

Blockchain's Role in the Ontological Concepts Development

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ABSTRACT: Blockchain is a new technology based on the idea of decentralization, which means the impossibility of control by governments or any other centralized entity. Studying Blockchain from the viewpoints of the philosophy of politics, economics and the law shows significant changes in the nature of human concepts such as trust, power, institution, money and law. This emerging revolution is driving these concepts from human-controlled system to an algorithmic structure, which would lead to an anarchic, self-sufficient world with self-determinism individuals. This research is an attempt to discover novel ontological changes in the traditional concepts due to the emergence of the new modern technology called Blockchain.

KEY WORDS: Blockchain, Cryptocurrency, Ontology, Algorithm, Concept

1. Introduction

The translating of metaphors, allegories or thoughts into technologic algorithms is an essential component of any innovation (Kera 2019). In this regard, the ground-breaking novelty of Blockchain algorithms was introduced by the pseudonymous author Satoshi Nakamoto (Satoshi 2008). He proposed a mechanism that replaces third-party authority with the decentralized ledger (Ishmaev 2017) which enables the secure transfer of money, assets, and information without the need for an intermediary, such as banks or other financial institutions, ensuring that these goods cannot

be copied or multiplied due to its immutable nature (Trivedi 2019). Bitcoin as a cryptocurrency is the first and perhaps most famous application of Blockchain (Swan & de Filippi 2017), and Ethereum as an automated multi-step process for smart contracts (Jaoude & Saade 2019). This technology has progressed very fast in recent years and urged governments to think seriously about the ways that make them able to control it by codifying new and suitable legislations, especially in the cryptocurrency arena. However, some concerning views believe that this technology will inevitably drive the current world towards a world without intermediaries like governments and banks, namely an anarchic world. The issues of “decentralization” and “self-sufficiency” as the main characteristics of Blockchain technology have been controversial subjects in terms of the possibility of the control of Blockchain-based products, in particular cryptocurrencies, by governments. One much-debated matter is how governments can regulate cryptocurrencies while they are transferred between parties without the need for official financial institutions.

Research on Blockchain is expanding rapidly at the different layers of its concepts and implementation, mainly focusing on the first application of Blockchain, i.e. Bitcoin (Jaoude & Saade 2019). Many significant issues have been raised as regards the political, economic and legal aspects of Blockchain technology, which most of them concentrate on the anarchic nature of the Blockchain technology (Markey-Towler 2018). This is because, Blockchain does not have a central control point and, therefore, it may lead to a change in authority from institutions to computational systems in which all individuals take a role.

There are important questions could be raised about the Blockchain nature, one of which is about the concepts that have been provided by Blockchain and their impacts in the formation of the future of the world. By dealing with this question, this study attempts to provide an opportunity for deepening our understanding of this growing field of technology, discovering new philosophical concepts that would affect all other areas and push the world towards a new political and economic system, and a new power structure.

The research plans, precisely, to concentrate on changes that happened because of Blockchain on traditional concepts, like trust, power, institution and money, government, law, aiming to discuss those concepts ontologically to determine the nature of the changes. To realize this goal, relevant growing literature of Blockchain has been considered. The research plan, generally, is based on doctrinal and qualitative methods and is offered in the form of fundamental research concerned with the theoretical aspects, using both deductive and inductive methods for analysing ideas. It has ignored the technical issues of Blockchain dealing with the concepts directly.

2. Algorithmic trust

The issue of trust is considered an important concept in human interaction and has been duly addressed in the Blockchain ecosystem. However, compared to other traditional systems, addressing “trust” in Blockchain is so different and more intriguing, since, Blockchain, in truth, has been got rid of trust. To explain more, Blockchain networks are trust-less in that it is not necessary to know and trust human parties, just the software (Swan 2018). For example, it allows for the peer-to-peer financial transaction with anonymity (Miller 2019) in which human trust is absent completely (Satoshi 2008). Generally, Blockchain, in fact, is a distributed consensus system in which parties do not need to trust each other in their transactions (De Kruijff & Weigand 2017), and This is because Blockchain has a high degree of transparency and rigorous peer review process where even the most trivial of changes are audited, and thus nobody needs to trust anyone (Hillebrand 2018).

