

CHAPTER 9

The Digital Traces of Crypto-Finance

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Introduction: Cryptocurrencies and Internet Cultures

The last three decades in the history of the internet could be ideally divided into three main phases. The first was the 1990s, which saw the emergence of a libertarian/utopian declination of the potentialities to create a new space where people could build knowledge (for example through hyperlinks) and ultimately reclaim the ‘net’ as an alternative space where the rules of the ‘outside’ world would not/could not apply. This is exemplified by the infamous ‘declaration of independence of cyberspace’ (Barlow 1996). In the following years, the second phase is most notably described by the rise of the ‘collaborative’ internet, so-called ‘Web 2.0’ (O’Reilly 2007), largely based on dynamic internet protocols that allowed and incentivised the production of content by users into increasingly organised archives: from early blogging, online encyclopaedias and, finally, social media. They allowed users to overcome the technical barriers underlying the creation of autonomous websites, siphoning user activity into ever larger conglomerates (Helmond 2015). This leads us to the third phase, during which tech enterprises who had survived the dotcom bubble in the late 1990s (notably Google and Amazon), along with new ones (Facebook), dominate the market and have led academics, public bodies (e.g. the US Senate and the EU Commission) and public opinion to question the legitimacy of such levels of concentration and surveillance. The debate is centred around

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massive processes of data harvesting and data analysis along with commercial and political exploitation of that data. These debates have evolved around keywords such as: datafication, quantification, data surveillance and surveillance capitalism.

We have now grown accustomed to the idea that almost every action that we perform is tracked, monitored, evaluated, stored, sold. Although many of these platforms are freely accessible this obfuscates the fact that their functioning requires extensive human, computational, natural and economic resources – this in turn has contributed to the well-founded suspicion that, since commodities cannot really be ‘free’ then it must be users and their activities that are themselves the product in this value creation process. But this should not lead us to simplistic conclusions, as we know that the value of a company like Facebook is not based on the sum of the value of the individual data it has stored but rather on promises of growth it can successfully deliver to its shareholders (Arvidsson 2016).

Furthermore, datafication has now reached almost every aspect of our lives, including the most intimate domains of sexuality, dating and health. In fact, as the literature has shown, there are concerns over the Chinese takeover of the gay dating app Grindr (Myles 2020), as it includes information about millions of individuals’ sexuality that could be used to publicly discriminate.¹

Crypto-Ideologies

In this context, how should we understand the rise of crypto-finance? At first glance, we can say it displays traits of the first-wave internet, a utopian scenario in which communities of hackers, techies and believers in the value of freedom and autonomy created new protocols, indeed new forms of social organisation, where they could create their own rules, their own worlds and, ultimately, their own finance. The start date is canonically understood as being 3 January 2009, when an anonymous inventor – Satoshi Nakamoto, a pseudonym behind which, it is speculated, is a team of people – published on the web the first version of Bitcoin code, the first and most high-profile cryptocurrency. It is based on cryptography, decentralised and anonymous exchanges and a distributed record of transactions (ledger). Most importantly it emancipates the creation of money from central institutions, reclaiming a very similar sense of autonomy to that of the first phase of cyberspace. In fact, the understanding of cryptography as a medium through which to achieve autonomy from institutionalised social worlds comes from Wei Dai, and is based on his work during the 1990s on the mailing list subculture of ‘Cypherpunks’.²

These processes were happening as similar changes were radically transforming finance itself. Even if the first transatlantic bank transfer mediated by wires had happened back in 1919, in the 1980s and 1990s trading floors in stock exchanges were still largely based on dense human interaction, where

middlemen and other organisations remained the fundamental engine for the coordination of financial markets. As a recent book on the subject brilliantly summarises regarding the current situation:

Trading floors have disappeared, replaced by what anthropologist Ellen Hertz (1998) calls a ‘community of effects’ built through computers, screens, and cables scattered across inconspicuous locations throughout the world and where actions are not the result of a distinct collective intention but of the exercise of countless individual wills. In present-day financial markets, the logic is not one of coordinating interpersonal interactions but of managing the punctuated electronic signals that encode the orders from masses of anonymous investors. (Pardo Guerra 2019, 3)

