A claim upon what? Cryptocurrencies as 'scene'

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Introduction

The internet architecture, usage, and culture have always been defined by openness. Since its inception in the late decades of the Cold War, internet designers made any node of this digital network equal and capable of bridging new nodes without the need of anyone else's approval. This way, the formation of single points of failure is avoided because nodes can always be added, and communications can always be rerouted through alternative nodes. This principle of resilience – which assumes that centers are easy targets, thus weak links, rather than strongholds – was intended to prevent the emergence of hierarchies among nodes and priorities among messages. So, Soviet attacks could hit any node but never paralyze the entirety of this network of military communication. The persistent defense of network openness – still visible in the ongoing debate on 'net neutrality' – is well expressed by the motto "we reject kings, presidents and voting. We believe in rough consensus and running code", coined by David Clark, a chief internet architect. The same openness proved future-proof through the decades to come.

Every some years, internet wakes up to some new frenzy of openness that promises to revolutionize the world. Often, however, things do not develop the way they are predicted. Sometimes failures mark the abrupt passage from boom to bust. Whatever the outcome, those world-wide frenzies mobilize huge amount of resources, and use to have a profound long-term effect on organizations, markets, and societies: web and credit cards originated the dotcom boom, which busted spectacularly but also laid the foundations for current e-commerce. Peer-to-peer networks made copyright infringement a household issue, and created the conditions under which Apple's comeback became possible through iTunes, iPod, then iPhone, which in turn substituted personal computers with smartphones at the center of people's informational activities. The Free and Open Source Software movement promised to replace formal organizations with open meritocracies. Despite failing to fulfil it, by aiming at that grand vision it created technologies that everyone, including formal organizations like the multinational corporations, rely upon daily.

Although in unplanned and unforeseeable ways, those fevers do sediment into building blocks that someone, somehow, somewhere later on will reinvent and build upon. So, those phenomena and the hype they come wrapped in lay the foundations of large-scale infrastructural developments that states tend not to fund as they used to, but still need huge resources and energy to bootstrap. Bitcoin, cryptocurrencies, and blockchain in recent times are the latest hype of this long string of digital innovation whose enthusiasm is rooted in openness, decentralization, and the promised departure from the constraints of existing social order and the organizations that guard and maintain it.

In this paper the focus is on how cryptocurrencies are entangled with an emerging form of sociality that has promised to diverge from some of the basic assumptions underpinning the modern nation-state, the archetype of formal organizations. Established conceptualizations of organizational forms – such as "bureaucracy", "corporation", "community", "group", "teams", "community of practice", "profession", etc. – do not fit the mode of organizing typical of such emerging phenomenon. Building on research that sees "global microstructures" in financial markets (Knorr Cetina & Bruegger, 2002) and in terrorist organizations (Cetina, 2005), as well as more recent attempts like Wilf et al. (2013) and Nunes (2014), this paper proposes the concept of "scene" as a mode of organizing has a better explanatory power than traditional concepts, especially to capture the mode of open organizing that characterizes digital sociality.

Simmel (1900/2004) defined money as a 'claim upon society', where society is commonly understood as national society. Along this line of thinking, the UK Sterling

is a claim upon the UK society, which would give you something for the money you spend, like the Rupee is a claim upon Indian society. So, it is relevant to outline the ideal-type of the nation-state (hereafter "state"), which was sealed with the Treaty of Westphalia in 1648, under which European states - receding from three decades of war – agreed not to interfere in other states' internal affairs. Conceptually, Hobbes (1651/2006) used the biblical creature of the Leviathan to convey his idea of a selfcontained absolute power upon which humankind should rely to abandon what he depicted as a 'state of nature', which was a pessimistic view of humankind naturally inclined towards a 'war of all against all'. He argued that people must recognize that such a state of nature is destructive, and must accept, on the basis of utilitarian reasoning, the need for a social contract to constitute a supreme actor – the sovereign state – whose power is absolute and enforced by a monopoly on violence. No exit is allowed; no ethical, moral or religious limit can be posed in front of this power. The Leviathan is total because there is no room for any other rationality, and finite because its people are tied to the social contract. Hence, the Leviathan and the body politic are constituted at once and are irreversible.

