

# Smart decentralization? The radical anti-establishment worldview of blockchain initiatives

Gábor SOÓS

Senior Research Fellow, Hungarian Academy of Science, Centre for Social Sciences, Institute for Political Science

[soos.gabor@tk.mta.hu](mailto:soos.gabor@tk.mta.hu)

## Abstract

**Objectives** In all probability, cities will use blockchain technologies to become smart. Thus, the worldview of initiatives unavoidably will influence the politics of smart cities. This paper explores into the values and shared understandings of the various startups that rely on the blockchain. **Prior work** The research relies on previous studies on blockchain applications and the ideas of cyberlibertarianism. **Approach** The study especially focuses on the discourse of two concepts, privacy and decentralization, in the intellectual history of cyberlibertarianism. **Results** First, blockchain projects represent a challenge to the establishment by developing a counter-economics. Their goal is money without banks, countries without politicians and companies without managers. Cryptocurrencies intend to disrupt the financial sector, decentralized applications transcend nation states, and the blockchain makes corporate bureaucracies superfluous. Second, the counter-economics of blockchain projects is a new wave of cyberlibertarianism. It also believes in the liberating role of Internet technology, which are expected to recreate individual freedom and government-free cooperation. However, the new wave is specific as it is more privacy and decentralization oriented (as opposed to web 2.0 cooperation), it has a new technological core (the blockchain), corporations are portrayed as enemies (as opposed to the Californian Ideology), and it is largely business-oriented and capitalist (cooperation is explicitly created by self-interest, as opposed to voluntarism or philanthropy). **Implications** If the blockchain becomes an all-influencing phenomenon in our everyday life, the worldview of its proponents soon becomes the topic of academic and political discussions. **Value** This paper sheds light on the ideological content of seemingly technical projects, that may influence smart governance to a significant degree.

**Keywords:** libertarianism, cyberlibertarianism, self-government, decentralization, privacy, blockchain

## 1. Introduction

In the 1990s, the Internet seemed the last frontier, a place where freedom rules. Individuals as well as their associations were supposed to freely communicate and organize themselves in the Internet, far from any governmental or corporate influence. This lack of control over the use of the World Wide Web and emails seemed so wide in the world that the news often covered the potential threats of the Internet and politicians liked to present it as a place where organized crime and porn flourish.

Nowadays, the same accusations are frequently made at Bitcoin. It is portrayed as a means of drug dealers, kidnapers and tax dodgers. The uncontrolled nature of the first and most significant cryptocurrency causes fears, often fueled by established financial interests that are threatened by fintech innovations. At the same time, proponents also repeat arguments that are similar to those of the 1990s: Our world is ruled by governments and corporations that spy on our data, as the scandals of mass surveillance clearly manifest, and dominate and manipulate our everyday life by the law or social media. According to this reasoning, our personal freedom must be defended by technological innovations that restore privacy and re-decentralize society.

This paper aims to demonstrate that today's blockchain projects inherited many of the ideas of the previous two waves of this thinking, cyberlibertarianism, and that not only do they profess the value of decentralization and privacy, but the blockchain movement actually implement them in the form of various startups (Initial Coin Offerings or ICOs).

## **2. Waves of cyberlibertarianism**

Cyberlibertarianism or technolibertarianism is a political philosophy. Like libertarianism in general, it advocates liberty as the main organizing principle of social, political and economic life. The specificity of cyberlibertarianism is its belief in the liberating role of technology, especially the Internet. It proposes to solve the problems of society, economics and politics by maximizing the freedom of actors on the Internet and their voluntary cooperation, and minimizing the influence of state coercion. (For a longer, though partisan, discussion: Thierer & Szoka, 2009)

In my understanding, cyberlibertarianism has had three waves so far, as discussed in the three parts of this section.

### **2.1. The 1990s**

The Internet and other information technologies became mature by the 1990s. As the Internet became a household name, a public debate arose about its impact on the social, cultural and political life. From several sources, a new kind of thinking was formed about the liberating potential of the cyberspace.

#### **2.1.1. The internet exceptionalism**

Early cyberlibertarianism grew out of a Utopian vision of the Internet as a special space for the exchange of information without the interference of government regulation. There was a strong feeling that policy-makers would not understand what this culture meant and what advantages might bring. They concluded that the Internet should remain unregulated and Internet citizens freed from government control.

Barlow in his famous *A Declaration of the Independence of Cyberspace* enthusiastically expelled governments from the world of the Internet: "Governments of the Industrial World, you weary giants of flesh and steel, I come from Cyberspace, the new home of Mind. On behalf of the future, I ask you of the past to leave us alone. You are not welcome among us. You have no sovereignty where we gather." (Barlow, 1996) This document was published in 40,000 websites (Wikipedia, 2017), which demonstrates the Zeitgeist.