The anonymous masses of ‘official’ finance closely resembles the amateur ones that animate the community of cryptocurrency investors that has emerged since the early 2010s. Initially confined to an inner circle of early adopters, investing in currencies such as Bitcoin became a significantly more popular activity thanks to a combination of factors, including the massive gains in the value of Bitcoin,³ the creation of autonomous exchanges (for example, Bittrex, Binance etc.) and the accessibility of conversion points that allow for the easy exchange of *fiat* currencies into cryptocurrencies thanks to the mediation of major credit cards’ circuits. Finally, Bitcoin ended up becoming a mythology in itself led by a fascination with alternative financial systems, especially if we consider how it thrived in the aftermath of the major 2007–8 financial crisis and the austerity politics that ensued. This has intensified the political appeal to an audience of tech-loving millennials (OECD 2019). However, we are aware that this mythology, like all mythologies, often hides a part of the truth in its promise of liberation and emancipation, so that, even if cryptocurrencies clearly signal a rupture and a political design based on liberation from the constraints of states and centralised markets:

The currency has generated a thriving community around its political ideals, relies on a high degree of social organization in order to be produced, has a discernible social structure, and is characterized by asymmetries of wealth and power that are not dissimilar from the mainstream financial system. (Dodd 2018, 35)

What differs is that cryptocurrency projects harbour a promise of radical change, coupled with an intention towards ‘social good’ (Bandinelli 2020), viewing the current establishment as a vestige of the past – outdated and redundant. In this sense the appeal of traditional finance as possibly entailing similar results is ideologically inconceivable, although there are currently several popular apps which, in bridging alternative financial markets (Shrikanth 2020)

can also concentrate on a seamless trading of official stocks listed on exchanges such as the New York or London Stock Exchanges. We understand this recent evolution as a possibility created by the alternative financial sector itself, at least in making it plausible or ethically sound to invest and speculate in assets. What is also noteworthy is how the appeal of investing in cryptocurrencies soared during the first lockdown months of 2020. During this period record levels of investors registered and transacted on these exchanges (Shrikanth 2020) while academics debated the hypothesis of whether crypto-assets could be perceived as 'safe havens' (Conlon, Corbet and McGee 2020) for investors during the Covid-19 pandemic. This also calls for a renewed understanding of each generation's approach to finance. Recent demographic inquiries led by industry players in crypto-finance give us a clearer picture of who these investors are. In particular, data coming from the UK and the US (Gemini 2021b) provides us with some very pertinent insights. In the first place, investing in crypto is an activity involving several generations, and not only those in their twenties – the memetic, Reddit-intensive Gen-Z who might be overrepresented if one pays attention to online posting only. Current crypto-investors in the US are on average 38 years old, with 75% being equally distributed between two age brackets: 25–34 (37%) and 35–44 (17%). The income of crypto-investors in the US is on average \$111,000 (Gemini 2021b), and is significantly higher than the median income of American citizens of \$69,000 (United States Census Bureau 2021). The age distribution for prospective investors – those who are at the moment only curious about crypto – is more balanced across multiple age cohorts, including 27% of North Americans aged between 45–54, and 22% between 55–56. What is also notable is the gender breakdown, skewed to men for current investors (74% male, 25% female), with those who are only curious being mostly female (53%). In the UK the picture is more precise (Gemini 2021a), based on a survey conducted on a sample of 2,000 individuals, 13.5% of whom currently invest or have invested in crypto in the past. The composition is more diverse across all areas, from gender to income and education. The typical investor here is more likely to be aged 18–44, split more evenly between genders (41% female, 56% male), is more likely to be in a relationship, less likely to own their own home and, interestingly, more likely to have children or dependents at home. This is coupled with an investing activity that, in terms of household yearly income, starts at £20,000, which is below the national (mean) average. Given crypto-investing starts at incomes below mean income levels, it might constitute their prime or sole form of investing, therefore exposing investors to considerable risk because of the high volatility of crypto-assets. To conclude this demographic snapshot, the same reports reveal that normally investors have a rather safe orientation, investing and holding a position for weeks or months, as opposed to the narrative we find on social media that overrepresents overly aggressive and speculative attitudes based on intense day trading activities.

