The Blockchain: Free-Riding for the Commons

From Potential Tragedy to Real Comedy

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Is the blockchain an instance of commoning in cyberspace or is it enhancing capitalism to automate labour? Louis Volont and Walter van Andel argue that the blockchain is particularly well-suited to explore ideology and counter-ideology in the realm of the commons, for the blockchain constitutes a contested kind of commons: a market common, a monetary common, a kind of common that facilitates the accumulation of exchange value for, indeed, self-interested individuals. Could common ownership of that which is automated prevent the blockchain from a relapse into corporate tragedy?

Contemporary debates on anything that is supposedly 'new' tend to centre around 'normality'. Take, for instance, debates on veganism, political preference or gay marriage. People who speculate on these issues often talk in terms of 'the normal' and 'the exception'. Some say that humankind has always eaten meat, and that therefore we should continue to do so 'because it has always been that way'. Gay marriage? 'Wrong! Let's keep our ancient traditions intact!'. In the same vein, some say that capitalism constitutes humankind's default situation, while commoning constitutes the exception as a new, utopian, romantic discourse, deserving at best a heritage niche for those dreamers who still 'believe' in a world beyond market and state. In fact, discussions on the commons stem from parties who attempt to convince other parties about what is 'normal and realistic' and what is 'exceptional and utopian'. Opponents try to convince advocates by referring to a kind of universal, albeit hidden truth: 'we've always exchanged goods on markets', 'mankind consists of self-interested individuals'. Interlocutors attempt to claim monopolies on supposed truths. Discussions on the commons, hence, evolve out of a clash of ideology and counter-ideology.

In an attempt to contribute to the discussion, we deem it a worthwhile endeavour to look more closely into arguments contra the commons and to see whether these arguments hold in the case of a recently and rapidly evolving instance of commoning in cyberspace: the blockchain. The blockchain is a technology that facilitates the online exchange of cryptocurrencies, such as the Bitcoin, unmediated by either centralized market institutions or governmental regulations. The instance of the blockchain, we argue, is particularly well-suited to explore ideology and counter-ideology in the realm of the commons, for the blockchain constitutes a contested kind of commons: a market common, a monetary common, a kind of common that facilitates the accumulation of exchange value for, indeed, self-interested individuals. Firstly, we highlight the notion of the 'common-pool resource' (CPR) in order to further explore theory-based arguments *contra* commons. Secondly, we outline our central case. In the remainder of the text, finally, we evaluate the commons' counter-ideology through the lens of the blockchain. At this juncture, we can already hint at three alleged problems that supposedly put a strain on the commons: the problem of

overuse, the problem of communication and the problem of scale.

The Tragedy of the Commons: Overuse, Communication, Scale

In everyday parlance, it seems fairly easy to distinguish between private goods and public goods. The former relates to commercial products exchanged on a market (to buy a house), whereas the latter relates to facilities provided by a government (to use a road). Additionally, it seems fairly easy to distinguish between public goods and common goods. The former relates to information retrieved from a book we paid for, whereas the latter relates to information found on Wikipedia. Yet, the inherent specificities of the commons seem to demand clarification. What is it exactly that differentiates the commons from other kinds of goods? In post-war neoclassical economics, the first key feature of a commons or common-pool resource (CPR) is ***subtractability,*** meaning that one person's use 'subtracts' or depletes value for others. The second key feature of the CPR is ***non-excludability*** (openness): theoretically, outsiders cannot be excluded from a CPR, a resource 'open to all'. [1]

Afterwards, the concept of the commons as a noteworthy scholarly subject made its entrance into the canon of the social sciences by way of Garrett Hardin's 1968 *Science* article titled 'The Tragedy of the Commons'. Hardin, socio-biologist, holds that the subtractible and open character of the commons would eventually result in overuse, depletion, tragedy. In order to illustrate this tragedy, Hardin depicts a number of herdsmen who jointly feed their cattle on a shared pasture – a commons – that is 'open to all'. In order to survive, each herdsman will add more cattle, for each herdsman aims to maximize benefit as a rational being. This poses an inherent threat to the commons, since the costs of overgrazing are socialized among all actors in the play, whereas the gain of adding one more animal adheres to one participant only. In the absence of internal communication and coordination among the herdsmen, the commons will cease to exist; the tragedy is now complete. Hardin for whom 'the alternative of the commons is too horrifying to contemplate', concludes:

Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit – in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all. [2]

Even though Hardin's parable has been interpreted mistakenly as an irrefutable argument for the superior efficiency of private property in a free, Smithian market, his solution sounds otherwise. Hardin explicitly argued *against* the 'dominant tendency of thought . . . , namely, the tendency to assume that decisions reached individually will, in fact, be the best decisions for an entire society'. [3] Hardin's thesis, hence, was an argument contra-, not pro-, laissez-faire economy. Only through governmental regulation could humankind be emancipated from the tragedy of the commons. Hardin's concern was related to the supposed tragedy of human procreation, yet the broader realm of his argument is crystal clear: individuals locked into the logic of the commons will bring ruin to all – not to forget, however, that Hardin's argument presupposes two hidden assumptions. One may rightfully ask whether the tragedy would occur if the herdsmen had known each other and if the herdsmen had figured out a system of 'checks and balances' through internal cooperation. Ostrom, evidently, showed that those who share resources can effectively manage and sustain shared wealth under suitable conditions.

Back to commons' counter-ideology. In fact, many more theorizations may be added to Hardin's tragedy. From Hobbes' inevitable Leviathan to the mysteries of game theory: it seems as if the social sciences remain obsessed with the question of how individuals may, or may not, cooperate sustainably once the individual level transcends into the aggregate level. A transversal threat throughout these accounts is the presupposition that humankind

constitutes an inherently gain-seeking creature. In that context, a final example *contra* commons is found in Olson's *The Logic of Collective Action* (1965). Olson set out to counter the key presumption held in classical group theory, namely that individuals with common goals would decide voluntarily to cooperate and further their shared interests. Yet even though Olson's account is less pessimistic than Hardin's tragedy, he equally argued that the premise of collective action could only work in small-scale situations:

Unless the number of individuals is quite small, or unless there is coercion or some other special device to make individuals act in their common interest, rational, self-interested individuals will not act to achieve their common or group interests. [4]

Those who claim a monopoly on the 'tragic' and 'horrifying' character of the commons, we argue, presuppose that individuals who pursue interests through shared resources will eventually counter a threefold problem. The first issue is related to a commons' / CPR's aforementioned characteristic of subtractability. Because of the subtractible character of a shared resource, the use of one person will decrease the resource's initial value for others, eventually resulting in overuse or 'total ruin', as Hardin would have proposed. The second issue is related to a commons' / CPR's aforementioned characteristic of non-excludability (openness). Because outsiders can hardly be excluded, internal communication and monitoring among the resource users becomes increasingly complex. The third problem, finally, relates to scale: resource users may pursue common interests on a small, local scale, but the situation becomes increasingly difficult when the commons tend to transcend the community level. It ought to be clear that all three threats – overuse, communication, scale – are heavily interrelated. At the heart of each of these issues is the free-rider problem. Whenever a participant in a commoning process cannot be excluded from the benefits others provide, each participant is presumably seduced not to contribute to common interests, but to free-ride on the value created by others. After all, if many more resources users enter in a process of commoning, who will effectively communicate with, monitor and sanction the free-rider?

In the following paragraphs, we aim to explore the recently and rapidly developing technology of the blockchain as a potential remedy for the problems of overuse, communication and scale. We consider this exploration particularly valuable, for on the one hand, the blockchain facilitates many new instances of commons, be they financial, peer-to-peer, or cultural; on the other hand, the blockchain serves both common and individual interests without any mechanism to exclude the free-rider and, most importantly, on a limitless scale. Aristotle once wrote: 'what is common to greatest number has the least care bestowed upon it'. The question is, however, whether this holds in cyberspace. We do not, as in the commons' counter-ideological discourse, want to claim a certain truth about humankind as being invariably self-interested, yet we *do* assert that the blockchain enhances that one thing that makes the world go around: to make money.