Another manifesto, co-authored by Alvin Toffler, *Cyberspace and the American Dream: A Magna Carta for the Knowledge Age* visions the great transformation called Third Wave makes centralized control ineffective, unnecessary and ultimately harmful. Demassification by information technologies "spells the death of the central institutional paradigm of modern life, the bureaucratic organization. (Governments, including the American government, are the last great redoubt of bureaucratic power on the face of the planet, and for them the coming change will be profound and probably traumatic.)" (Dyson et al., 1994).

### **2.1.2. *The californian ideology***

The Californian Ideology was conceptualized in Barbrook and Cameron's essays (Barbrook and Cameron, 1995b, 1995a, 1996). Their writings became highly influential, since they described very well the view of the emerging techno-class of the Silicon Valley, and formulated the basic criticism of this ideology.

Politically speaking, the Californian Ideology openly mixed West coast liberalism and free market capitalism, the counter-culture of the Sixties and the laissez-fair policies of Ronald Reagan, "the free-wheeling spirit of the hippies and the entrepreneurial zeal of the yuppies" into "a heterogeneous orthodoxy for the coming information age" (Barbrook and Cameron, 1995b).

Their school of thought professes the inevitable victory of the high-tech free market. Like the Communist Manifesto, it has a fatalistic vision of history. The development of technology determines the future of humanity. "If only for competitive reasons, all major industrial economies will eventually be forced to wire up their populations to obtain the productivity gains of digital working." (Barbrook and Cameron, 1995b) This historic process leads to the rule of a virtual class and its cybernetic businesses.

The Californian Ideology is not only a celebration of capitalism and technology, and their transformative power. It also bequeathed a culture of romantic individualism which are protected by information technologies and can be maintained outside the sphere of state intervention or even society. As real libertarians, the followers of the Californian Ideology were hostile to democracy and solidarity.

### **2.1.3. *Cypherpunks***

The cypherpunk movement represented a more radical form of cyberlibertarianism. It started in the 1970s when certain cryptographic methods became available to civilians, too. Some people believed that this would induce social and political changes, as individuals became capable to protect their privacy against government control. These ideas led to a movement in the early 1990s, the cypherpunks. The term is a combination of cipher (referring to cryptography) and cyberpunk (a stream of science fiction).

Cypherpunks vision a society in which citizens use cryptography to create their online privacy. As Hughes *A Cypherpunk's Manifesto* claims, "We cannot expect governments, corporations, or other large, faceless organizations to grant us privacy out of their beneficence. It is to their advantage to speak of us, and we should expect that they will speak. [...] We must defend our own privacy if we expect to have any. We must come together and create systems which allow anonymous transactions to take place. People have been defending their own privacy for centuries with whispers, darkness, envelopes, closed doors, secret handshakes, and couriers. The technologies of the past did not allow for strong privacy, but electronic technologies do." (Hughes, 1993)

Cypherpunks have a real legacy. Satoshi Nakamoto initiated Bitcoin in the cypherpunk mailing list and Julian Assange, founder of Wikileaks, wrote a book titled *Cypherpunks: Freedom and the Future of the Internet*.

## **2.2. Cyberlibertarianism 2.0**

The influence of the first cyberlibertarians that individuals would be liberated and empowered in the networked information society largely got discredited after the burst of the dotcom bubble. The developments of the mid-2000s have brought new hopes to those who were looking for individual freedom through technology. The increasing popularity of MySpace, YouTube, Flickr, del.icio.us and Facebook seemed to offer new opportunities.

Web 2.0 refers to a thinking of web and business development which focuses on content generated by users. As a consequence, the design of websites lays great stress on usability and user experience. YouTube enabled everyone to publish their videos. MySpace and Facebook provided a service to make social connections virtual. Social networks were mushrooming, even in corporate intranets where companies tried to reorganize the social connections of their workforce. Sharing became a buzzword.

New theories emerged, claiming that Web 2.0 technologies create a do-it-yourself democracy. A global democracy that is independent of the regulations of the nation-states. Transnational computer networks transcend borders and jurisdictions. This discourse is libertarian, for it presupposes the cooperation of individual users who make contacts with other digitally. Unlike the purely negative freedom from constrain of the 1990s, cyberlibertarianists of the Web 2.0 believed that DIY citizens empower themselves by contributing with their content. (Dahlberg, 2010)

The discourse of cyberlibertarianism 2.0 was killed by the tech companies. It turned out that Facebook and Google, owner of YouTube since 2006, were not neutral service providers. Rather, they control our communication and, increasingly, our social life.

## **2.3. The age of the blockchain**

The birth of Bitcoin marks the beginning of cyberlibertarianism 3.0. This wave revolves around the technology of the blockchain, as the cyberlibertarianism of the 1990s had hopes for the connectivity of the Internet, and the 2000s for the social networks. Section 3 is devoted to the discussion of the new technology and the project exploiting it. Section 4 returns to the ideological continuity of cyberlibertarianism by presenting the central concepts of the blockchain projects.