In this context, I will now attempt to pin down the abstract processes that define this new approach to finance. In the first place, we can identify a process of datafication that we can comprehend as a base rhythm, the sound of machines storing everything that we do, that we value, that we like online. Secondly, based at this material level, we have cultures and ideologies that struggle for either hegemony or counter-hegemony, the latter exploiting the same financial mechanisms but rooted in a digital culture that provides an alterity. Thirdly, the positionality of a new generation of investors, and more specifically those investors who have been capable of shaping a counter-cultural narrative mostly on social media, should be assessed as being *passive* data producers and active data users that utilise a vast array of data types to participate in the creation of alternative financial value. In this chapter, focusing on data and data-related processes (specifically processes of data analysis but also processes of financial literacy crucially mediated by digital technologies), I aim to dissect the political and cultural entanglement that defines the peculiar positionality of a cryptocurrency investor as data-subject. By doing so, I try to illuminate the ambiguities and the possibilities of emancipation through digital technologies.

The Wisdom of Digital Crowds?

Digital media's role in the social life of cryptocurrencies can scarcely be underestimated. To a certain extent, the foundational ideas of cryptocurrencies are digitally native.⁴ I will explore the different roles digital media plays, not just in educating investors, but in attracting them to cryptocurrencies over other types of investment. In the first place, digital media enabled the creation of an ethos that distinguishes between old/bad traditional finance and the new 'saviour' nature of cryptocurrency. This is relevant because it was not that online banking services, which have been available since at least the early 2000s, were not usable earlier, but what was missing was the cultural element that made this possibility appealing. A further distinction is made between small and large investors. In their online chats, Bitcoin investors often refer to large investors as *whales*,⁵ not without a tone of mockery and mild deprecation, and they are perceived as responsible for the price fluctuations that hinder the strategies and profits of the many 'small fish' – however, as we noted earlier, these same wild fluctuations also contribute to generating interest. This reveals an attribution of a positive value to the fact of having a small amount of resources, as if the quantity of capital invested was able to legitimise and differentiate the will (and the right) to profit between the two groups. In fact, it is known that cryptocurrencies are not immune to the interference of large private investors, and they are not alien to the intervention of sovereign funds as countries such as Russia and China (Peng 2020), amongst many others, started investing in this lucrative and highly volatile market years ago.

Digital media is responsible for the circulation of key information on where and how to invest. There are countless online outlets that provide precisely this kind of content: forums, Telegram chats, Discord channels, official blogs, podcasts, etc. An important difference lies in the fact that one large part of the context is produced by users themselves, while the official, established financial press also now covers, on a daily basis, an analysis of crypto-assets. In the domain of user-generated content the same ‘laws’ of popularity apply that academic studies of new media have long identified (Abidin 2018). We can find many popular crypto ‘influencers’ that – often in explicit partnerships – evaluate the market, provide fundamental analysis and ultimately evaluate the potential of a given asset to be profitable. This reveals an aspect of performativity in the creation of value, as it is often the same hype produced by the influencer (by virtue of being trusted by their followers) that results in ‘making’ the investment profitable. Influencers can have tens of thousands of followers, and their activities include sharing their own daily investment plans on Twitter, or predicting future market directions based on a live analysis.

Another key aspect of educating this new generation of investors is the widespread and free access to financial literacy. On platforms such as YouTube some channels have now become alternatives to formal training and university degrees on these subjects, allowing prospective investors to learn the foundations of trading, of market analysis, trends etc. A common view is that sixty hours of training is needed to start to grasp the foundations of trading. Practices of becoming literate in any subject thanks to the internet should not be particularly surprising in the 2020s. However, it is relevant that a new class of investors, a new subjectivity, a sense of collective belonging is created in the realm of finance, possibly signalling a specific generational set of desires, aspirations and ideals. In fact, the creation of an infrastructure for decentralised trading is based on a will that it is also political. However, it does so by mimicking the same artefacts, techniques, screens and indicators of traditional finance. In fact, there is a massive reappropriation of techniques that were developed for traditional finance. Exploiting existing knowledge, merging it with a utopian ideal of liberation from ‘central institutions’, signals a process akin to that of a ‘world creation’ or myth (Dodd 2018).

The evolution of cryptocurrencies has led to the creation of an entire new industry that spans from the creation of crypto-exchanges to Big Data approaches to investing which amateur investors can deploy. Many of these exchanges are, in fact, based on APIs (Application Program Interfaces) that allow for a constant ‘dialogue’ between investors and the market, leading to the rise of intermediary services. One such example is ‘3Commas’ (3Commas n.d.), a platform that allows users to encode their own strategies using bots that can be deployed automatically if certain triggers are activated. Another example is platforms that offer Big Data social analytics to guide investors, e.g. ‘Santiment’ (Santiment n.d.), a digital start-up that aggregates social and financial data.