All those mentioned above imply that the trust concept has been transferred from human to computer. It means that a new form of trust system called “algorithmic trust” has been created, which is significantly different from the traditional type of trust that was between human agents (Swan & de Filippi 2017). Therefore, Blockchain is a trust-building technology which creates trust through an *Algorithm* as a replacement for traditional mechanisms (Swan 2018). It can be said that an essential change has happened for traditional instruments which build trust by third-parties. Trust has been distributed in the Blockchain decentralized ecosystem where

no third-party has control of the data (Jaoude & Saade 2019). For example, one of the most important applications of Blockchain, which have changed our understanding of trust, is in the transfer of money. Blockchain provides an electronic payment system by cryptographic proof instead of trust, allowing people to transact with each other without asking for third party's confirmation (Satoshi 2008).

There is a significant cause beyond emerging new conception and also a new instrument for building trust. Blockchain as a new instrument has appeared and is starting to see wide adoption (Browne 2017), because trust has waned in many institutional systems, especially in traditional financial institutions, which have failed to deliver results (Swan 2018). In general, People's trust declined in every kind of institution recently (Browne 2017). It is noticeable that the emergence of the Blockchain's first and the essential product, namely Bitcoin, occurred during the 2007-2008 global financial crisis when trust in the regulatory agencies such as financial institutions and the real estate industry as the main causes of the economic crises decreased; So Bitcoin as a form of money with the capability to circumvent the institutions have gained popularity (Barber 2016). Unfortunately, people blindly trust in centralized institutions, but when these institutions fail in their roles, they are often the ordinary users who pay the price of such failing institutions; So, Blockchain technology enables people to create networks without being exposed to the risks resulting from central authorities (Trivedi 2019).

As a result, individuals have stopped trusting each other and the institutions as well, and thus they have chosen computer-based systems as a solution, and this has made considerable changes in social relationships by shifting away from trust-based cooperation between individuals to the trust-less interaction between them on technological mechanisms. In this regard, the algorithmic trust created by Blockchain can be considered as a new form of social capital (Swan & Brunswicker 2018); because the feature of trust-freeness and the shift from trust in authorities to trust in algorithms will provide an excellent opportunity for different direct interactions between individuals (Ostern 2019).

Besides all the technical and conceptual advantages mentioned above, the essential concern is that if the society members do not need trust each other conveying the trust to computers, is that means we are going to put

such abstract concepts in machines or technologic-based mechanisms?! Trust, as a means through which humans test each other, will lose its ethical sense in future as a result of its transfer to an algorithm? If this kind of approach spreads, it may serve as the first step to include other ethical concepts by inventing other types of technologies. Therefore, we will face a world where concepts such as trust are not recognized as a human concept, and there is the probability that those no longer exist in the future, losing their roles in society. This is happening mainly because of essential change in the ontology of trust as a concept or brushing it aside as an unnecessary factor in relationships between human beings.

3. Decentralized power

Power, historically, had been centralized, in particular, by governments, but by applying blockchain apparatuses, power is going to be decentralized in all over the world. Popular applications of Blockchain technology which exist mainly in both decentralized supply chains and property transfers, lack a central entity that needs to be trusted for data to be collectively stored and retrieved (Trivedi 2019). It means that Blockchain system as an institutional application can keep the balance of power restored more equitably to individuals (Swan 2018), and it is executed through decentralizing power to numerous smaller actors (Miller 2019). This movement prevents the concentration of power among dominant groups, including governments, and countries such as the United States will not be able to implement economic sanctions against other countries and individuals with the dollar.

In this regard, in particular, the emergence of Bitcoin has created a new narrative towards decentralization of power (Reijers & Coeckelbergh 2018). This huge change is happening in the light of the two initial products of Blockchain, one of which is the global decentralized cryptocurrencies which are associated with the international decentralized freer markets rather than national banks; and another one is the decentralized smart contracts which allow all individuals to enter into financial contracts, fulfill accepted commitments, and develop an automated execution process and criteria (Jaoude & Saade 2019). Historically, there had been serious thoughts about the ways of avoiding state dominancy and taking back monetary power from

the state (Von Mises 1912, 70), and today Bitcoin can play a significant role in realizing this idea (Nick Bilton 2012). All Blockchain-based currencies, especially Bitcoin, have significant potential to restore monetary power to individuals (Barber 2016) by taking it from governments. Cryptocurrencies have a high capacity to empower people financially all over the world because they do not need to government-based intermediaries for the transaction.

