹⁵ Zuckerman, "The Economics of Mistrust," 108.

¹⁶ Laura Lotti, "Financialization as a Medium: Speculative Notes on Post-Blockchain Art," in *MoneyLab Reader 2: Overcoming the Hype*, ed. Geert Lovink, Patricia de Vries, and Inte Gloerich (Amsterdam: Institute of Network Cultures, 2018), 93.

norms of society, and more akin to beauty, wonder, and adventure.¹⁷ Whilst tokenization ultimately amounts to a socio-financial practice, it could also be a way for artists to harvest the value of their work.¹⁸ However, we should not forget tokenization's reductive nature. As Massumi puts it, in the registering of the qualitative by the quantitative "there is much that escapes conversion"¹⁹ and that remains unaccounted for. In his hypothetical affect-o-meter, he even envisioned thresholds to ensure that the capturing of the creative advance gives special weight to certain passages of forces.²⁰ However, I believe that the choice of these thresholds is detrimentally arbitrary: if certain forces are not given enough weight, they could dissolve. This could affect not only the registering process, but also the creative interaction itself, thereby turning a risk of reduction into a risk of manipulation. Furthermore, Massumi explicitly speaks of a translation of "qualitative flows into a numerical expression"²¹ and of an "accounting smart contract that allocates tokens based on how much someone contributes."²² However noble its purposes may be, this brings back numbers in a quite capitalism-resembling way.

The transposition of affect into a cryptocurrency takes for granted that everything is tokenizable. Nowadays, tokens refer not only to traditional assets such as bonds, but also to artworks, sports teams and even celebrities.²³ With tokenization, all kind of assets can be divided into small ownership stakes, so that they can be "fractionally owned by multiple parties."²⁴ I call this fascination with tokens "tokenmania," a phenomenon entailing dangerous resemblances with capitalism. As Rachel O'Dwyer puts it, blockchain "proceeds from a perspective that already presumes a neoliberal subject and an economic mode of governance."²⁵ An evocative description is provided by Iaconesi, who speaks of transactionalization of life: "all the elements of our lives are progressively turning into transactions."²⁶ Our emotions and relationships are framed as parts of a procedure, and as such, tokenizable. On the one hand, a "tokenized mode of economic life"²⁷ offers opportunities to approach the financial field from a practice-oriented perspective and embrace self-consciously performative economics. On the other hand, it could degenerate into hyper-tokenization, when the uncritical adoption of tokens makes it impossible to distinguish between algorithms and the fabrics of society.²⁸ Ultimately, this exacerbates the same capitalistic logic that blockchain is supposed to resist, by assuming it as the "basis of token-based economies."²⁹

¹⁷ Massumi, *99 Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 113.

¹⁸ Ibid.

¹⁹ Ibid., 49

²⁰ Ibid., 125.

²¹ Massumi, *A Cryptoeconomy of Affect*.

²² Massumi, *99 Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 108.

²³ Sparsh Singhal, "What Can Be Tokenized? The Tokenization of Everything," Hackernoon.com, August 9, 2019, <https://hackernoon.com/what-can-be-tokenized-the-tokenization-of-everything-mw1ay3bk7>.

²⁴ Ibid.

²⁵ Rachel O'Dwyer, "The Revolution Will (Not) Be Decentralised: Blockchain-Based Technologies & the Commons," Commons Transition, June 11, 2015, <http://commonstransition.org/the-revolution-will-not-be-decentralised-blockchains/>.

²⁶ Iaconesi, "The Financialization of Life."

²⁷ Francis Jervis, "From Economization to Tokenization: New Forms of Economic Life On-Chain," *SSRN Electronic Journal*, 2019, 1. <https://doi.org/10.2139/ssrn.3344748>.

²⁸ Lotti, "Financialization as a Medium: Speculative Notes on Post-Blockchain Art," 93.

²⁹ Ibid.

5.3 Transgression and power

For Iaconesi, the transactionalization of life has a crucial implication: it is incompatible with informality and transgression.³⁰ Why is this so relevant? Foucault argued that transgression enables individuals to subversively transform themselves and resist subjugation by challenging imposed limits; not aggressively, but rather creatively.³¹ Seventeen years after *Anti-Oedipus*, which called for “a revolutionary line of escape,”³² Guattari specifically indicated the need to cultivate dissensus.³³ Yet, paradoxically, blockchain is ultimately a consensus mechanism. Although it could create the conditions for individuation as intended by Simondon (see Chapter 3.4 Technological mediation), we should not forget that such a process is never-ending and always incomplete.³⁴ Hence, although blockchain is indeed a new revolutionary way of organizing the world, it should not prevent, once adopted, the emergence of further ways, alternative approaches, different interpretations. Deleuze and Guattari once claimed that we risk turning into “intrinsic component pieces”³⁵ of a larger machine – the machine being the television. Can we make sure, now, that the same danger does not involve blockchain as well?