The Blockchain

As the popularity of online cryptocurrencies such as Bitcoins continues to grow, increasing attention is focused on its underlying technological infrastructure: the so-called blockchain. The seemingly simple technology of the blockchain was initially lauded within techno-savvy hackers' milieus, but has recently attracted a large group of followers. Believers and users are found in both mainstream organizations as well as in individuals that dream of an alternative and sustainable economic future. [5]

In its most simple form, the blockchain constitutes a continuously growing digital list of records, a ledger. As such, the blockchain can be used for bookkeeping in a similar way that ledgers have been used for centuries by many organizations and institutions. Banks, for instance, hold ledgers that contain information about your bank account, national governments hold ledgers that contain information about your acquired degrees. However,

importantly, blockchains are different in certain key aspects, which are derived from their digital, online nature. Firstly, they are distributed: the ledger does not function as a central database stored in one private location, but is shared among participants; secondly, they are public: every user has, anytime and anywhere, access to a historical chain of information; finally, they are write-only: new information can be written into it, but existing information that is already present cannot ever be deleted. Because of the blockchain's 'decentrality', publicness and informational history, many consider the blockchain to be the technology that will change the world. [6] After all, it makes possible what until recently seemed unthinkable, namely having to do with losing the public and private intermediaries (financial institutions, notaries, central banks and even governments) that were up until now considered necessary to facilitate our economic reality.

In a blockchain system, all transactions that need to be registered on the ledger are grouped together every few minutes to form a new 'block'. Then, connected computers from all around the world verify the information in the block: they check whether the registrations are in agreement with the rules set forth in the protocol. For instance, when Bitcoins are transferred from one person to another, the computers validate by looking through the historical blockchain if both Bitcoin accounts are legitimate and if the transferring person has enough Bitcoins in their balance. This distributed verification system is the unique feature of a blockchain. Anybody can participate in this verification process by making their computers available to jointly validate the information in a new block, a process that is called 'mining'. In return, miners can earn new Bitcoins as a reward for their efforts, which makes it attractive for them to participate. Once all information in the new block is validated, a unique identifier key is generated, which contains a reference to its preceding block and an answer to a complex mathematical puzzle that serves to validate the transactions. By actively connecting a new block to its preceding block, a linear sequence of encrypted datasets is created, thus forming a 'chain'. As a general purpose technology, the blockchain serves as a means of record, in a secure and verifiable manner, which reflects a particular state of affairs that has been agreed upon by the network.[7]

Bitcoin, the popular electronic currency, is the most widely recognized example of a technology built upon the blockchain. However, there are potentially many more applications of blockchains that all use the same general principle: a decentralized network of computers capable of verifying information, which rewards behaviour deemed beneficial to the network. In order to recognize some of the potential of the blockchain technology, consider the example of Backfeed, a proposed blockchain-based application that aims to provide a social operating system for decentralized organizations and enables massive open-source collaboration without central coordination. From the Backfeed website:

Imagine. Facebook owned by its users, decentralized transportation networks independent of Uber, markets dominated by open-source communities where contributors are also shareholders, and where the value created is redistributed both fairly and transparently. Imagine the innovative potential of such organizations decoupled from the rigidities of hierarchical structures. For all of this and more. . . Backfeed provides the infrastructure for decentralized cooperation.

Still in its early stages of development, Backfeed is developing an open-source infrastructural protocol through which anyone can create a governance system that is based on Backfeed's central values: large-scale, free, meritocratic and decentralized. Using the blockchain technology, Backfeed is able to combat a few of the problems that many open (online) communities in which people cooperate for the achievement of a common goal (consider Free and Open-Source Software, Wikipedia, OpenStreetMaps, CouchSurfing or WikiHouse) encounter. 'The majority of such communities operate on a very small scale, often on a local territory or in a niche area . . . and usually comprise a small handful of highly motivated contributors, and a slightly larger number of people who contribute on an ad hoc basis.' [8] Scaling up is usually only feasible through increased

hierarchy, or through a market-orientated approach that accumulates necessary funds and rewards contributors with economic returns.