In such a decentralized system, even Satoshi had not an extra privilege. Although he was the only miner in the beginning, he could not prevent others from competing with him, due to the fact that anyone is basically allowed to participate in this industry (Hillebrand 2018). It means that decentralization attribute of Blockchain entails a “de-personalization” of power; namely, it is difficult for the algorithmic institutions to subject others to their will within the system (Reijers & Coeckelbergh 2018). Also, and most important, Blockchain-based decentralization of power will restrict corruption which is associated with centralization and misuse of power by governments (Aliyev & Safarov 2019), we question the reliability of blockchain technology as a tool for anti-corruption and look at how this tool can be utilized to reduce corruption in public administration. Theoretically, blockchain allows citizens to eliminate intermediaries in many public service delivery cases. In this regard, the implementation of blockchain into the public service delivery process may prevent some types of corruption activities. Using the two-round Delphi Method, 17 blockchain experts were requested to assess the potential of the blockchain, the benefits and barriers of blockchain technology in the anti-corruption process. Furthermore, the myths and ethical challenges of blockchain were presented to depict a more realistic framework of the technology in terms of fighting corruption. The opinions expressed and arguments employed herein are solely those of the authors and do not necessarily reflect the official views of the OECD or of its member countries. This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.”,author":[{"dropping-particle":"","family":"Aliyev",given:"Ziya",non-dropping-particle":"","parse-names":false,suffix":""}],{"dropping-particle":"","family":"Safarov",given:"Igbal",non-dropping-particle":"","parse-names":false,suffix":""}],container-title:"2019 OECD

Global Anti-Corruption & Integrity Forum";id:"ITEM-1";issued":{"date-parts":["2019"]},"title":"Logos, Mythos and Ethos of Blockchain: an Integrated Framework for Anti-Corruption","type":"article-journal"},"uris":["http://www.mendeley.com/documents/?uuid=d0d7305f-c33b-41da-bda4-3ad4347bedbb"]},"mendeley":{"formattedCitation":"(Aliyev & Safarov, 2019). Therefore, technological infrastructures like Blockchain can change traditional approaches in social or economic and political domains. These potentials will not be realized automatically, nor within a short period, but will be developed gradually, through continuous processes of deliberate adaption and negotiation (Schrape 2019).

What is intriguing about Blockchain is that the power by Blockchain is shifted and transferred from intermediates like governments to an algorithm in a distributed and decentralized manner, which implies that power has been separated into individuals, who, in truth, do not have any control over the Blockchain system because of its automatic function. Therefore, like trust, power is another concept changed ontologically through acting in an algorithm instead of being applied by an individual or an intermediate institution.

4. Algorithmic institution

Blockchain is equipped with a cryptographic mechanism that authenticates users' identities and coordinates people's activities, eliminating the need for human-run institutions to perform these tasks (Swan 2018). This fact would have significant consequences, one of which, for example, is happening in the cryptocurrency markets. Cryptocurrency transfer mechanisms across Blockchain networks may brush traditional intermediaries aside, which traditionally verify transactions, and hence the institutional structure of the society could transform into the computationally-based one (Swan & de Filippi 2017). The concepts of both structures sound the same, but they are different from the viewpoint that Blockchain ledger records are immutable and the fulfillment of commitments is accomplished through pre-established infrastructure rather than voluntary acts of the parties (De Kruijff & Weigand 2017).

Blockchain is a kind of self-sufficient and self-reliant institution because it has all the necessary features of an institution without using traditional means (Ishmaev 2017). For instance, Bitcoin, as a Blockchain-

based currency, is an international abstract institution of property that can be characterized as a meta-institution with the capacity to regulate relations between individuals, organizations, and other institutions (Ishmaev 2017). Actually, it can perform the same coordination tasks that are considered the core feature of traditional organizations (Schrape 2019). This fact raises a serious concern of the future of traditional financial institutions, Since the survival of those institutions would depend on an essential change in the applicability of them. Those institutions would be required to prove a value creation process that is not based only on control of capitals (Swan 2018).