# **3. Blockchain projects**

## **3.1. The blockchain**

The blockchain is a distributed ledger that keeps track of transactions. It is a system that is capable to maintain a dataset without any central authority. The centralized management can be avoided by distributing the dataset on the disks of many computers by means of a peer-to-peer system (P2P, similar to torrent distributions). Distribution means that literally millions of computers, called full nodes, store the complete dataset,

i.e., all transactions ever made in the history of the blockchain. Any effort to change the past would require a modification in all the computers. The distributed nature of the peer-to-peer system makes the blockchain practically immutable. (Bashir, 2017; Drescher, 2017)

Therefore, decentralization creates trust. On the one hand, blockchains are immutable by design, so the registration of anything valuable is kept securely. On the other hand, the blockchain is the trust machine, as it makes trustless transactions possible. The parties do not need to trust each other or any middleman. (McElroy, 2017b)

What the blockchain is designed to solve is the problem of trust: How can a digital solution reach agreement upon the content of the ledger? How can it achieve that in a hostile environment where lots of ignorant or malicious actors do not care about other people's interests or even try to exploit others? The response is the consensus model that allows transactions between two parties "directly with each other without the need for a trusted third party" (Nakamoto, 2008). No authority or institution is required to record a deal. (For a detailed technical discussion, see Judmayer et al., 2017:61-66.)

The idea of a new type of ledger may sound boring and limited to very specific economic activities such as accounting. The projects presented below hopefully shed some light on the versatile and, as startup entrepreneurs love to say, disruptive nature of the blockchain.

### **3.2. Case studies**

Blockchain projects have been launched in all shapes and sizes for the recent years. Here four blockchain applications will be presented to illustrate their organizing principles:

- the largest financial bitcoin project, Bitcoin;
- the largest platform for the creations of all sorts of decentralized applications, Ethereum;
- a project that aims to replace the Web, Substratum;
- and an application for digital asset management, Po.et.

#### **3.2.1. Bitcoin**

Bitcoin is by far the most important cryptocurrency. Its market cap is 200 trillion dollars, which still makes more than 60 percent of the total market value of cryptocurrencies. Bitcoin is also the most known cryptocurrency for the public, or the only known one for most people. As the flagship project of the blockchain world, it is revealing to see how much it roots in the ideas of privacy and decentralization.

The beginning of Bitcoin, a computer-based financial product, has a romantic atmosphere. On August 18, 2008, a certain Satoshi Nakamoto, who had actively contributed to the mailing list, posted a paper titled *Bitcoin: A Peer-to-Peer Electronic Cash System* to the cypherpunk mailing list. The interesting element is that Satoshi Nakamoto does not exist. Although several people have since claimed authorship, none of these gained credibility. The reason why the author or authors of the paper concealed his or their identity is unknown. One of the speculations is that Nakamoto was afraid that a

privacy-oriented new currency would be declared illegal and he would lose his freedom to promote the use of Bitcoin. This explanation can be supported by the deep mistrust of governments and banks that are present everywhere in the paper.

The white paper is technical in its nature, detailing the system of the proposed cryptocurrency. As McElroy (2017a) claims, Nakamoto's paper was libertarian, even anarchist in some respect. Even if the members of the mailing list were cryptographers, the white paper as well as Nakamoto's other posts contain indirect political references or motivations, which are against banks and inflation, and for capitalism, decentralization and privacy. The Genesis block, the first element of the Bitcoin blockchain quotes a headline from the front page of The Times: "*The Times 03/Jan/2009 Chancellor on brink of second bailout for banks.*" Technically, it is a proof of the date. The well-thought nature of Nakamoto's communication suggests that the choice of the sentence is more than an authentication: in all probability, it aims to convey a message about the state of the economy and an expectation about Bitcoin, as the representative of an alternative economy.

From our point of view, Bitcoin is different from today's monetary systems in two characteristics: decentralization and anonymity.

Modern economies relies on centralization. Their financial systems are organized by a central authority, the state. It assumes the role of setting regulations that provide incentives and disincentives for certain economic activities. Government policies in the form of laws and taxes manipulating social actors and deeply influencing the everyday life of businesses and, therefore, individuals. Large economic actors exert disproportionate influence on the economy by lobbying government officials to alter (sometimes hijack) policies.

In modern economic systems, a major instrument of the central authority is its right to mint money. The regulation of money supply has an enormous influence. Historically speaking, that is a new phenomenon. Money made of precious material had its own intrinsic value in the dawn of currencies. This was a decentralized system, as everyone could buy and sell the rare material that was used as a means of exchange. The centralization of the monetary system came with the emergence of the nation states, which issued certificates representing gold and enforced the exclusive use of their coins and banknotes in their respective national territories. This presupposed a certain amount of trust in the bank, as the system operated on the assumption that one could exchange certificates (money) for gold or silver at any time. The gold standard was then replaced by the modern monetary system in which banknotes and coins do not represent any precious material as certificates. The so-called fiat money relies entirely on the trust in the government and the monetary system it maintains. This faith in banks and government policies was shaken by the Great Recession.