I have criticized neo-liberalism for the financial and corporeal subjugation it entails (see Chapter 2.3 Governance), but blockchain is not necessarily different. It could be a mere modernization of the means, while the underlying mechanisms remain unchanged. This is the theory of Grant Bollmer, who points at digital culture’s normalizing power: the media we use carry the “specifications for the proper conduct one should internalize in a world defined by network technologies.”³⁶ Following this approach, we could say that blockchain users are “trained” (I use here the same verb used by Lazzarato to describe people trained to promise to honor their debts) to perpetuate connections and flows within the network. Ultimately, this would amount to an imposition of nodal membership and consumption. Within such an environment, can subjugated groups become subject-groups as intended by Deleuze and Guattari? While describing the desire-producing social machine, they argued that “portions of the tasks to be performed are distributed” with the ultimate goal to generate “a residual share for each member.”³⁷ There is, then, little difference from how Bitcoin is organized: the consensus mechanism makes use of hundreds of thousands of participants who verify and authenticate all the transactions occurring globally (see Appendix A), and they are awarded incentives in the form of cryptocurrency.

For Deleuze, the Foucaultian disciplinary societies are being replaced with societies of control.³⁸ Blockchain can be seen as a symptom of this transformation, as the ordering application of Bitcoin has,

³⁰ Iaconesi, “The Financialization of Life.”

³¹ Julie Allan, “Foucault and the Art of Transgression,” in *Rethinking Inclusive Education: The Philosophers of Difference in Practice* (Dordrecht: Springer, 2008), 92.

³² Deleuze and Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, 377.

³³ Guattari, *The Three Ecologies*, 50.

³⁴ Scott, *Gilbert Simondon’s “Psychic and Collective Individuation”: A Critical Introduction and Guide*, 43.

³⁵ Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (Minnesota: University of Minnesota Press, 2005), 458.

³⁶ Grant Bollmer, *Inhuman Networks: Social Media and the Archaeology of Connection* (New York: Bloomsbury Academic, 2018), 6.

³⁷ Deleuze and Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, 141-142.

³⁸ Gilles Deleuze, “Postscript on the Societies of Control,” *The MIT Press* 59 (1992): 4, <http://www.jstor.org/stable/778828>.

for instance, the power to control economics.³⁹ More in general, cryptography has the power to order its inputs according to a particular logic, thereby representing the world based on the “politics of ordering”⁴⁰ that are adopted. As a consequence, I agree with Iaconesi when he says that blockchain “is all about distribution of power.”⁴¹ Massumi acknowledges this underlying issue and he even describes how power dynamics are made explicit: Bitcoin favors those who own the means of production, namely, technological equipment.⁴² When we attempt creative encounters, we could suffer from issues of access, as our affective interaction depends on the resources needed to sustain our participation. Not everybody has such resources, and this is why Iaconesi turns a problem of technological equipment into a problem of liberties and fundamental rights.⁴³ A plausible verdict is provided by Baldwin: “what looks equal, democratic, and decentered in the diagram of the network [...] conceals a massive distortion of power and power relations.”⁴⁴ Hence, the idea to circumvent economic power through blockchain may be a mere illusion.

5.4 Network fetishism

Where does blockchain draw its charm from? If we look at cryptocurrencies, their “overarching value proposition”⁴⁵ is decentralization, affecting the creation, validation and secure storage of economic transactions. It is crucial to bear in mind that we are not dealing with coins, but rather, with a set of protocols. Blockchain triggers a change of paradigm: central issuance of money becomes decentralized issuance of “moneyness,”⁴⁶ whereby all kinds of assets, through tokenization, acquire some attributes of money. According to Don and Alex Tapscott, all organizations should prepare for an inevitable future in which trade, ownership and liquidity will be decentralized.⁴⁷ The fact that everything occurs within a network is often considered a sufficient reason to assume actual decentralization and democracy. The lack of a central command (see Figure 2) is “supposed to facilitate non-hegemonic, noncoercive, individualistic freedom of movement, while encouraging some kind of distributed representation and engagement.”⁴⁸ Decentralization is often seen as inherently detrimental to the established power structures, and therefore, as revolutionary and socially transformative; even anti-globalization movements tend to ground their discourse on the spirit of networks.⁴⁹ However, this

³⁹ Quinn Dupont, “The Politics of Cryptography: Bitcoin and the Ordering Machines,” *Journal of Peer Production* 9/10, no. 4 (January 2014), <http://peerproduction.net/issues/issue-4-value-and-currency/peer-reviewed-articles/the-politics-of-cryptography-bitcoin-and-the-ordering-machines/>.