A cryptocurrency like Bitcoin and its functionality are not under the control of any central government (Trivedi 2019) and, at the same time, Ethereum-based smart contract system allows for any programmable job, to be recorded, validated, and executed through a decentralized algorithm (Trivedi 2019). Therefore, the same way in which Bitcoin as a currency escapes from the central authority of financial institutions, Ethereum can replace intermediaries in charge of managing contracts (Trivedi 2019). This means that Blockchain is stealing power from institutional authority and restoring it to individuals (Murray 2016) by getting rid of government-based institution.

It is evident that the institutional concept, which is physical and human-based, is being systemic and algorithmic-based, which means that another ontological conceptual change is happening because of Blockchain. This change could be the stepping stone to emerging of a post-capitalism era, in which intermediary organizations and platforms become increasingly obsolete (Schrape 2019).

5. Digital money

The current method of storing money in bank accounts is going to change fundamentally because the money will be stored in Blockchain networks in the near future (Swan 2018). The world is going towards forming a complex, dynamic, adaptive and multi-scale crypto-economic system which has been represented, currently, by Bitcoin (Voshmgir & Zargham 2019) specifically complex systems. They are adaptive networks with multi-scale spatiotemporal dynamics. Individual actions towards a collective goal are incentivized with

"purpose-driven" tokens. These tokens are equipped with cryptoeconomic mechanisms allowing a decentralized network to simultaneously maintain a universal state layer, support peer-to-peer settlement, and incentivize collective action. These networks therefore provide a mission-critical and safety-critical regulatory infrastructure for autonomous agents in untrusted economic networks. They also provide a rich, real-time data set reflecting all economic activities in their systems. Advances in network science and data science can thus be leveraged to design and analyze these economic systems in a manner consistent with the best practices of modern systems engineering. Research that reflects all aspects of these socioeconomic networks needs (i. The limited supply of Bitcoin will turn it to the digital gold in place of the physical gold (Satoshi 2008). Therefore, Bitcoin is going to take the role of gold and is evaluated through transactions among the individuals themselves all over the world.

The most interesting feature of Bitcoin is that it is a currency led by no person (Hillebrand 2018). Therefore, advocating it does not mean empowering any party that stands behind it, exactly like gold. This is because everyone can become a miner and create blocks across the Blockchain network, and also, this digital money can spread throughout the international financial markets without reliance on any central entity, so nobody can hold the monopoly over Bitcoin (Hillebrand 2018).

The transfer of money in physical forms, such as gold coins, was difficult in large amounts between long distances, and in response to these difficulties, the physical money was replaced with state bonds; but the circulation of state money is limited to the national borders of that state (Barber 2016). On the other hand, the necessity of transnational trading all over the world has led to the offering of a currency with higher intrinsic value like gold and silver (Barber 2016). However, as global trade developed, the intrinsic value of money decreased and replaced with the functional value as a result of the established trust relationships (Simmel 1978, 181). Therefore, the transferability of money between countries increased through inventing paper notes, checks, credit cards, and online payment systems to provide easy and efficient trade on a global scale (Barber 2016). This path continues by developing another concept of money that has more abstract

nature shifting from being a material into an algorithm and can be called as “perfect money” (Dodd 2012).

From political approach, Bitcoin is a means to avoid state regulation and take back monetary power from the state (Nick Bilton 2012), because, in fact, money is not given its value from the state, and exchanging by individuals employing a “common media of exchange” determines what is money (Von Mises 1912, 70). From this perspective, the main goal of Bitcoin as a libertarian enterprise that promotes the ideals of free markets and individual freedom (Karlstrøm 2014), is returning monetary power from governments to individuals by transcending states and forming a supranational exchange society as the next step in monetary evolution (Barber 2016).