Bitcoin strives to reverse this process and make money decentralized again. It provides the key features needed for a decentralized cryptocurrency (see Antonopoulos, 2017). First of all, it is capable to store transactions by means of a reliable method. What is even

more important, records are kept in an irreversible way. Technically, that is achieved by the distribution of the information, the blockchain, to many computers or nodes. Anyone with Internet access may open an account (or as many as they wish) and anyone with a strong enough computer may become a miner, i.e., a bookkeeper. The supply and demand set the fees for miners in a true capitalist spirit. The cryptocurrency works without a central authority and beyond and frontiers. Bitcoin is a very smart decentralization.

Privacy is secured by cryptographic methods. The blockchain is public, as its distribution to many computers ensures the preservation of records and their irreversibility. Bitcoin is fully transparent in the sense that anybody can follow any account and its transactions. Therefore, anonymity is not fully guaranteed in Bitcoin due to the traceability of transactions. The common fears of the criminal activities with the help of Bitcoin are exaggerated. It is certainly more easier to follow the money than in the case of cash.

What is not known is who owns the accounts. Bitcoin provides pseudonymity, i.e., the real names of owners are hidden. As it turned out, even the name of the founder is a pseudonym. The number of accounts is not limited, so it is not uncommon that multiple addresses are created for different purposes or even for every payment. The most effective method of increased privacy is to avoid associations by isolating transactions. Several altcoins, like Dash, Monero or Zcash, offer solutions to secure true anonymity for users. The spirit of privacy is strong in the crypto community.

### **3.2.2. *Ethereum***

Ethereum is digital decentralization on steroids. While Bitcoin offers solution for a specific kind of decentralization, Ethereum provides a platform on which any kind of decentralized organization can be developed in quickly and in a secure manner.

Ethereum was proposed by Vitalik Buterin. As a talented programmer, he met with Bitcoin at the age of 19. He founded a Bitcoin Magazine and became a proponent of the then brand new cryptocurrency. In 2013, Buterin published a white paper in which he argued that Bitcoin needed a scripting language in order to serve as a platform of intelligent applications. The core team of Bitcoin showed no interest, so Buterin formed a developer group with Charles Hoskinson, head of the Bitcoin Education Project, Anthony Di Iorio, Executive Director of the Bitcoin Alliance of Canada and founder of the Bitcoin Decentral coworkingspace in Toronto, and Mihai Alisie, founder and chief editor of Bitcoin Magazine. They established the Ethereum project in January 2014. Vitalik Buterin remained the main face of the network. The myth of this young man, born in 1994, is so strong that the exchange rate of Ether collapsed at the end of June, 2017, as a consequence of the (false) news that he died in a car accident.

Ethereum has its own programming language called Solidity (Ethereum, 2017). Although four languages are allowed in theory, Solidity is the primary means of writing code in the Ethereum project. The language was originally proposed by Gavin Wood in 2014. Wood contributed to the full development within the Solidity team of the Ethereum project (Gavin Wood, Christian Reitwiessner, Alex Beregszaszi, Liana Husikyan, Yoichi Hirai and others). Other blockchain projects like Monax also use Solidity.

This statically typed, high-level language is designed for developing smart contracts that are able to run on the Ethereum Virtual Machine. A contract is a combination of some code, which define the functions of the contract, and data, which can be found on the Ethereum blockchain. For more information see the documentation of the language (Solidity Team 2017).

Solidity a Turing complete programming language, that is it can simulate a universal Turing machine. Turing completeness refers to the computationally universal nature of a language. Practically speaking, one can compute anything on a Turing complete system. This feature of Ethereum clearly differentiates it from Bitcoin, which is limited to certain predefined functions. Bitcoin is like a specialized gadget, while Ethereum is like a full-featured, versatile computer. Actually, Ethereum people often refers to Ethereum as a global shared computer or World Wide Computer (while Bitcoin is only a shared global ledger).

The practical use of Solidity and the Ethereum Virtual Machine is that they allow developers, entrepreneurs as well as programmers, to design and issue new decentralized applications that store their data on the Ethereum blockchain. This flexible framework provides limitless opportunity for the creativity of startups. So far the typical use cases of the Ethereum platform are as follows.

- Cryptocurrencies.
- Autonomous organizations.
- Prediction markets.
- Digital rights management.
- Gambling applications.
- Crowdfunding platforms.
- Decentralized marketplaces.
- Identity systems.