⁴⁰ Ibid.

⁴¹ Iaconesi, “The Financialization of Life.”

⁴² Massumi, 99 *Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 21.

⁴³ Iaconesi, “The Financialization of Life.”

⁴⁴ Baldwin, “In Digital We Trust: Bitcoin Discourse, Digital Currencies, and Decentralized Network Fetishism,” 6.

⁴⁵ Ying-Ying Hsieh, Jean-Philippe Vergne, and Sha Wang, “The Internal and External Governance of Blockchain-Based Organizations,” in *Bitcoin and Beyond: Cryptocurrencies, Blockchains and Global Governance*, ed. Malcolm Campbell-Verduyn (London: Routledge, 2018), 53.

⁴⁶ Jonathan Beller et al., “Rethinking Money and Credit in a Cryptoeconomy: Securing Liquidity without the Need for Central Control of Issuance” (2020): 2, <https://assets.pubpub.org/mqc2esfj/21581340206367.pdf>.

⁴⁷ Tapscott and Tapscott, *Blockchain Revolution*, 59.

⁴⁸ Baldwin, “In Digital We Trust: Bitcoin Discourse, Digital Currencies, and Decentralized Network Fetishism,” 5.

⁴⁹ Eran Fisher, *Media and New Capitalism in the Digital Age* (New York: Palgrave Macmillan, 2010), 225.

assumption reveals a utopian, or even myopic, understanding of the nature of decentralized networks, which also have problems.

Decentralization is claimed to be superior regardless of its specific historical function, underlying politics and ideologies.⁵⁰ Yet, even post-industrial capitalism has a tendency to decentralize its sites of power.⁵¹ In other words, decentralization is not necessarily the right response to capitalism, which is somehow already decentralized and, as Deleuze and Guattari would say, feeds itself by decentralizing (deterritorializing) previously centralized (territorialized) social arrangements.⁵² Networks should not be considered *a priori* the solution to everything; describing them as autonomous and endowed with a life of their own risks concealing economic and social exploitation.⁵³ To unconditionally prefer decentralization over any potential alternative could be a form of fetishism, whereby network technologies are naturalized, theologized, and teleologized.⁵⁴ In Deleuze-Guattarian terms, network fetishism might occur when “there is an unconscious libidinal investment of desire that does not necessarily coincide with the preconscious investments of interest.”⁵⁵ This could make us look at networks with genuine interest even if these were the causes of our oppression.

In *A Thousand Plateaus*, tree-like centered structures are contrasted with acentered networks with interchangeable individuals; hence, one could argue that rhizomes were a visionary anticipation of blockchain. However, rhizomes pertain to “a map that is always detachable, connectable, reversible, modifiable, and has multiple entryways and exits and its own lines of flight.”⁵⁶ This is clearly not the case for the blockchain, which is characterized by preestablished paths and organizing memories. Networks are not only, and not always, indicators of freedom and lack of coercion. They also produce “stoppages, closures, dark spots.”⁵⁷ Nodes enjoy “emancipation without end, but also without exit,”⁵⁸ and this should make us reflect on the materiality of the blockchain. Ideological discourses tend to hide the infrastructure behind cryptocurrencies, characterized by bottlenecks and tensions among the network’s nodes, which need some alignment to keep the blockchain “existing as a coherent entity.”⁵⁹

Networks are often used to map complex phenomena into abstract models, but we should not try to “remake the world in terms of our network theories;”⁶⁰ this would produce a flattening of reality, for our models can only be simplifications. Networks challenge us to “think in an elemental fashion,”⁶¹ as their dynamics also involve unhuman aspects, sometimes not subject to human control. This entails the

⁵⁰ Ibid.

⁵¹ Guattari, *The Three Ecologies*, 47

⁵² Deleuze and Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, 34.

⁵³ Baldwin, “In Digital We Trust: Bitcoin Discourse, Digital Currencies, and Decentralized Network Fetishism,” 6.

⁵⁴ Fisher, *Media and New Capitalism in the Digital Age*, 185.

⁵⁵ Deleuze and Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, 345.

⁵⁶ Deleuze and Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, 21.

⁵⁷ Julieta Aranda, Brian Kuan Wood, and Anton Vidokle, *The Internet Does Not Exist* (Berlin: Sternberg Press, 2015), 7.

⁵⁸ Ibid.

⁵⁹ Francesca Musiani, Alexandre Mallard, and Cécile Méadel, “Governing What Wasn’t Meant to Be Governed,” in *Bitcoin and Beyond: Cryptocurrencies, Blockchains and Global Governance*, ed. Malcolm Campbell-Verduyn (London: Routledge, 2018), 151.

⁶⁰ David M. Berry, “The Poverty of Networks,” *Theory, Culture & Society* 25, no. 7–8 (December 2008): 365, <https://doi.org/10.1177/0263276408097813>.