In the International perspective, cryptocurrencies circulate across the world within seconds, and transacting parties do not need to be concerned with their domestic money (Barber 2016). Therefore, if currencies like Bitcoin is used as the medium of exchange, the governments do not need to be interested in the money of each other because Bitcoin has the potential to serve as the international money (Barber 2016). Cryptocurrencies could leave an efficient impact on geopolitics by replacing the present major international trading currencies like US dollar, the Euro, the Japanese Yen or Chinese Yuan, through which these countries exercise control over the financial markets and impose sanctions on other countries (Miller 2019). Therefore, Bitcoin has the capacity to establish another form of the economic system by driving the world towards post-capitalism (Cohen 2017, 64). Bitcoin can lead to a stable financial infrastructure which cannot be centrally manipulated, compared to volatile characteristics of traditional money that historically have been suffering from collapses and hyperinflation (Clegg 2014).

There are some concerns about high volatility of Bitcoin price, but it will decrease as its usage increases, and if more companies begin accepting payments in Bitcoin, fewer users will tend to exchange their Bitcoins for fiat currency (Trivedi 2019). Bitcoin is a new currency and is held and traded by limited number individuals presently; however, in some cryptocurrency markets, Bitcoin is already the leading coin, and its use cases can be increased in the near future. (Hillebrand 2018). Interaction with Blockchain technology is getting more popular, and this would prompt a new definition and understanding of “money” and “property” in the world (Reijers &

Coeckelbergh 2018). Cryptocurrency is the new ontological definition for money and this is another significant change happening in the realm of the traditional concept since Bitcoin is not only different from fiat money, but also from traditional money which is gold.

6. Anarchic governance

As computer-based systems, like video games and virtual reality, are increasingly growing, the production of quality goods such as authority and trust using computational systems, which are traditionally produced by human-run institutions, is taking more steps forwards (Velasco 2017). Both the traditional monetary system and the Blockchain-based system are a political matter by nature because both features of control and authority are essential elements in both systems; but, in the case of fiat monetary systems, institutional actors are in-charge of control measures while such a role and function are the intrinsic features of Blockchain-based systems (Velasco, 2017). This feature of Blockchain means that Developing its applications would open the path towards anarchy, in which the states would be eliminated from the monetary system. The governmental authority would disappear not only from the money transaction process but also from the production process itself (Velasco 2017).

Historically, the elimination of governments, which is the key feature of Anarchy, was the request of some elitists in some stages of political history. There has been widespread criticism of the growing centralization of governments power so that in the mid-19th century an economist by the name of Bastiat called on all governments to get out of the citizens' lives as Locke's law states, advocating the view that whatever is wrong for an individual would be wrong for a government too (Miller 2019).

Blockchain is robust in its unstructured simplicity (Satoshi 2008), and this means that it is so close to being an anarchic system. Since the public record is kept by Blockchain and any individual can update it, no power may be exercised by any institution to corrupt or use the public record as a tool of extortion (Markey-Towler 2018). Blockchain technology, therefore, allows for the possibility of an anarchic dream that is finally coming to truth; a society which is composed of groups and mutual associations in the absence

of violence and coercion of governments (Marshall 1992, 3). The Blockchain technology might provide the missing link which allows for the formation of large-scale societies with institutions are formulated, and records kept and verified collectively (Markey-Towler 2018).

There is a major challenge presented to any given institutional system; For instance, how it can provide an integrated system for conducting political-socioeconomic affairs, and the state has an advantage in this respect over Blockchain, for it has had some thousands of years to develop its institutional capabilities (Markey-Towler 2018). It is unlikely that the governments will ever be entirely superseded by another institutional system in the process of societal evolution; but the emergence of Blockchain means that the anarchic utopia has become a little closer than before (Markey-Towler 2018).

To interact in society, governments guarantee certain reciprocity and security concerning exchange and property by the violence and coercion of the state, while the most basic anarchic theories call for other nonviolent means of enforcement that involve exclusion (Ackerman & Kruegler 1994). The institutional system must, therefore, be sufficiently exclusionary toward those unwilling to abide by its institutional structure (Markey-Towler 2018), and this principle has been installed into both smart contract systems in Ethereum and cryptocurrencies like Bitcoin.

There are some concerns about unpredictable consequences of self-governing collectives due to the fact that history has shown that a mass mind is a cruel idiot; and Nasty mass mind outbursts have been flavored Maoist, Fascist, and extreme religious thoughts, and it is possible to see such social disasters that appear suddenly under cover of technological utopianism (Lanier 2006). It means that anarchic Blockchain has high potential to end up to a populist world and elimination of elitist approaches. Also, the anarchic Blockchain would lead to the lack of a formal governance structure which causes an inability of immediate action or reaction towards important events and disasters. In addition to this, informal and invisible mechanisms of power may take shape.