Hobbes's idea of the Leviathan has proved to be alluring and enduring, and, over the centuries, has provided a foundational – though by no means unique – intellectual basis for the state form that is now ubiquitous. After a methodological note, the argument continues on how state feature of finiteness is problematized by the openness that information infrastructures bring in various guises, and cryptocurrencies exemplify.

Methodological note

Studying cryptocurrencies poses a number of challenges, including the scale of the phenomenon, which extends far beyond the qualitative researcher's purview, the global dispersion of cryptocurrencies, the widespread pseudonymity of relevant actors, and the inherent difficulty of identifying where actions take place. Thus, instead of adhering to the Actor Network Theory mantra that one should 'follow the actors' – as there was no one specific to follow and nothing specific to look at in the immense conglomerate of actions and transactions – we instead followed and focused on problems and controversies (Hoppe, 2010).

Much of the organizing, in the same fashion of free and open source software, happens in public online fora and specialized press. Here, it became clear that those involved with cryptocurrencies shared a sense of what constituted a problem. Hence, we 'followed the problems' as they manifested themselves and were dealt with. In this way, studying cryptocurrencies is akin to studying social movements, as both domains are defined by shared interests, concerns, values, practices, and goals rather than by ascribed and stable identities or attributes.

The main initiative was to create a community of interest around a small and simple research project intercepting the *zeitgeist* of its time: a two-pager written in the aftermath of the second Greek crisis, in early 2013, that proposed comparing emerging currencies, especially digital, while the Euro seemed to be cracking at its edges. This then led us to start a mailing list and a shared online repository to which we added the material we were collecting. Quickly, the amount of material exceeded what we could read and analyze, and so we started inviting and involving people depending on what problems were emerging. Over time, this led to a list of over two hundred members from very diverse disciplines and backgrounds, including a significant number of practitioners. These people constituted a loose network to refer back to in order to get a sense of new phenomena, put interpretations into perspective, triangulate sources.

Shortage of events was never an issue. Often, they were so unexpected and wildly surprising that we constantly needed to cross-check and reconsider our own understandings with people who could provide credible interpretations. This constant effort took the shape of direct consultations (most of the times via email, given the geographical dispersion), asking questions publicly (on the project list as much as in international conferences), searching specialized press, grey and academic literatures and sharing it all through the project document repository. In a sense, in parallel with data collection, a Delphi method was run on a continuous basis.

In research practice, this meant consulting and involving people with views possibly very different from ours because of disciplinary backgrounds (economics, anthropology, computer sciences, law, accountancy, philosophy), political views (leftwing activists, libertarians, free-marketeers, statists), and professions (academics, consultants, programmers, lobbyists). What mattered was the plausibility of the interpretations developed, rather than confirmation of theories and consolidation of a research group identity. As a result, a loose network of collaborations – kept together

by simple IT tools – became capable of 'resonating' with the variety of problems originating from cryptocurrencies. This scaling of the methodology allowed to resonate with the different values attached to cryptocurrencies as they were emerging. It also proved crucial in recognizing early on that the whole empirical field was drifting from the libertarian designers' original intentions toward more institutionalized logics.

On finiteness: fiat money vs. cryptocurrencies

Fiat money is a currency without intrinsic value which is established as money by state decree and which is a widely accepted method of payment in a society. The most consolidated kind of fiat money are national currencies, which are unique to a state's territory within which their use is enforced, partly through the state's monopoly on violence. Historically, fiat money can be seen as a technology that links states to their economies in fundamental ways, since, for instance, it both facilitates trade and state control on trade (Dodd, 2016). According to Swedberg (2018), following Max Weber, fiat money contributed to the rationalization associated with the modern state, because money is "formally the most rational means of orienting economic activity", and because it facilitates accounting and budgeting. In practice, fiat money achieved a homogeneous monetary mass that could overcome the impracticalities of currency fragmentation, facilitate tax collection, and thus effect sovereign authority. Importantly, a single national currency makes it more feasible to institute universal taxation, which is the main source of revenues for states, while stable taxation systems allow states to leave economic activities to capitalist ventures (Swedberg, 2018). Over time, private banks acquired the capacity to create money by giving loans for an interest, while states maintained the role of overseeing credit and debt, out of which emerged the contemporary system of finance.