The implicit link between these two services is that it is possible that analysing what is said about a certain cryptocurrency online can ultimately influence its value. Tracking the number of online posts that discuss a currency, or the level of coding activity on GitHub, analysing the overall ‘sentiment’ of a currency in a given moment – this data is the aggregation of the same users’ digital actions.

This current setting is possibly explained by reviving a theory of collective/connective intelligence (Levy 1997), by which a greater knowledge is achievable via online coordination and may be understood as a means to guide investors’ actions and turn uncertainty into calculable risk (Knight 2006). Similarly, economics scholars have explored the possibility that crypto-finance could actually prove the theory that posits a ‘wisdom of crowds’ (Lee, Li and Shin 2019) to be true: by being able to collectively evaluate and communicate among themselves crowds might be able to achieve above average results. However, the availability of such insights openly shared for free (or behind reasonable paywalls) might make it seem as if they were non-rivalrous goods – a sort of digital commons (Wittel 2013) – but this is far from reality. In fact, the internal financial mechanisms that the crypto-world mimics and borrows from traditional finance invariably replicates it along with the same mechanisms of exclusion and tiered or preferential access to valuable information.

What Kind of Subjects are the Digital Subjects of Crypto-Finance?

How do algorithmic processes see us? If they could see us, sense us, we would probably be akin to a galaxy of data points, a representation of all our actions that are subjected to digital tracking (Lupton 2020). In a transhumanist vein, we might also consider the co-substantial relationship we entertain with these data points: they are somehow connected to us, and they act on us for the knowledge that they store about us and that can be resurfaced in precise moments (e.g. when an algorithm suggests something to us to which we can respond). We could ascribe this relationship to a sort of filiation that originates in the primary human subject, or in a way that allows for a circularity to be possible between human and non-human agents (see Stiegler’s concept of *exosome* (2018)). It is telling, in this respect, to examine a key article in the General Data Protection Regulation (GDPR), article 4(1) (emphasis added):

‘Personal data’ means any information relating to an identified or identifiable natural person (‘data subject’); an identifiable natural person is one *who can be identified*, directly or indirectly, in particular by reference to an identifier such as a name, *an identification number, location data, an online identifier* or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person.

This makes very tangible the idea that we can now be legally identified by some of our own data points, as indices, as traces of us. We belong to that data as the data, partially, belongs to us. What does this say about our condition? And what does it say about the aspirations, hopes and efforts of this new generation of investors to create value and profit from their digital activities that are exploited and self-exploited? On the one hand, there is an empowerment spiral; on the other, there is the inevitable implication in an exploitative system.

Investors, however, beyond having a certain relationship with their own 'data points' and the use of aggregated data of other investors, are subjected to a foundational layer of data tracking and exploitation that falls outside the possibility of full ownership. This is the type of data processed by the profiling algorithms of major platforms on which the socialisation and popularisation of finance happens: YouTube, Reddit and other major platforms retain valuable information about their own activity. This appears to be the hard limit for a possibility of a 'full' ownership of our own data.

Investing in these cryptocurrencies is not safe – as it never is for any kind of financial investment. However, reliable survey data (OECD 2019) tells us that cryptos have guaranteed a possibility of immediate profit for most investors. This indicates the relative success of a method of financial value extraction invented by utopian coders and adopted *en masse* by a new generation of financial investors. This also allows us to provisionally assert that, above the foundational layer of data exploitation that we are all subjected to, it is possible to create a parasitic layer that allows investors to exploit tactically, ultimately providing an economic benefit for them. We are data subjects, and as such we are constantly subjected to forces, but at the same time there are possibilities for the creation of new worlds and institutions that allow new ideas and social formations to exert a counter-power. A part of it is the fact that our society works based on specialised sub-systems that gain instrumental advantages by keeping control within their boundaries, as in the case of traditional finance. In a realpolitik power analysis, the new crypto-scene needs a world that it has created and that it rules technically and culturally.