The core software of Ethereum is developed by the Ethereum Foundation, a Swiss non-profit organization. The project is financed by a crowdfunding summer of 2014. The token issued in the crowdfunding is called Ether. It was designed as a tool to pay for the fees of the blockchain, but it is becoming a cryptocurrency with a high exchange value.

### ***3.2.3. Substratum***

Substratum aims to replace the existing World Wide Web with an alternative one. This project develops a open-source platform for the decentralization of the web to provide free and unrestricted access to content. This “Web 3.0” would use strong cryptography to deliver content in a secure way without the need for VPNs or Tor. The Substratum network promises to create a parallel Internet. The critical points of the Internet, controlled by regulators and corporations, will be replaced in the network with independent nodes, run by ordinary people who own a computer. The route between the user and the web content is fully encrypted. An Ethereum-based cryptocurrency (SUB) is



used to reward hosts on a pay-per-click basis. Otherwise, the Substratum Network will run its own blockchain for its operations. (Substratum, 2017)

Substratum has explicit political goals. It returns to the dream of the information superhighway, which is neutral and links independent individuals. Substratum wants to end censorship and georestriction. The founder of the project, Justin Tabb, explicitly refers to China and Iran, where the Substratum network may become the most useful (ICO Alert, 2017).

Substratum embodies the values of both decentralization and privacy, as it offers an alternative to Internet corporations and provides privacy against government control.

#### **3.2.4. Po.et**

Po.et is a blockchain project running on top of the Ethereum network. It seeks to manage intellectual property rights in a decentralized manner. Publishers and content creators like journalists or photographers can use Po.et to register their property or license creative works.

According to its white paper (Po.et, 2017), Po.et aims to solve three key problems about digital asset ownership:

- Utilization: Who can use, license, or repurpose this asset?
- History: What is the origin of this asset and what is its trajectory?
- Ownership: Who owns a particular digital media asset?

Digital content mostly lacks metadata information like ownership or licensing conditions. What is worse, metadata can be changed, which allows the improper use of content. Po.et offers the technology to register ownership and changes of the work. Its identity management provides hashing that provides creative works with a totally unique identifier. Any alteration of the work results in a change of the hash, even the smallest one. The blockchain records the original status and any alteration in an immutable way. Po.et issues an authentication badge that verifies the asset, which can be a photo, legal document or academic research paper. The later phases of the project will establish a licensing system, payment solutions and immutable portfolios of publications and creators. The system potentially can replace e.g. the ISBN system of book registrations.

The project is developed by a foundation registered in Switzerland, and financed by an ICO. The Po.et token (POE) is ERC20 compatible, i.e., built on the Ethereum blockchain.

Po.et is a good example for a nonfinancial blockchain application that decentralizes a market.

### **3.3. Corporate blockchain**

I have so far presented blockchain projects as disruptive activities. That does not mean that big business has not discovered the potential of the blockchain. Several corporate projects also experiment with the new technology. Nasdaq introduced blockchain

technology in its Private Market for keeping records of pre-IPO trading. This eliminates middlemen such as auditors, legal experts, bookkeepers and consultants before a company goes public. (Nasdaq, 2016) IBM launched the IBM Blockchain Platform that supports businesses with an integrated platform for creating and developing blockchain applications. Its goal is thus similar to that of Ethereum, but IBM can offer turnkey business solutions as well as consultancy. Oracle, Accenture, Intel and Hitachi also have blockchain plans. The Linux Foundation, a nonprofit funded by the big business to back the development of Linux and other open source projects, develop Hyperledger for companies to host blockchain networks ([hyperledger.org](http://hyperledger.org)).

The corporate blockchain is an innovation that may do with the blockchain what corporations like Facebook, Google or Apple did with the Internet: the centralization of the social media, email, search, mobile and other services. Although anyone can operate such services, and many do, the giant tech companies dominate their respective market.

One cannot know right now where this tendency goes. Central control can solve several problems arising in the messy open-source world. On the other hand, a key element of Bitcoin and other blockchain projects is missing in proprietary systems: the peer-to-peer organization that adds decentralization to the mix. So the advantages of corporate backing is counterweighted by more technical vulnerability (the ledger is on central premises, not in a distributed network), business uncertainties (what if the company shuts down the service) and privacy concerns (users may not know if closed systems are compromised).

#### **4. The counter-economics of the blockchain**

Obviously, it is unclear whether the particular projects presented above gain will ground and reach mass adoption. The point is that the blockchain will become an important part of our life in the near future. My claim is that blockchain projects revive the spirit of the Californian Ideology, cypherpunks, and others mentioned in Section 2. A new and potentially influential cyberlibertarianism is emerging.

This paper is part of a research project which will be based on the qualitative analysis of Initial Coin Offerings' (ICOs) white papers and activists' communications on three forums (Reddit, Quora, Bitcointalk), and will provide systematic findings. Some features of the blockchain projects can be observed without systematic content analysis.