In Backfeed's meritocratic system, everyone is free to contribute to a particular community in the way they see most fit. Then, once the input is validated and appreciated by the members of the community, the contributors are rewarded with 'a reputation' that reflects their influence in the governance of the community, and/or an economic compensation in the form of digital tokens. These tokens can be used further, to benefit from the services offered by the community, representing an actual (equity) share in the organization.[9] The Backfeed protocol therefore dynamically adjusts the influence of peers in a decentralized network, giving appreciation to valuable input, while mitigating potential centralization of the power through its consensus system that is based on the pursuit of a common goal. In sum, the system supports any movement that would benefit from the decentralized, indirect coordination of large groups of individuals.

In a first experiment, the Backfeed protocol has been tested in the organization of the 2016 OuiShare Fest in Paris. OuiShare is an interdisciplinary festival that gathers creative leaders, entrepreneurs, movement builders, purpose-driven organizations and communities from across sectors and countries who want to drive systemic and meaningful change. In this experiment, the festival organizers decided to use Backfeed to run their programme selection process in a decentralized manner, with the aim to improve the submission system by making contributions more visible and providing transparency by documenting them, enabling contributors to build a reputation (by participating in the evaluation process), and by finding 'consensus' by using the electronic system.[10] By utilizing the Backfeed system, the festival aimed to improve the sourcing of the best content from the community and make it easier for the members to contribute to the project and get recognized for the value they provide, all while organized in a non-hierarchical, decentral manner in which not one single voice can claim ownership.

Coda: The Comedy

Swan has, quite ambiguously, framed the blockchain as an 'extremely disruptive technology that would have the capacity for reconfiguring all aspects of society and its operations'. [11] While some characterize the blockchain's state-of-the-art as a 'speculative vision', others seem to agree that its only limitation is the imagination of the user community. By way of conclusion, we intend to expound on this view from a utopian and a dystopian perspective.

From a utopian point of view, the blockchain seems to annihilate the aforementioned threats that have long been considered to impede the commons: overuse, (absence of) communication and scale. Firstly, we argue, the blockchain seems immune to the threat of overuse. In all, the larger the community, the more value it creates. The more use, the better. Therefore, commons created by the blockchain constitute what Christian Borch and Martin Kornberger have called a 'relational subject': contrary to Hardin's communal pasture, blockchain commons increase in value after use. The act of consumption, is equally an act of production. [12] This makes Backfeed's system a powerful tool for bridging individual and collective motives in the aim of achieving common goals. Secondly, the blockchain facilitates internal communication among its users. The system offers full transparency to all users, since all contributions towards the common goal are subject to peer-to-peer evaluation, which further determines the perceived value of the network. All contributions are clearly visible for the entire community, making detrimental inputs to the common goal subject to dismissal. Even though anonymous and quasi-fictional, trust can be built within the user community. Hardin's hidden assumption, hence, regarding the absence of communication among those who share resources can be dismissed. Finally, the blockchain has the potential to reach scales far beyond the local level. Many

commoning practices nowadays remain limited to low-scale and closed systems. The blockchain, by contrast, facilitates to scale-up significantly, for trust is instituted over the protocol and monitoring of behaviour is guaranteed. Also, the blockchain not only supports a larger scale, it actually benefits from it. A recent study proved that Metcalfe's Law, which states that the value of a network is proportional to the square of the number of its users, also applies to blockchain networks.[13] Exit Olson's aforementioned thesis that pursuing shared interests cannot escape the curse of the low-scale. Exit Hardin's tragedy of the commons.