The anarchist utopia of a society in which individuals are free to associate with others according to a set of rules to which those others agree is not here yet; but it has been made more possible, and then states would be challenged to reform in order to become more competitive with Blockchain

in a society which is continuously evolving (Markey-Towler 2018). The prevailing belief is that Blockchain had come to stand against intermediaries such as governments and banks. This is right, but they would be eliminated with no fight against Blockchain just because it does not have the problems they have, or, in other words, Blockchain is a new abler system than the government. As the carthorse was replaced with the car; governments will slowly be brushed aside by the developing Blockchain. This is a more peaceful view and will mitigate the extremists' stance on the one hand and will ease the moderates' concerns on the other.

Although governance has historically been based on deliberation and negotiation, Blockchain algorithms are reducing governance to automated protocols, consensus mechanisms (Kera 2019). This is considered an ontological change in the nature and concept of governing, transferring from human-based system towards algorithmic one.

7. Self-regulated system

The initial reaction to the emergence of Bitcoin from legal scholars and legislators was a question of if and how Bitcoin should be regulated (Filippi 2013). Because of the pseudonymization transaction of cryptocurrencies, it is so difficult for governments to monitor their transactions (Rehman, Salah, Damiani, & Svetinovic 2019) developers, investors, regulators, and speculators to develop new economic and business models for trade, investment, and taxation. Currently, the cryptocurrency ecosystem is immature with multifaceted trust issues at all levels from technology providers to users and governments. In this article, we present a detailed analysis of trust issues in the cryptocurrency ecosystem, including a detailed taxonomic discussion of the key trust aspects, including price manipulation, price volatility, insider trading, parallel economy, shadow economy, reputation systems, transparency, centrality, token economy, governance, regulations, design, usability, privacy, and security. We also present a comparative analysis of the top 10 cryptocurrencies that are holding about 85% of the total market capital. Finally, we present a detailed summary of the key trust issues and their potential immediate, short-term, and long-term solutions. This article reveals that significant effort is required to develop a fully trustworthy cryptocurrency

ecosystem.”,author”:[{“dropping-particle”：“”,family”：“Rehman”,given”：“Muh ammad Habib ur”,non-dropping-particle”：“”,parse-names”：false,”suffix”：“”},{“dropping-particle”：“”,family”：“Salah”,given”：“Khaled”,non-dropping-particle”：“”,parse-names”：false,”suffix”：“”},{“dropping-particle”：“”,family”：“D amiani”,given”：“Ernesto”,non-dropping-particle”：“”,parse-names”：false,”suff-ix”：“”},{“dropping-particle”：“”,family”：“Svetinovic”,given”：“Davor”,non-dropping-particle”：“”,parse-names”：false,”suffix”：“”}],“container-title”：“IEEE Transactions on Engineering Management”,“id”：“ITEM-1”,“issued”:[{“date-parts”：[[“2019”]],“page”：“1-17”,“publisher”：“IEEE”,“title”：“Trust in Blockchain Cryptocurrency Ecosystem”,“type”：“article-journal”,“volume”：“P P”}],“uris”:[“http://www.mendeley.com/documents/?uuid=4a7f3384-68a7-4112-9077-84b81ee7502c”}],“mendeley”:[{“formattedCitation”：“(Rehman, Salah, Damiani, & Svetinovic, 2019. In fact, all methods of governance and regulation on Blockchain are inconsistent with its principles. The main issue here is that what cannot be controlled how it can be regulated.

Blockchain is going to support the international political system that has no government. Therefore, it would mean that international law would not really exist, or it is not really a ‘law’ (Ray 1992, 484) since, in an anarchic system, there are neither sovereigns nor subjects; it is the laws of nature; a commonwealth without sovereign power (Hobbes 1651, 218). Therefore, Blockchain is going to be a distributed political power, being responsible for keeping the population in compliance with its self-sufficient laws.