Overall, the balance of these two forces of datafication and reappropriation of finance by means of code points towards a peculiar form of political critique, one that is enmeshed in and moulded following the same models of extraction. If the Italian autonomist theorists of the 1970s predicated the juxtaposition of being 'within' the system and 'against' the system to be effective in the counter struggle, it is plausible to think that now being 'against' also means being at a meta level above the fiction of capitalism to see its workings behind the curtain in order to learn capitalism's strategies and replicate them in hopefully largely autonomous worlds. This is a possible line of development for a critique that can disentangle and bring us back to the taboo of the machinic colonisation of the subject: as a primitive financial colonisation that dates back 150 years, that is now mimicked, appropriated and re-encoded in this new financial wave led

by amateur investors and emerging technological leaders. To this we should also add the anthropological implications of the alienated relationship between ourselves and our data traces. Somehow the dynamics inherent in data traces speak of our corrupted condition – colonised by financial and technical systems – while at the same time they inevitably chain us to this new capitalist spirit of the time.

Conclusion

In this chapter I have tried to present some lines of investigation that pertain to a wider-ranging research agenda I have been developing on cryptocurrencies, including an evaluation of the case for a democratisation of finance via cryptocurrencies. There are many ambiguities that affect this financial emancipatory project on both a systemic and subjective level. I believe that in this respect it is also productive to think along the lines of recent debates on connection/disconnection. As Natale and Treré have said, ‘engagement with digital technologies is instrumental to develop critique and resistance against the paradoxes of digital societies’ (Natale and Treré 2020, 630), therefore positing that the possibility of escape from a seemingly corrupted world does not end just by furthering a progressive agenda. In this sense, it is about evaluating politically if devising such a critical yet exploitative practice as crypto-investing in the search of a new form of (passive) income, or supporting a wave of change embodied by the crypto-scene, can constitute a positive force in society. The range of positions here is infinitely varied, as we know from activism narratives that show that aligning one’s private consumption and lifestyle to a public persona is often afflicted by a noticeable cleavage between the two. I believe that if we follow Tania Bucher’s insights on the digital condition we can see that there is ‘nothing to disconnect from in the digital world’ (Bucher 2020). However, clearly more can be done to assert more equitable conditions faced with the massive exploitation and self-exploitation of data. We may witness an extensive academic exploration of decentralised architectures and protocols and their underlying ideologies. My intention here is to underline what I believe is a dire need to assess the cultural production of the digital publics of crypto-finance in several aspects: the creation of a distinctive crypto-ethos and the socialisation of new financial practices, largely undertaken in a peer-to-peer mode. This agenda is highly important as this crypto-scene has proved capable of penetrating the public sphere and influencing mainstream discourses on economics. Furthermore, a fuller agenda should certainly include the vast ecology of cryptocurrencies, taking into account not just retail investors or social media posters but also the coders that ultimately create new architectures and who often embed a distinctive ethical and financial form in their operations. Lastly, an updated agenda should reflect the typical modern capitalist dynamic for which the disruption of a new technology (e.g. blockchain, peer-to-peer, trustless) is often regulated by states,

as is happening right now. The UK has recently prohibited their own citizens from investing via Binance, one of the largest trading platforms. Yet at the same time, these innovations have led many to start thinking again about the foundations of money, as something that is always, inherently, a social process.

Notes

- ¹ Here I suggest some key texts on critical approaches to platform society that have recently appeared on this subject: *Platform Society* by van Dijck, Poell and de Waal (2018), *Surveillance Capitalism* by Shoshana Zuboff (2019) and *The Costs of Connection* by Nick Couldry and Ulises Meijas (2019).
- ² For example, b-money in 1998. See <http://www.weidai.com/bmoney.txt>, '... a scheme for a group of untraceable digital pseudonyms to pay each other with money and to enforce contracts amongst themselves without outside help'.
- ³ Bitcoin prices rose in 75 days from \$5,000 to \$19,783, from 1 October to 17 December 2017, and from \$3,500 in March 2020 to the same heights in December 2020; this also accounts for the extreme volatility of its value which both deters and appeals to speculators.
- ⁴ Their roots, however, also lie in an economic thinking that spans beyond internet history and looks back at neoclassical economy, anarcho-capitalism as well as mutualism. On this see Swartz (2018) and Dodd (2018).
- ⁵ Bitcoin whales are the big investors. This is due to the concentration of shareholders' portfolios. At the time of writing, three Bitcoin addresses own nearly 8% of all Bitcoins (equivalent to \$396 million), while the first 100 wallets hold 31% (\$1.7 billion).

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