⁶¹ Alexander R. Galloway and Eugene Thacker, *The Exploit: A Theory of Networks* (Minneapolis: University Of Minnesota Press, 2007), 157.

risk to assume that human and social interventions are ultimately futile, and power relations could therefore become depoliticized.⁶² But, as Gary Zhexi Zhang puts it, “the prospect of decentralizing control does not absolve us of the hard work of politics, and blockchain has so far failed to transfer power to ‘We, the people’, whatever the white papers might claim. Political economy cannot be replaced by technology alone.”⁶³

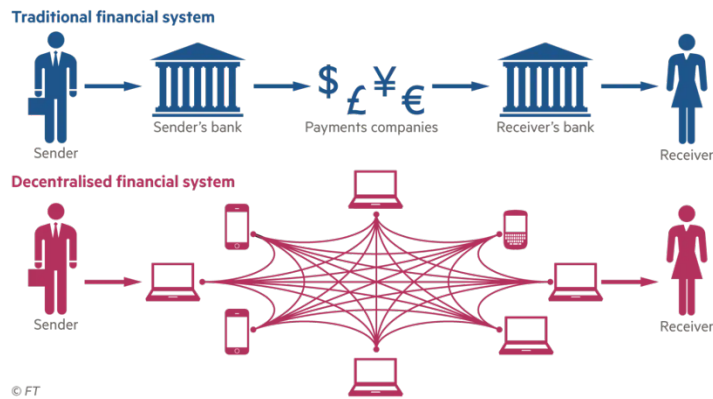


Figure 2. How decentralized finance works.⁶⁴

⁶² Fisher, *Media and New Capitalism in the Digital Age*, 209.

⁶³ Gary Zhexi Zhang, “Systems Seduction: The Aesthetics of Decentralisation,” *Journal of Design and Science*, July 16, 2018, 8. <https://doi.org/10.21428/2bfc3a68>.

⁶⁴ Kruppa and Murphy, “DeFi Movement Promises High Interest but High Risk.”

6. Conclusions

In this thesis, I have critically analyzed financialization and its connections with capitalism and debt mechanisms. I have investigated the emergence of money, showing that the acceptance of a specific currency is discretionary and based on the expectation that others would do the same.¹ Furthermore, I have argued that if we accept Graeber's theory that the emergence of money precedes trade, market transactions and barter,² the rupture with causality that could free us from capitalism should take place on a pre-monetary level. For Deleuze and Guattari, the capitalist system is ultimately grounded on mechanisms of perpetuation of debt, which triggers "an internalization of the creditor-debtor relation."³ I have argued that, as money often contributes to the exacerbation of social injustices, it still makes sense to look for alternative monetary frameworks. However, since we are now living in a world characterized by neo-liberalism, in which the sovereign State is replaced by the economic State⁴ and all realms of social life become submissible and eventually submitted to the economic approach,⁵ fighting for the reduction of inequalities has become insufficient to solve the problem at its roots. Capitalism should be actively resisted in more fundamental and revolutionary ways.

Furthermore, I have investigated the revolutionary potential of blockchain with respect to economies and societies. Blockchains, thanks to decentralization, allow payments to transit from one party to another without intermediary financial institutions (see Appendix A). More in general, blockchain technologies have implications far beyond cryptocurrencies⁶ and they could become the basis for the creation of new substructures for a distributed economy.⁷ Some people argue that blockchain represents the most promising opportunity to effectively resist the pernicious effects of capitalism. However, independence from evil banks is probably still too far from the rupture with causality that Deleuze and Guattari had hoped for. Blockchain is passed off as a formidable tool for human emancipation,⁸ but it is after all a preprogrammed context, where people's roles are always already anticipated.⁹ Nevertheless, I have argued that such apparent impotence can be reframed based on a contemporary interpretation of Simondon's theories. Blockchain technologies should be seen as technical platforms that can foster transindividual relations and lead to the realization of people's unrevealed potential both at the collective and individual level.

The core part of this thesis is my evaluation of the viability of ongoing experimental implementations of blockchain technologies in their attempt to resist capitalism. Specifically, among these, the idea proposed by Massumi, which requires us to "reinvent" the concept of value within broader collective arrangements. Massumi calls for a qualitative account of affect, intended as a

¹ Goldberg, "Famous Myths of 'Fiat Money,'" 957.

² Graeber, *Debt: The First 5,000 Years*, 58.

³ Deleuze and Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, 218.

⁴ Lazzarato, "Neoliberalism, the Financial Crisis and the End of the Liberal State," 71.

⁵ Vogl, "The Sovereignty Effect," 148.

⁶ The Economist, "The Great Chain of Being Sure about Things."