However, historically, it is argued that the enforcement of government-based laws is essential because, without laws, society would revert to nature—the Hobbesian state of anarchy (Miller 2019) regarding anarchy as a negative attribute which may lead to the collapse of society. In this regard, some claims that the regulation of cryptocurrencies must be on a global scale as national or regional rules would not be able to enforce on a virtual, borderless community (Reuters 2018). This is because, Blockchain technology leaves open the possibility that further non-state individual actors could play a more significant role in international relations, and that can enforce international laws and norms; especially, under the continuing changes to the international design including the traditional concepts of states and international relations (Miller 2019).

The legal and regulatory on Blockchain, particularly cryptocurrencies and smart contracts is unknown, especially from the viewpoint of the traditional regulatory approach (Scholl, Pomeshchikov, & Rodríguez Bolívar 2020). Therefore, Blockchain networks may lead to significant change, particularly, in the form of world trade regulations so that contracts between countries will be authorised through these networks (Krumov & Atanassov 2019).

Also, Smart contracts, called the "data and rules" system, are going towards embedding contracts data in Blockchain, and the conditions are performed automatically (Paik, Xu, Bandara, Lee, & Lo 2019). This refers to an important change in the ontology of regulation which was based on the interference of intermediary organizations. It is a transformation from traditional regulation toward a self-regulation system, which would change many traditional legal theories.

8. Blockchain world

Algorithms are believed to should not parallel reality too strictly since algorithms come to define and shape reality; therefore, Blockchain algorithms and "smart contract" technologies is said to drive forward the future of the world by providing algorithmic governance as the only possible governance solution (Kera 2019). The most important concern is that in developing any new social community, there is a huge difference between what "is" and what politics has determined ought to be (Mulligan & Bamberger 2018).

In this regard, Blockchain technology, through its multiple different self-determined political and economic systems, has enormous potential to act as a tool for developing smart social structures and new models of social organization, which help people decide how to represent themselves as individuals and societies (Swan 2018). In the Blockchain-based citizen relationship, the social contract between individuals can make people feel that they are living in a self-directed community (Swan 2018).

Blockchain is prompting the rethinking of the role of the authorized institutions in the community and the possibility of giving up paternalistic governments to models that improve individual liberty and encourage individuals to determine themselves as an economic and political subject in the new Blockchain-based world (Swan 2018).

On the other hand, Blockchain may have some hazardous aspects because it enforces in mind the chronological temporal dimension in dealing with events, which makes social relations rigid, and weakens dynamism and a sense of freedom and responsibility (Reijers & Coeckelbergh 2018). This is because Blockchain cannot be modified or altered; as an immutable ledger (Jaoude & Saade 2019). It raises the concern that Blockchain has the required potential to impose historical determinism on human society. This would be so hazardous because the core issue for humankind is to discover and expand itself through the revealing technological presence (Koletsi 2019), not to be frozen and stagnated.

Within this decentralized universe of Blockchain, intermediaries do not play any role; and trust and cooperation that may grow among valid strangers is an indication of emerging new socio-psychological dimensions in the society (Koletsi 2019) which has been progressing and developing in the course of human being history. In the other word, The ever-intensifying technological mediation of our 'being-with-each-other' has become by now a basic condition of most of our everyday lives (van den Eede 2011), and Classic "one-to-many" mass media has ended up to "many-to-many" medium dismantling big media's monopoly on the news and transforming it from a lecture to a conversation (Gillmor 2004, 68) and Blockchain, finally, would take the same way but in the many to many relationships. Therefore, this technology is an evolution, providing alternative ways for the organization of the relationship between individuals, communities, and societies and creating new power structures by influencing social relationships, within and between different cultural systems (Koletsi 2019).

About the impacts of Blockchain on the individuals, the subject-formation is a matter that is relevant to self-determination in economics and governance issues, and it happens when individuals introduce themselves as the beings who have developed a sense of self-authority, self-determination options extend beyond the default position, namely the current structures of authority to which we are born (Swan 2018). This is what Kant called "Enlightenment", which means "thinking autonomously and free of the dictates of external authority" (Kant 2013). Therefore, since the enlightenment project is still open, Blockchain can help all people to go beyond their perceived limits (Swan 2018).