##### **4.1. The enemies**

Blockchain projects are business and technical initiatives. Their reasoning is often negative: they state what is wrong in the world and propose a practical techno-solution. Their goal is rarely to formulate some kind of coherent ideology. Rather, they focus on a social need that also serves as a business opportunity.

The enemies are often very clear. They are the established banks, governments, and commercial Internet. The institutionalized economy does not represent simply rivals, blockchain people see it as enemies. Banks are deeply mistrusted. They are often regarded as swindlers who trick ordinary people. The references to 2008 are frequent as many hold banks responsible for the Great Recession. Bankers are portrayed as culprits

who got off the crisis lightly. A moderate, but characteristic comment expressed this sentiment this way: *“Practically, bitcoin solves the problem of trust in society. Which isn't a big deal now when times are good and the economy is growing and banks/governments can do no wrong. But when times are bad and banks/governments are getting away with very sleazy behavior, that's when trust rapidly becomes a very very big deal. In 2008, folks didn't have an alternative outside of bending over and hoping banks/governments didn't screw them too much. And we all know how that turned out. In 2017, crypto allows folks to vote with their wallet if they feel their civilian vote is no longer working.”* (mufinz, 2017a)

Cryptocurrency enthusiasts accuse governments not only of being the accomplices of bankers. There is a strong feeling that governments, and especially the US government, aggressively spy on its own citizens in the name of national security. The references to Snowden and his revelations frequently come up. NSA is suspected to monitor everybody's Internet communications. The government is perceived as a threat to the private life of ordinary citizens. Cryptocurrencies and other blockchain projects like Substratum are expected to help protect individual privacy. Some believe that the discussions in the forums are also observed and manipulated: *“GCHQ/NSA use trolls to harass, intimidate, derail online communities, and destroy the lives of 'hacktivists' (i.e. tech savvy activists) the surveillance agency dislikes.”* (CryptoDonDrapper, 2017 – GCHQ and NSA are intelligence agencies in the UK and US, respectively)

The criticism of tech corporations is less frequent, still recurring element of the discourse on blockchain projects. That also might be a generational question. Many feel that the dream of the 1990s about the free cooperation of individuals on the Internet has been lost. The dominance of tech companies such as Google, Facebook, Apple and Amazon seems an invasion of everyday life and a cultural and social decline.

#### **4.2. Counter-economics**

Blockchain applications offer more than some simple reform but an alternative universe. Bitcoin is a counter-currency that goes beyond the fiat currencies of central banks. Ethereum facilitates the creation of decentralized applications without the need for incumbent political and economic institutions. Substratum makes the services of big tech companies superfluous. Po.et wants to disrupt existing markets of asset management from Getty Images to ISBN by introducing competitive decentralized solutions. One and all, blockchain projects aim to create a global alternative economy.

A quite extreme form is counter-economics or counter-establishment economics proposed by Konkin, as part of his anarchist philosophy called agorism (Konkin, 1983). Counter-establishment economics aims to discredit existing governments by promoting alternative or underground economic activities. Such activities include bartering, self-sufficiency farming and, nowadays, crypto-currencies. Konkin also encourages black market activities counter-economics such as drug trafficking, prostitution and tax evasion. All of these are perceived as peaceful. Counter-economics is hoped to undermine the legitimacy of the state, which leads to total chaos. This is the birthplace of the anarchic and voluntary society, governed by the market. The anarchic new society function without

taxation, wars and coercion. Counter-economics in this sense is revolutionary and, in many ways, illegal.

Although Konkin used the term in a specific sense, counter-economics or counter-establishment economics describe the third wave of cyberlibertarianism so good that I will define the phenomenon with it. The blockchain applications are different from agorism to a large degree because they fully embrace capitalism, believe in self-interest and –in most cases– want to produce profit.

Is the counter-economics of blockchain projects a coherent approach? Atzori may be right: “decentralization through algorithm-based consensus is an organizational theory, not a stand-alone political theory” (Atzori, 2015) It is certainly less than a theory, and perhaps even less than a coherent ideology. Still, certain key values can be identified in the discourse of the new cyberlibertarianism.

### **4.3. Main values**

Blockchain cyberlibertarianism is inherent in practical discourses. Methodologically speaking, that means a combined analysis of pronouncements and practice. As Dahlberg (2010) states concerning cyberlibertarianism 2.0, “the discourse can be read from a combination of statements and practices, rather than from the specific positions of particular commentators or practitioners (who are subjects of multiple discourses).”

Here I discuss three concepts, two are important to the participants of the blockchain discourse, one is not (still, must be analyzed).

#### **Decentralization**

Unlike the previous waves of cyberlibertarianism, blockchain proponents have decentralization as their central value. Blockchain applications are decentralized by design. That partly refers to the their value proposition in business terms that these projects have competitive advantage of not having a central authority.