⁷ Tapscott and Tapscott, *Blockchain Revolution*, 99.

⁸ DeFi Capital, "The Merits of Blockchain Technology."

⁹ Hui, *On the Existence of Digital Objects*, 157.

variation in power, and he aims to create a blockchain-based social architecture of interaction¹⁰ to counter the capitalistic capture collectively and creatively. I have criticized this project by emphasizing its main weaknesses and contradictions. First, since variations in power entail different degrees of intensity, their orderability makes it impossible to avoid quantification. As argued by Deleuze, different degrees of power belong to a scale of intensity, and therefore, they should be considered quantitatively distinguishable from one another.¹¹ Second, Massumi argues that, within his new digital environment, people should exploit “the two-sidedness of intensive magnitude”¹² by means of a digital membrane, that would create a separation from the dominant economy.¹³ While I believe that such a digital membrane is technologically rather utopian, I also think that it would embody a form of delegation, entailing a risk of blockchain-induced alienation that could significantly hinder any creative encounter. Third, Massumi declares that “no product separate from the process would guide the process teleologically” but he also says that the project aims to “find ways of processually coupling with the existing economy in order to sustain itself.”¹⁴ This contradiction I called an unwanted-yet-present teleology, dictated by the technological platform’s need for self-preservation, which is incompatible with what Foucault called “disinterested interests.”

Finally, I have argued that even if we manage, somehow, to reinvent value and register qualitative intensities, other issues will remain to be solved. First, although blockchain technologies present themselves as a potential solution to issues of trust, we cannot speak of trustless technology, as blockchain users still need to trust the integrity of the underlying system¹⁵ and all involved actors. Proceduralized trust would come at the expense of a culture of co-responsibility between human beings.¹⁶ Rather, we should look for ways to creatively embrace mistrust. Second, nowadays everything is tokenizable, to the extent that we may speak of a “tokenmania,” whereby the uncritical adoption of tokens makes it hard to distinguish between algorithms and the fabrics of society.¹⁷ Ultimately, this exacerbates the same capitalistic logic that blockchain is supposed to resist, by assuming it as the “basis of token-based economies.”¹⁸ Third, when “all the elements of our lives are progressively turning into transactions,”¹⁹ informality and transgression could become a problem. Guattari specifically indicated the need to cultivate dissensus,²⁰ but paradoxically, blockchain is a consensus mechanism that exerts an imposition of nodal membership and consumption. Therefore, the idea to circumvent economic power through blockchain may be a mere illusion. Fourth, decentralization is often claimed to be superior regardless of its specific historical function, underlying politics and ideologies.²¹ However, it is not necessarily the right response to capitalism, which is somehow already decentralized. To unconditionally prefer decentralization over any potential alternative could be a form of fetishism,

¹⁰ Beller, “The Fourth Determination.”

¹¹ Duffy, *Logic of Expression: Quality, Quantity and Intensity in Spinoza, Hegel and Deleuze*, 139.

¹² Massumi, 99 *Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 124.

¹³ Massumi, *A Cryptoeconomy of Affect*.

¹⁴ Massumi, *The Power at the End of the Economy*, 123.

¹⁵ Popper, *Digital Gold: Bitcoin and the inside Story of the Misfits and Millionaires Trying to Reinvent Money*, 55.

¹⁶ Iaconesi, “The Financialization of Life.”

¹⁷ Lotti, “Financialization as a Medium: Speculative Notes on Post-Blockchain Art,” 93.

¹⁸ *Ibid.*

¹⁹ Iaconesi, “The Financialization of Life.”

²⁰ Guattari, *The Three Ecologies*, 50.

²¹ Fisher, *Media and New Capitalism in the Digital Age*, 225.

whereby network technologies are naturalized, theologized, and teleologized.²² As Gary Zhexi Zhang puts it, “the prospect of decentralizing control does not absolve us of the hard work of politics.”²³

Ultimately, cryptocurrencies are more akin to financial speculation than cultural relation²⁴ and blockchain technologies are in desperate need for new components to complement their computational dimension. Failing to recognize these limitations can prompt a shift from the opportunity to use blockchain to reinvent value towards a fervor to reinvent value to use blockchain. Therefore, I present in Appendix B three considerations that could serve as the basis for the exploration of alternative paths.

²² Ibid., 185.

²³ Zhang, “Systems Seduction: The Aesthetics of Decentralisation,” 8.

²⁴ Beller, “The Fourth Determination.”