In addition, Blockchain has an interesting advantage of saving time as so that it would help people to spend less time and get involved in other activities including artistic and cultural ones (Ammous 2018, 144) since they will have more free time to examine the life mannerism and philosophical concepts. In this regard, Blockchain is such as robots that facilitate human life by carrying out dull works.

In the Blockchain-based society, people will be freer, relations become selectable, and financial technologies like cryptocurrencies will guarantee people's participation in the realm of economic exchange, regardless of their personal, racial or cultural background (Reijers & Coeckelbergh 2018). And most importantly, the public Blockchain as a predominantly community-driven system decreases the responsibility of individual users and increases the impact of coordination (Aliyev & Safarov 2019) we question the reliability of blockchain technology as a tool for anti-corruption and look at how this tool can be utilized to reduce corruption in public administration. Theoretically, blockchain allows citizens to eliminate intermediaries in many public service delivery cases. In this regard, the implementation of blockchain into the public service delivery process may prevent some types of corruption activities. Using the two-round Delphi Method, 17 blockchain experts were requested to assess the potential of the blockchain, the benefits and barriers of blockchain technology in the anti-corruption process. Furthermore, the myths and ethical challenges of blockchain were presented to depict a more realistic framework of the technology in terms of fighting corruption. The opinions expressed and arguments employed herein are solely those of the authors and do not necessarily reflect the official views of the OECD or of its member countries. This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.,"author": [{"dropping-particle": "", "family": "Aliyev", "given": "Ziya", "non-dropping-particle": "", "parse-names": false, "suffix": ""}], [{"dropping-particle": "", "family": "Safarov", "given": "Igbal", "non-dropping-particle": "", "parse-names": false, "suffix": ""}], "container-title": "2019 OECD Global Anti-Corruption & Integrity Forum", "id": "ITEM-1", "issued": {"date-parts": [{"2019}]}, "title": "Logos, Mythos and Ethos of Blockchain: an Integrated Framework for Anti-Corruption", "type": "article-journal", "uris": [{"http://www.mendeley.com/documents/?uuid=d0d7305f-c33b-41da-bda4-3ad4347bedbb"}], "mendeley":

{“formattedCitation”}”(Aliyev & Safarov, 2019. It would be a new world in which relations have been automatized under the strong consensus of all individuals. This kind of world is the result of considerable changes in the ontology of human world concepts since the new technology always comes up with new concepts and narratives and, finally new world which fits those concepts.

Conclusion

Blockchain technology holds great promise through proposing interesting possibilities in front of human beings, having the huge potential to evaluate human history and providing a new narrative on the world. This is because Blockchain is challenging traditional instruments by throwing up new ontological concepts.

Self-authority feature of Blockchain protects against traditional state domination because Blockchain’s sovereignty cannot only be in the control of the governments or the private sector. This is so evident in cryptocurrencies interactions which challenge authorities through providing new financial system empowering individuals against states. Abstract and Self-sufficient features of Cryptocurrencies and their disconnection from the state-run economies keep those currencies away from the influence of oscillation of fiat-based economics and, eventually, will make one or more cryptocurrencies as a united global currency. Also, politically, Blockchain allows for proper authentication through maintaining complete anonymity providing secure voting mechanisms and can be the dynamic anarchic system to progressing democracy all over the world.

Although Blockchain had come to stand against intermediaries, such as governments and banks, they would be eliminated with no fight against Blockchain, which is a new abler system than the government. Governments will slowly be disappeared by the developing Blockchain as the carthorse was replaced with the car. Anarchy-as a main attribute of blockchain- is, in fact, the utopia. Interestingly, the utopia is the same philosophical theory that is explained within the framework of political Anarchy, and Blockchain has emerged as a tool to realize it in the world. It means that new idealistic concepts and a new narrative are going to rule the world.

There are some concerns about the unchangeability of Blockchain, one of which is that it may lead to a deterministic world historically; a world in which everything is registered with no defect conceptually and chronologically. This, as one source of weakness of Blockchain, needs further research to examine more the link between Blockchain ledger and determinism.

Ontologically, Blockchain seems that it is goalless and chaotic and resembles the theories of the chaotic universe in modern physics. If the nature of the universe is anarchic as it has been claimed in physics, then Blockchain would be in the same way of nature ontologically and ethically.

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