To end with, the dystopian view; or: the comedy. The blockchain's peer-to-peer activity in cyberspace creates a certain value in the sphere of the commons and nullifies the cost of accessing those commons: videos, software programmes, music, the organization of urban gardens, community life and so forth. The cost of producing an extra bit of information is minimal, and the cost of access is nearly zero. So far, so good. But what would happen when that one thing that makes the world go around – money (be it virtual, be it actual) – enters the picture? One does not need to look far: many cryptocurrencies, Bitcoin among them, are facilitated by blockchain technology. Even though it is 'horizontally organized', 'decentralized' or 'functioning beyond the market and the state', the blockchain-facilitated experiment of virtual money relates to nothing more than exchange value. Indeed, the core question one should ask when speculating on the potentialities of the blockchain experiment, is whether it is put to use for exchange value on the one hand, or for use value on the other. The latter, still, is where the commons begin. The former (that is, the imperatives of capital and its incessant drive for accumulation through trade), is where the blockchain mutates from a solution to a tragedy, to a comedy in itself. *Nota bene*: etymologically, the notion of the 'comedy' comes from the Greek word *komos*, which can be translated as 'revel, carousal, merry-making'; in all, a ludic ironic activity, which one often regrets once the effect of the activity has become clear. Andrea Fumagalli and Gianluca Giannelli argue that

> the capacity of elaboration expressed by the 'peer-to-peer' network that extracts Bitcoin currency is superior to any similar network ever put in operation. The natural question to ask is whether such a power of calculation could have been obtained for the reaching of a collective objective, for example research on the cure of a disease. In other words, would the individuals who are cooperating to produce Bitcoins . . . have made available their resources for an objective not directly to their own advantage?[14]

This brings us back to. . . scale. Massimo De Angelis wrote, regarding online peer-to-peer activities: 'I shudder in the awareness that doing the simplest operation online has environmental costs that we take for granted'.[15] As such, a single Bitcoin transaction uses enough electricity to power 1.57 US households for a day – compared to one Visa transaction which is the equivalent to the electricity use of 0.0003 households.[16] Together with De Angelis we shudder, and from our dystopian point of view, we consider the blockchain as a container of its own alterity.

Swartz distinguishes between radical and incorporative 'blockchain dreams'.[17] The former group relates to those who are rethinking society for the better, those for whom 'the tragedy of the commons is stamped out like polio by a collaborative network of trust . . .'[18] The latter group, by contrast, has no such ambitions. In recent years, efforts have been made to incorporate blockchain technology within the existing financial system. The distributed ledger project, for instance, is currently remaking banking infrastructure and receives the support of J. P. Morgan, Goldman Sachs and Deutsche Bank, just to name a few. These attempts, it ought to be clear, do not necessarily seek to alter the financial system from a social perspective. As Peter Linebaugh once wrote: 'Capitalists and the World Bank would like us to employ commoning as a means to socialize poverty and hence

to privatize wealth.' [19] Just as the sharing economy promised us decentralized commerce but quickly became an excuse for on-demand work, the blockchain's utopian visions might as well shift from its original, decentralized impetus to economic exploitation. Also, not to forget, online communities based on the blockchain and centred around that other new cryptocurrency, Ethereum, still struggle to reach adequate communication and internal consensus regarding the further development of their underlying systems. 'At the heart of the blockchain dream', writes Swartz, 'there is a yearning for ever more direct communication'. [20] So, the blockchain's potential for ultimate 'disintermediation' enhances us to imagine the future, evidently, but in what way? In our view, the answer will be found in how the blockchain will relate, in the years to come, to human labour. Paolo Virno once imagined how post-Fordism constitutes the 'communism of capital'. [21] In the same vein, blockchain advocates are nowadays speculating on how the technology might enhance what some call 'FALC': Fully Automated Luxury Communism. The blockchain enhances capitalism to automate labour. Yet in recognition of that, only common ownership of that which is automated may prevent the blockchain from a relapse into corporate tragedy. The finale of the blockchain dream, we think, will depend on who eventually wins the battle between ideology and counter-ideology, or on who gets to claim a monopoly on 'what is normal' and 'what is exceptional'.

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Footnotes

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6. See Alex Tapscott and Don Tapscott, *Blockchain Revolution: How the Technology Behind Bitcoin Is Changing Money, Business, and the World* (New York: Penguin, 2016).
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20. Swartz, 'Blockchain Dreams', 91.
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Tags

Capitalism, Commons

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