Appendices

Appendix A. Blockchain technical addendum

To really understand what blockchain is, we should think of it as a database. Its own name suggests how it is structured: as a back-linked “chain of blocks,” each containing some data. Blockchain’s goal is to make sure that such data are not only shared among the members of a network, but also constantly validated, through a consensus mechanism. Let us suppose that we want to record on a blockchain platform some exchanges of assets among individuals, with no currency involved. Supposedly, all involved parties are members of a blockchain-based network. Transaction A occurs before transaction B, and they both need to be translated into code, in a way that depends on the type of blockchain. The code would typically include some information to univocally identify both the involved parties and the assets that are being exchanged, as well as an indication of when the transaction exactly takes place.

The first block in our newly born chain will record transaction A. It is called “genesis block”¹ as it has no links to previous blocks. Block 1 will contain information about the transaction that is being recorded, and its hash, a string of characters that identifies the block and all its contents. Since it is always unique, we can compare the hash to a fingerprint, automatically calculated by the blockchain network through its hashing algorithm. Crucially, any change within the block would cause the corresponding hash to change accordingly. Every subsequent transaction can be recorded in additional blocks, which would be appended onto the chain.

The second block in our chain will record transaction B. Similarly to block 1, it will include both information about the transaction and the corresponding hash. However, it will also include the hash of the previous block. In fact, every block of the chain, except for the genesis block, includes the hash of the previous one. A hypothetical transaction C would be recorded into block 3, which would include the hash of block 2, which would in turn include the hash of block 1. This is the basic mechanism that creates a chain (see Figure 3) and ensures data security; once some data has been recorded into a blockchain, it becomes very difficult to change it.

Let us suppose that someone tries to tamper with block 2. This would trigger a change not only in its hash, but also in that of block 3. All the subsequent blocks would become invalid, as they would no longer contain a valid hash of the previous block. Still, one could argue that all hashes simply need to be recalculated, and a computer can do it in a relatively short time. This is why blockchains have implemented the so-called proof-of-work, a cryptographic mechanism that requires chain members to prove (to other members) that some computational effort has been made. Ultimately, it is a way to slow down the creation of new blocks, thereby mitigating the risk of data tampering. In fact, if someone were to tamper with block 1, they would need to recalculate the proof-of-work for all the following blocks.²

To make blockchains even more secure, databases are not managed by any central entity; in most cases, they are globally broadcasted among individual users through the internet, thus ensuring high levels of transparency. Generally, “blockchains use a peer-to-peer network and anyone is allowed to

¹ Tom Richer, “Blockchain Demystified,” LinkedIn.com, February 13, 2018, <https://www.linkedin.com/pulse/blockchain-demystified-tom-richer/>.

² Richer, “Blockchain Demystified.”

join.”³ Every member of the network assumes the role of a node and receives the full copy of the blockchain. When a new block is created, each node can verify it and, if nothing has been tampered with, validate it. This is how consensus is created: the nodes collectively decide what blocks are valid and which are not.

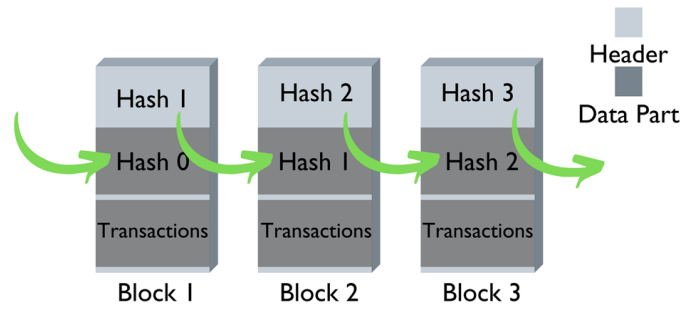


Figure 3. Blockchain's structure.⁴

³ Ibid.

⁴ Shalini Ravi, "Blockchain and Its Structure - an Introduction," C-sharpcorner.com, February 11, 2020, <https://www.c-sharpcorner.com/article/blockchain-and-its-structure-an-introduction/>.

Appendix B. Alternative paths

We have seen that, for Massumi, resistance to capitalism consists of a reappropriation of the qualitative field of life through a reinvention of value, that should take place within a new digital environment. He seems to be aware of the risks of his approach, as he acknowledges that the digital platform cannot be considered the process, but rather, the mere “technical engine”¹ of the creative event. Hence, the final product is not the platform, but rather, “emergent collectivity.”² However, I believe that some of the project’s features inevitably contribute to transforming the means into a new end, and therefore, into a new product. We risk shifting from the opportunity to use blockchain to reinvent value towards a fervor to reinvent value to use blockchain. Therefore, I propose to explore alternative paths, based on three considerations.