Graeber (2012) took this a step further when he argued that the state is also constituted by the power to create and control the money system. His thesis is that the nation-state required and co-emerged with a military force, a money system, and a tax system, and that these three systems were interlinked through the state minting coins, paying soldiers with these coins, and then requiring citizens to pay taxes with the same coinage. In turn, the military protected the state mint and enforced the collection of taxes, while the collection of taxes expanded into a much wider bureaucratic

machinery that worked to reproduce and maintain the state as a particular form of organization. In sum, the creation and consolidation of a homogeneous – multipurpose, generic and fungible – monetary mass, which could be used to pay soldiers, taxes, debt and trades as much as to manage the economy, gained traction by constituting states as isomorphic to a defined territory and a fixed population.

As a consequence, currencies have a regulatory function in that they maintain social order by channeling social tensions into contracts – which a money system makes meaningful in the first place – and which then can be regulated. But channeling violence does not mean eradicating it, as breaching contracts may – through regulated processes – call for the state's force to be mobilized. The jurisdictional as much as organizational problem occurs when the monopoly on violence conflicts with the principle of non-interference, which happens, for instance, when actors to be prosecuted are in foreign states. This is commonplace in cryptocurrencies.

Bitcoin and similar social experiments emerged out of the cypherpunk movement of the 1980s and 1990s that advocated the use of cryptography to protect privacy, individual liberty, and freedom of expression. Echoing while re-interpreting the traditional American value of individual freedom and self-reliance, the cypherpunks were particularly hostile to the perceived power of the state, and to government and corporate interference in any form:

Some of us believe various forms of strong cryptography will cause the power of the state to decline, perhaps even collapse fairly abruptly. We believe the expansion into cyberspace, with secure communications, digital money, anonymity and pseudonymity, and other crypto-mediated interactions, will profoundly change the nature of economies and social interactions (May, 1992)

The cypherpunks were attracted to the idea of digital money as a way of avoiding state powers, which derive also from the state's monopoly on fiat money. At heart, they pre-supposed the same state of nature as Hobbes had over four hundred years previously: an imaginary world populated by trustless individuals. However, while Hobbes saw this as a prerequisite justification for the Leviathan, the cypherpunks believed that a technological solution could be achieved that would eliminate the need for a state. Thus, they proposed a series of different prototypes for digital money – b-

money in 1998, Hashcash in 2001, and Bitgold in 2008 – but these were unsatisfactory as they all required that digital signatures be held by a "trusted" third party, a role that would almost inevitably be taken, or persecuted, by the state (or a state-regulated bank).

The breakthrough occurred in 2008 when a mysterious individual or group known as Satoshi Nakamoto published a paper that set out how a cryptocurrency known as Bitcoin might operate, and this ultimately became the basis for all other cryptocurrencies and derivative services (Nakamoto, 2008). Remarkably similar to Hobbes's state of nature, Nakamoto begins with an imaginary world populated by trustless individuals. The problem addressed is how to enable trustworthy transactions on the internet, which does not have a fixed population of reference on whom to enforce regulation, without recourse to a trusted third party such as a state-regulated bank. Their solution is Bitcoin – and its enabling technology, the blockchain – a cryptocurrency that is not administered directly by any formal organization and is not circumscribed within any consistent jurisdiction. Hence, Bitcoin is built around scarcity (money cannot be infinite) and absence (no guarantor) and, unlike traditional currencies, it is not linked to precious metals, nor to a state (fiat money), nor to credit (banks).