The arguments of founders and activists also show they take decentralization as their basic principle. They implement decentralization, but they also believe in it. One of the manifestations of this thinking is Arvico’s *A Crypto-Decentralist Manifesto*. This says that “We decentralists are committed to keeping blockchains open, neutral and immutable. We’re committed to keeping blockchain systems decentralized. This informs all our actions and positions towards any developments in the crypto world and beyond.” (Arvico, 2016)

#### **Privacy**

Bitcoin roots both socially and intellectually in the cypherpunk movement, which focuses on guaranteeing privacy by means of cryptography. Altcoins, the cryptocurrencies that were created after Bitcoin, all focus on the privacy of their users. Some of them (e.g. Dash, Monero or Zcash) even better than Bitcoin, making their use completely untraceable. What matters here is not their actual success in implementing privacy, but their efforts to reach that. What is more, blockchain applications respond to the actual

need of users. The discussions e.g. on the Reddit often revolve on the expected quality of blockchain project to secure the anonymity of transactions and protect users against the surveillance activity of governments.

### **Ambivalent democracy**

One value seems conspicuously missing in the discourse about blockchain applications. This is democracy. There is much ambivalence here. Libertarians oppose the majority principle of democracy. Moreover, minimal government makes elections and political democracy irrelevant. No cyberlibertarian is different in this respect.

On the other hand, bitcoin projects have their own governance. Majority-based mechanisms (Proof of Work, Proof of Stake) provides ways to make changes once the blockchain application started to operate. This is clearly a democratic method. (For a longer discussion, see Reijers et al., 2016.) The very characteristic feature is that there is no constitution and its interpretation. Everything is in the code, and consensus algorithms follow the pre-programmed rules. Moreover, ownership is deemphasized in open-source projects. While owners have the moral right to gain profit as entrepreneurial benefit, they, by design, cannot use their application as an instrument of oppression or exclusion.

Another point is that cyberlibertarianism does care about equality. The Californian Ideology is explicitly anti-racist. A Declaration of the Independence of Cyberspace says: “We are creating a world that all may enter without privilege or prejudice accorded by race, economic power, military force, or station of birth.” (Barlow, 1996) This equality of free individuals characterizes cyberlibertarians in general. As another form of fairness, Web 2.0 projects like Wikipedia want to contribute to the equality of knowledge. This kind of meritocratic inclusion appears in other projects as part of the decentralization efforts (e.g. in Po.et).

### **5. Conclusions**

The founders and developers of blockchain projects are not philosophers. Still, their ideas imply a political philosophy as any project in the history of business. On this matter, I have two claims.

First, blockchain projects represent a challenge to the establishment by developing a counter-economics. Their goal is money without banks, countries without politicians and companies without managers. Cryptocurrencies intend to disrupt the financial sector, decentralized applications transcend nation states, and the blockchain makes corporate bureaucracies superfluous.

Second, the counter-economics of blockchain projects is, in my view, a new wave of cyberlibertarianism. The present wave of cyberlibertarianism also believe in the liberating role of Internet technology, which are expected to recreate individual freedom and government-free cooperation. The new wave is specific and a new phenomenon because it is more privacy and decentralization oriented (as opposed to web 2.0 cooperation), it has a new technological core (the blockchain), corporations are portrayed as enemies (as opposed to the Californian Ideology), and it is largely business-oriented and capitalist

(cooperation is explicitly created by self-interest, as opposed to voluntarism or philanthropy).

The research agenda of the blockchain cyberlibertarianism, as I see it, should include at least two questions. First, a fine-grained intellectual history is needed that shows how ideas have been transferred from the 1990s till today. Second, an analysis of white papers and activists' communications on key forums (Reddit, Quora, Bitcointalk) should unfold the blockchain discourse based on a thorough methodology.