First consideration. Blockchain technologies could be expanded and complemented with components pertaining to other fields. Massumi’s project ultimately culminates in the creation of a quality-backed cryptocurrency, and this is arguably preferable to our current speculation-driven financial markets. However, blockchain’s computational nature is incompatible with the incommensurability of the surplus value of life. Insofar as we speak of affect in terms of intensities, we cannot fully escape quantification, but we can certainly try to avoid numbers, which are inexorably reductive. In this regard, we can take inspiration from studies about the interaction between humans and animals. How do animals register affect? In the case of human–horse communication, for instance, “body contact constitutes an emotional connecting channel”³ that enhances a sort of “kinesthetic empathy.”⁴ Such empathy arises from an emotional contagion occurring “when the perception of emotion expression induces the same emotion in the receiver as in the producer of the signal.”⁵ Technically, emotional contagion consists of a causal relation between certain human actions, such as voice or gestures, and the horse’s responses in terms of hormone or pheromone secretion.⁶

How can this relate to blockchain? Physiological reactions can potentially represent a way to deal with quantities with no need to make use of numbers. In fact, they can be appreciated, even with respect to their intensity, with no need for any numerical representation. We may say that they are qualitatively registrable both by those who are directly experiencing them (for instance, in the form of arousal) and by those who are hit by emotional contagion. Crucially, their sensations will probably not coincide, and this is exactly the point: qualitative registering ought to be subjective. I have described potential blockchain-induced alienation as theft of subjectivity (see Chapter 3.4 Technological mediation); therefore, before any reappropriation of value, we should pursue a reappropriation of subjectivity. I

¹ Massumi, 99 *Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 118.

² *Ibid.*, 115.

³ Chiara Scopa et al., “Emotional Transfer in Human–Horse Interaction: New Perspectives on Equine Assisted Interventions,” *Animals* 9, no. 12 (November 26, 2019): 2, <https://doi.org/10.3390/ani9121030>.

⁴ Kenneth J. Shapiro, “Understanding Dogs through Kinesthetic Empathy, Social Construction, and History,” *Anthrozoös* 3, no. 3 (September 1990): 184–95, <https://doi.org/10.2752/089279390787057540>.

⁵ Scopa et al., “Emotional Transfer in Human–Horse Interaction: New Perspectives on Equine Assisted Interventions,” 7.

⁶ *Ibid.*

believe this is a necessary first step in our revolutionary line of escape and rupture with causality. What is, then, the role left for blockchain? Let us recall the Simondon-inspired approach to blockchain technologies as platforms able to bring people together in ways unmediated by money and create the conditions for individuation through self-awareness and reflexivity.⁷ Such an approach is still valid, but we should not go any further by assigning blockchain the task of registering qualities. This can be done non-numerically within other fields, such as physiology or chemistry. The absence of a cryptocurrency, perhaps problematic for Massumi's creative duplicity, could help restore the role of emergent collectivity as the ultimate product.

Second consideration. A gift economy as a potential alternative to capitalism is not immune from capitalistic attempts of quantitative registering, which should be resisted. Several scholars "continue to treat gift giving as a valorized alternative to commercial exchanges."⁸ Within a gift economy, valuables are exchanged without agreements for future rewards. According to Chris Gregory, gift exchange creates personal relations between people, as opposed to commodities exchange which creates "objective relations between things."⁹ Gift-giving dynamics remotely resemble my previous example about cooperation-oriented feelings of mutual obligation (see Chapter 2.2 Debt and desire). From Marcel Mauss' perspective, however, there is a crucial difference: such feelings are not exactly cooperation-oriented, but rather motivated by the desire to maintain the relationship between givers. With respect to presents, he claims that "in theory these are voluntary, in reality they are given and reciprocated obligatorily."¹⁰ A cynic may even go so far as to argue that people give gifts out of selfishness, as they expect something in return.

Regardless of gift-giving's ultimate motivation, even a gift economy is likely to have its downsides. First, "social indebtedness inherent in the gift-giving process can produce negative feelings, embarrassment, and a sense of dependence."¹¹ Second, following Deleuze and Guattari, we could argue that gifts and counter-gifts may give rise to a "manifest disequilibrium of the relations, [...] functional and fundamental."¹² Not unexpectedly, such disequilibrium would have a well-known name: debt. However, if we accept Graeber's theory that standards of deferred payment precede trade and market transactions, we need to embrace an unconventional conception of debt, which is "neither per se quantitative, nor necessarily about private property."¹³ Since gift exchange creates personal relations between people, these can become subjected to a sort of relational debt, based on expectations and feelings of obligation. The fact that even gift-giving creates a functional disequilibrium leaves ample room for capitalism to attempt a systematic registering of asymmetries, even (or we should say, especially) in terms of personal relations. Such registering would be tentatively (yet, insistently)

⁷ Ibid., 259.

⁸ Jean-Sébastien Marcoux, "Escaping the Gift Economy," *Journal of Consumer Research* 36, no. 4 (December 2009): 671, <https://doi.org/10.1086/600485>.

⁹ Christopher A. Gregory, *Gifts and Commodities* (Chicago: Hau Books, 2015), 8.