Nakamoto's attempt to create a money system without a central authority is perhaps best analyzed at the intersection of diachronic and synchronic issues. Historically, the blockchain is part of a long chain of information technologies that, since the 1960s, have avoided centralization tenaciously, partly as a defense against possible Soviet nuclear attack, and partly in sympathy with the Western liberal culture of the 1960s and 1970s. The problematization brought about by Bitcoin is that it does not depend on any state and, with appropriate technical cautions, is used by actors who may not be ascribed to any sovereign. In other words, the Internet protocol's (TCP/IP) contextual agnosticism keeps manifesting in novel ways. One consequence of the grey area between the monopoly on violence and the principle of non-interference is that it is difficult to enforce regulatory and legal actions, and so it is perhaps unsurprising that Bitcoin is attractive to those wishing to trade at or beyond the margin of legality, as they can move swiftly around this seamless transnational network.

Cryptocurrencies can be seen as the latest stage of decoupling money from

states. This process is not new. Today the French Franc and Deutsch Mark are not in circulation anymore, and the Euro is neither a claim upon France, Germany, nor any other Eurozone country. Still the European Union has its own central bank – albeit with more limited mandate than others – and other supranational political institutions. Main cryptocurrencies, by not relying on any of those organizations, has taken a step further in decoupling Leviathans from currencies. Indeed, "Bitcoin is a claim upon a state(s)" makes as little sense as "10% of an unknown population" or the idea of "a monarch without subjects". Without finite and defined ('open' one may say) contexts of reference, cryptocurrencies prompt to reconsider the assumptions that relate money and society.

The avoidance of defined contexts of reference problematizes currencies and states. And this is not just academic-speak, as these problems come to the fore when anything goes wrong with Bitcoin. For instance, it is difficult to find any organization to which one can appeal to redress a wrong if Bitcoins are stolen. Unlike a credit card fraud, where a transaction can be reversed by the card-issuing organization, there is no easy way to get Bitcoins back, once they have been stolen (Brito, 2015).

States are founded on the belief that definite and finite boundaries can be identified and maintained, which, in turn, provides the basis for the state to properly organize its constituent domains, such as its judicial, legislative, military, policing, financial and bureaucratic systems. It is beyond the scope of this paper to consider the impact of cryptocurrencies on all of the state's domains. So, some exemplar instances are outlined below: a) economy, b) identity, c) bureaucracy, d) authentication.

Even if the crypto-economy is tiny compared to fiat currencies, Bitcoin represents the genesis of a currency – designed as a mode of allowing and authenticating transactions – that explicitly seeks to circumvent some of the quasi-monopoly powers that the state has built up over centuries. Each state has traditionally exercised these powers through various institutions, but perhaps none is as influential as the state's central bank, which plays a central role in a range of key activities: setting credit rates and monetary policy; deciding on and implementing exchange rate policies; surveying and collecting data on citizens and corporations; assuring the robustness of the payment infrastructure; protecting the interests of consumers; controlling moneylaundering; and regulating/supporting existing financial service providers. Here, it is

worth remembering that local and alternative currencies (such as the Bristol pound), might not have a central bank, but they have not challenged the state in any substantive way. Importantly, and in contrast to cryptocurrencies, local currencies rarely fluctuate freely, do not span across different states, and they lack the disruptive positive network externalities that characterize open networks.

Another peculiar issue is identity. With appropriate technical cautions, cryptocurrencies can be used by actors who may not be ascribed to any sovereign. Thus, we are in the grey area between the monopoly on violence and the principle of non-interference. If we cannot say who is who and where, it is difficult to enforce legal actions. So, it is perhaps unsurprising that Bitcoin is attractive to those wishing to trade at or beyond the margin of legality. Symmetrically, customer protection is diminished since there is no obvious organization to which one might appeal to right a perceived wrong. Thus, notwithstanding its small scale relative to fiat economies, what Cryptocurrencies sketch is a high volatility world with lots of new business ventures, bankruptcies, and sharp practice: a 'world wild west' in which the sheriff is another cowboy in the crowd.