## References

1. Antonopoulos, A. M. (2017), *Mastering Bitcoin: Programming the Open Blockchain*, O'Reilly Media.
2. Arvico (2016), 'A Crypto-Decentralist Manifesto'. <https://ethereumclassic.github.io/blog/2016-07-11-manifesto/>
3. Atzori, Marcella (2015), 'Blockchain technology and decentralized governance: Is the state still necessary?' <http://www.the-blockchain.com/docs/Blockchain%20Technology%20and%20Decentralized%20Governance%20-%20Is%20the%20State%20Still%20Necessary.pdf>
4. Barbrook, R. & Cameron, A. (1996), 'The californian ideology', *Science as Culture* 6(1), 44–72.
5. Barbrook, R. & Cameron, A. (1995b), 'The californian ideology', *Mute* 1(3).
6. Barbrook, R. & Cameron, A. (1995a), 'The californian ideology', *Alamut* .
7. Barlow, J. P. (1996), 'A Declaration of the Independence of Cyberspace', Electronic Frontier Foundation. <https://www.eff.org/cyberspace-independence>
8. Bashir, Imran (2017), *Mastering Blockchain: Distributed Ledgers, Decentralization and Smart Contracts Explained*, Packt Publishing.
9. CryptoDonDrapper (2017), 'Bitcoin could be worth 1000x today's value within two years, or it could be worth nothing given the community's trajectory lately. Here are my two millibits on our possible future(s)'. [https://www.reddit.com/r/Bitcoin/comments/20044n/bitcoin\\_could\\_be\\_worth\\_1000x\\_todays\\_value\\_within/](https://www.reddit.com/r/Bitcoin/comments/20044n/bitcoin_could_be_worth_1000x_todays_value_within/)
10. Dahlberg, L. (2010), 'Cyber-libertarianism 2.0: A discourse theory/critical political economy examination', *Cultural politics* 6(3), 331–356.
11. Drescher, D. (2017), *Blockchain Basics: A Non-Technical Introduction in 25 Steps*, Apress.
12. Dyson, E.; Gilder, G.; Keyworth, G. & Toffler, A. (1994), 'Cyberspace and the American Dream: A Magna Carta for the Knowledge Age'. <http://www.pff.org/issues-pubs/futureinsights/fi1.2magnacarta.html>
13. Ethereum (2017), *Solidity*, <https://solidity.readthedocs.io/en/develop/>
14. Hughes, Eric (1993), A Cypherpunk's Manifesto. <https://www.activism.net/cypherpunk/manifesto.html>
15. ICO Alert (2017), 'Substratum — decentralizing the Internet'. <https://www.youtube.com/watch?v=Kfl5CujxA8c>
16. Judmayer, A.; Stifter, N.; Krombholz, K. & Weippl, E. (2017), *Blocks and Chains: Introduction to Bitcoin, Cryptocurrencies, and Their Consensus Mechanisms*, Morgan & Claypool.
17. Konkin, Samuel Edward III (1983), *New Libertarian Manifesto*, Koman Publishing. <http://www.agorism.info/docs/NewLibertarianManifesto.pdf>
18. McElroy, Wendy (2017a), 'The Satoshi Revolution – Chapter 2: Was Satoshi a Libertarian and Anarchist?', <https://news.bitcoin.com/satoshi-revolution-chapter-2-satoshi-libertarian-anarchist-part-4/>
19. McElroy, Wendy (2017b), 'The Satoshi Revolution – Chapter 1: What is a Trustless System? (Part 1)', <https://news.bitcoin.com/the-satoshi-revolution-a-revolution-of-rising-expectations-chap1-part1/>
20. mufinz (2017), 'Comment on "JPMorgan CEO Jamie Dimon says bitcoin is a fraud that will eventually blow up"'. [https://www.reddit.com/r/investing/comments/6zoob0/jpmorgan\\_ceo\\_jamie\\_dimon\\_says\\_bitcoin\\_is\\_a\\_fraud/dmx6tal/](https://www.reddit.com/r/investing/comments/6zoob0/jpmorgan_ceo_jamie_dimon_says_bitcoin_is_a_fraud/dmx6tal/)
21. Nakamoto, Satoshi (2008), 'Bitcoin: A peer-to-peer electronic cash system', <https://bitcoin.org/bitcoin.pdf>

22. Nasdaq (2016), *Building on the Blockchain: Nasdaq's Vision of Innovation*. [http://business.nasdaq.com/Docs/Blockchain%20Report%20March%202016\\_tcm5044-26461.pdf](http://business.nasdaq.com/Docs/Blockchain%20Report%20March%202016_tcm5044-26461.pdf)
23. po.et (2017), *Whitepaper*. <https://po.et/whitepaper.pdf>
24. Reijers, W.; O'Brolcháin, F. & Haynes, P. (2016), 'Governance in Blockchain Technologies & Social Contract Theories', *Ledger* 1(0), 134–151.
25. Substratum (2017), *The Substratum Network: Foundation of Decentralized Web (White Paper)*. [http://substratum.net/wp-content/uploads/2017/08/substratum\\_whitepaper.pdf](http://substratum.net/wp-content/uploads/2017/08/substratum_whitepaper.pdf)
26. Swan, Melanie (2015), *Blockchain: Blueprint for a New Economy*, O'Reilly Media.
27. Thierer, Adam & Berin Szoka (2009), *Cyber-Libertarianism: The Case for Real Internet Freedom*. <https://www.scribd.com/document/20069036/Cyber-Libertarianism-The-Case-for-REAL-Internet-Freedom-Thierer-Szoka>
28. Wikipedia (2017), A Declaration of the Independence of Cyberspace. [https://en.wikipedia.org/wiki/A\\_Declaration\\_of\\_the\\_Independence\\_of\\_Cyberspace](https://en.wikipedia.org/wiki/A_Declaration_of_the_Independence_of_Cyberspace)

All Internet documents were retrieved in November, 2017.