¹⁰ Marcel Mauss, *The Gift: The Form and Reason of Exchange in Archaic Societies* (London: Routledge, 2002), 3.

¹¹ Marcoux, "Escaping the Gift Economy," 671.

¹² Deleuze and Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, 149.

¹³ David Van Putten, "Nietzsche as Bourgeois and the Issue of Exchange: On Graeber and Deleuze & Guattari" (Unpublished manuscript, 2021), 12.

numerical. But to resist capitalism, the “calculation of who owes what to whom exactly”¹⁴ needs to be avoided. Otherwise, we would not be able to fully escape capitalism’s subjugation forces and any gift economy arrangement would cease being a promising alternative path.

Third consideration. The pursuit of alternative monetary frameworks is desirable, but ineffective if not complemented by an egalitarian reorientation of our creative forces. I have argued that changing our conception of money can help limit the exacerbation and perpetuation of injustices, but this would be insufficient to eliminate their causes. Reinventing value is not only reinventing currency; it is something much more complex and difficult. Then, we should not see blockchain as a mere opportunity to develop alternative currencies, but rather, “as an index of much broader discussions over the nature of money, credit and capital in the world today.”¹⁵ The revaluation of value is a challenge that transcends the technological domain. For Massumi, it is “ethical by definition;”¹⁶ for Erik Bordeleau, it is “social and political.”¹⁷ Bordeleau’s position is ultimately in line with Zhang, who emphasizes that blockchain “does not absolve us of the hard work of politics.”¹⁸ In light of my previous analysis of blockchain, the reasons behind Bordeleau’s skepticism¹⁹ about technological solutions to politico-financial problems are easily understandable. Massumi’s goal is emergent collectivity, but “capital is not merely a production to be diverted to collaborative forms.”²⁰ Such an approach would be a symptom of network fetishism. Before looking for adequate technological infrastructures, we should improve our sociality. Following Spinoza, we may say that we should focus on our pre-technological “composition of relations.”²¹ How?

Let us recall that for Guattari, we ultimately need “existential mutations.”²² Peter Gabel, an American law academic, argues that we should recognize the encounter with the other (we can call it interaction, emergent collectivity, creative collaboration) as inherently egalitarian.²³ This could appear paradoxical, especially given that I have previously described such encounters as differential relations of power. However, in my opinion, some reconciliation is possible. It may be true that asymmetries are “functional and fundamental,”²⁴ as argued by Deleuze and Guattari, but this does not mean that they are immutable. I believe this is the reason why Gabel frames resistance as “conscious or intentional evolution.”²⁵ Since capitalism takes advantage from the exploitation and the exacerbation of hierarchies,

¹⁴ Ibid., 14.

¹⁵ Bill Maurer, Taylor C. Nelms, and Lana Swartz, “‘When Perhaps the Real Problem Is Money Itself!’: The Practical Materiality of Bitcoin,” *Social Semiotics* 23, no. 2 (April 2013): 263, <https://doi.org/10.1080/10350330.2013.777594>.

¹⁶ Massumi, *99 Theses on the Revaluation of Value. A Postcapitalist Manifesto*, 4.

¹⁷ Sjoerd Van Tuinen and Arjen Kleinherenbrink, *The Politics of Debt: Essays and Interviews* (Winchester: Zero Books, 2020), 134.

¹⁸ Zhang, “Systems Seduction: The Aesthetics of Decentralisation,” 8.

¹⁹ Van Tuinen and Kleinherenbrink, *The Politics of Debt: Essays and Interviews*, 134.

²⁰ Ibid.

²¹ Gilles Deleuze, *Spinoza: Practical Philosophy* (San Francisco: City Lights Books, 2007), 115.

²² Guattari, *The Three Ecologies*, 34.

²³ Peter Gabel, “The Bioenergetics of Authoritarianism,” May 20, 2017, <https://www.petergabelauthor.com/blog/2020/5/17/the-bioenergetics-of-authoritarianism>.

²⁴ Deleuze and Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, 149.

²⁵ Gabel, “The Bioenergetics of Authoritarianism.”

what we should do is “drawing enough energy away from the gravitational pull of the hierarchy.”²⁶ Capitalism’s pervasiveness cannot be resisted through a mere registering of affect and reinterpretation of value. The extractive logic of financial markets should be contrasted with a reorientation of our vital forces and “the movement of desire toward each other, toward genuine empathy, compassion, and love through mutual recognition.”²⁷ For Gabel, this requires “a shift toward a spiritual approach to politics that nurtures the confidence in ourselves and others that a socially connected world is possible.”²⁸ This would be quite an impressive existential mutation.

²⁶ Ibid.

²⁷ Ibid.

²⁸ Ibid.

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