Bureaucracy is the state's administrative apparatus that, inter alia, connects elected bodies (parliament, government) to citizenry. In other words, the state is articulated by bureaucracy, which has the role of bridging and connecting the formal political sphere to citizens. Historically, bureaucracy was legitimized by the rationalization of society wherein relations with citizens were channeled into formal procedures. However, it became clear that bureaucracies also gained autonomous power – famously termed as a dystopic 'iron cage' – which described societies that had become straightjacketed by formal bureaucratic procedures of all sorts. Bureaucracies are traditionally in charge of authentication. This raises the question of how their functioning encounters and collides with transjurisdictional blockchains, which promise to perform similar functions, but rely on a incompatible legitimacy. Here it may be necessary to digress briefly on the principles of distributed ledgers.

Essentially, a blockchain is a register or ledger in which all transactions within an exchange system are recorded. What makes it distinctive is that it is a shared, distributed ledger that, through cryptographic-enabled validation processes, purports to record an immutable record of all valid transactions. No legal power is allocated to those functions. The ledger's integrity is maintained by a dispersed and open-ended

number of miners who provide computing power to cryptographically validate all transactions. This is crucially important for any form of digital money and authentication more broadly because it disallows forgery. Nakamoto's design for the blockchain was specifically to enable digital money, but people quickly realized that the same architecture could also be used to keep a record of any assets, and quite a large industry soon emerged as entrepreneurs, venture capitalists and corporations saw its potential (Swan, 2015).

Comparing bureaucracy and blockchain-based authentication, one can see some remarkable differences. Especially important appears to be the reliance on private resources for providing a service of general interest (Morabito, 2017). It is certainly a concrete risk that, if down the line public and private interests diverged, there would be no mandate nor legal tool to force globally scattered pseudonymous actors to act in the public interest of a specific jurisdiction.

Lastly, if services traditionally provided by state bodies come to be displaced by blockchain powered alternatives, then states will face issues related to the key function that statistical data and practices have in their bureaucracies. States have developed machinery to collect and manage the data for exercising their functions. If data become state-agnostic as the infrastructure that produces it, it is impossible to connect it to state databases.

Organizing in the open: the scene

Political science perspectives may be roughly divided based on whether one sees people as bad and states as good (paternalistic) or vice versa (libertarian). If the individual/state dichotomy crystallized within the Westphalian order and the subsequent Enlightenment to give us the good and the bad, we should not omit – following an old Western movie – the 'ugly' that messes up this neat dichotomy. The root problem that cryptocurrencies pose to social science's attention is that they decouple public interest from the state with a novel, globally spread alliance of individuals and non-state/private relations. This form of sociality is somewhat elusive of state-based social order, and manifests itself in tax issues, money laundering, illegal trades, huge hacks, etc.

Formal organizations of all sorts used to occupy a meso level between individuals

and society. Online organizing epitomized here by cryptocurrencies exceeds and eludes states, and remains partly disjoined from corporations, which is why we need to name this organizational phenomenon. If the classics of sociology can be of help here in defining cornerstones, the distant debate between Durkheim (who formalized an idea of society as something more than the sum of individuals) and Simmel (who preferred 'sociability' as more immanent to social relations) is worth considering. The organizational form that makes cryptocurrencies is clearly more than the sum of individuals because it shows not only atomistic behaviors but sociability – see "just us" in Nelms, Maurer, Swartz, and Mainwaring (2018). Interestingly, this organizational form does not strengthen existing formal organizations, which are rather obstacles to their organizing (Czarniawska, 2013).

What is needed is a vocabulary and perspective to help make sense of the frictions between states and cryptocurrencies, and organizing in the open by extension. The concept of 'scene' can be revealing in the understanding of the sociality cryptocurrencies live off and the way they exercise influence. A scene is a shared setting where people act around common interests and values. Instances of this meaning of scene can be found in common expressions like Trekkie scene, electronic music scene, LGBTQA+ scene, etc. Those scenes:

• have no clear boundaries (cinematic, music or sexual inclinations may affect any aspect of people's social life) but are not always visible,

• do not define the entirety of its participants (liking science fiction may not define a professional occupation),

• they can be powerful (the 1960s as a cultural phenomenon would not have happened without its music) and quite transient at the same time,

• they may have leaders and shared mythologies of reference (like Star Wars) but they are neither necessary nor stable (George Lucas tried and failed to control the imaginary he originated),

• they cut across but are not independent from traditional sociological groupings (age, class, ethnicity, gender, education).

Scene resonates with Bourdieu's notion of field, Goffman's dramaturgical take on society, and Simmel's concept of sociality. An important attribute of the scene is that it has no clear boundaries, which marks it off as distinctively different from the states. At best, a scene's boundaries are ambiguous, and continually exceeded which

means one can never clearly define the entirety of the scene's participants. Compared to the idea of space, scene inherits the theatre imaginary: stage/backstage, mise-en-scéne, actors/acting, divas, customs and masks, behind the scene, etc. In particular, scene recalls Goffman's dramaturgical distinction between frontstage and backstage, but cryptocurrencies require to add to that what happens above the stage (state and other institutions) and below the stage (the actual functioning of the digital infrastructure of authentication that works invisibly and constantly).

Moving back to Simmel's idea of money as a claim upon society, despite common assumption, for Simmel society and the state are not necessarily isomorphic with one another. Indeed, Simmel himself may have provided a suitable concept, *Vergesellschaftun*g. This term has different meanings; here it is intended as 'form of association', which is characterized by 'sociability':

the art or play form of association, related to the content and purposes of association in the same way as art is related to reality... Associations are accompanied by a feeling for, by a satisfaction in, the very fact that one is associated with others and that the solitariness of the individual is resolved into togetherness, a union with others. (Simmel & Hughes, 1949)

So, sociability refers to association and coziness, which suggests that society, for Simmel, is defined as individuals connected by interaction. These forms of association are crucial here because they highlight that society is not a thing per se, but a set of events or practices that overcome the individual/social dichotomy. Compared to society qua state, 'forms of association' is a much more fluid and even playful concept that focuses on immanent social relations rather than an abstract notion like society that exists above and independently from individuals. Scenes, then, are instantiations of particular forms of association, as in, for instance, the 'jazz scene', or the 'hip-hop scene'. Going around dressed as a Stormtrooper has currency only within the Star Wars scene, even if it says something also to the others passing by. Gifting a nail leather jacket to a jazz enthusiast may be interpreted as a provocation, and so on. From this perspective, cryptocurrencies are best seen as a claim upon a scene, intended as a form of association – rather than a claim upon society (qua state) – or as a claim upon the potential and continuous becoming of social relations that might or might not be influenced by the value of any particular form of money.

The notion of scene also introduces a phantasmatic dimension to organizing, in that the identity of actors in the scenes is routinely ambiguous and often deliberately masked. In fact, a feature of the cryptocurrency is that we routinely have action without actors. What we found was that scalable and publicly accessible computing resources coordinate actions without necessarily constituting readily identifiable actors and identities. This organizational mode can be well captured theoretically by Czarniawska (2014) emphasis on actions and action-nets rather than stable actors (or actornetworks) with attached roles and identity. From this perspective, organizations are products of practices rather than their prerequisite, and only exist as long as they are performed (Nicolini, 2012).

Conclusion

A peculiarity of cryptocurrencies, as much as with music preferences, is that they are not replicated here and there like projects or best practices, like Hirschman (2014) who noted that for years after the Second World War, every country with a river valley was compelled to have a programme resembling the Tennessee Valley Authority. Cryptocurrencies, as much as scenes, grow/scale or do not. This invites to take a new angle on a traditional sociological distinction: the link between micro and macro. Typically, the micro is focused on individuals, small groups and families, while the macro includes institutions, organizations, social classes and states. Hobbes articulated one link between the two domains wherein the micro struggle between individuals – in a war of all against all – gets translated through a utilitarian calculus into the idea of the Leviathan, which is then realized in the sovereign nation-state. This paper takes a different tack: the concern is not with how macro-actors (or social order) come to be, but on how the scene as a mode of organizing, by cutting across levels, show some limits state and formal organizations. In conclusion, cryptocurrencies as scene exceed community, network, organization, group, and society, which appear to be inadequate concepts for describing this phenomenon and, by extension, open organizing in the digital society.

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