

**Empowering Imagined Communities:
a proposal to use decentralized autonomous
organizations to develop alternative
socioeconomic mechanisms**

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“It's easier to imagine the end of the world than the end of capitalism.”

— Mark Fisher, *Capitalist Realism: Is There No Alternative?*

Introduction

Is a better future possible? Will we ever overcome the increasing social and environmental problems that seem to only grow in size and complexity? As a student of Sociology, these questions and many like them have been plaguing my mind for a long time. The most discouraging part is that people, even the ones that suffer the most from these problems, have no tolerance for any mention of alternative systems, immediately lashing out that “capitalism is the best thing we ever had!” and “do you think communism is any better, are you aware of its history?” *Capitalist realism* is a concept that refers to the prevailing notion that capitalism is the only viable economic system (Fisher 2009). As unreasonable a notion it is, in these discussions I could never find a convincing example of an alternative no matter how much I tried and the discussion would end there. Out of endless possibilities, why would capitalism be the only way to organize society? Especially considering all the suffering it causes in the world. In the end, I had decided that if people like it so much so be it but I won't be a part of it; I'll eventually drop everything and create a small environment in which alternative lifestyles are encouraged. Then, I was introduced to a course titled “Blockchain Economics and Radical Markets” offered by Dr. Stefano Balietti and honestly, it was life-changing. I was introduced to completely new concepts and ideas that basically said, “yes, a better future is possible” and the course provided us with several ideas and tools to work towards it. I am deeply grateful for the opportunity to have been a part of such a learning experience and this paper is actually my personal contribution to it.

I will try to explain the context of this unconventional paper and hope that it is not too messy. Throughout my journey as a sociologist, I have jumped from subject area to subject area until I came to the realization that for the solution of the fundamental problems that I want to contribute to, I need to focus on Economic Sociology—an aspiration I am still working on. Within Economic Sociology, I was especially intrigued by the critical study of organizations because in my opinion organizing is power and understanding organization is a part of the solution. This interest led the concept of decentralized autonomous organizations to immediately catch my eye. The more I learned about this organizational form, the more ideas regarding the possibilities this technology could facilitate popped into my mind. The more I learned about alternative socioeconomic mechanisms the more I was encouraged to pursue these and other alternatives in my own academic journey. My dream of creating a space for alternative lifestyles suddenly transformed from being a signal of my giving up into an idea that could potentially enable experimentation with the ideas I develop throughout this journey. And this course provided me with the answer to so many of my impossible questions surrounding this dream: What am I going to do about money? How can I enable exchange? How will we make decisions?

So I have divided this paper into two parts. The first part can be considered a literature review of decentralized autonomous organizations and social tokens, how they work, their fundamental differences from traditional organizations and the implications and finally some examples of their implementations. The second part is more like an essay in which I propose self-sustaining, self-governing community building as a space to implement, experiment and improve upon alternative socioeconomic mechanisms with the help of the technological tools described here. I am writing this paper in the hopes of sparking a discussion and encouraging such ideas, and also to inform such communities of the possibilities available to them.

Part I

Decentralized Autonomous Organizations

Humankind's capability to organize at a large scale is quite fascinating and the idea that this ability might even lie at the core of our species' evolutionary success warrants further critical attention to the subject of organizations. Organizations are ubiquitous in modern life, they are our main method of collective human action. While "organization" loosely means a group of people who come together under a specific purpose and could refer to a variety of things, what the term initially brings to mind is the traditional rational formal organization. That may sound like a complex concept, however a rational formal organization is simply what we call the hierarchical, bureaucratic structure of a traditional company for example. In other words, rationalized formal organizations have become "the preferred model for structuring social life (Bromley & Meyer 2014)." However, since the emergence of such organizations after the industrial revolution, organizational theory has been preoccupied with the inefficiencies born from this structure that was actually meant to maximize efficiency and productivity. Despite minor attempts of some organizations to tackle these problems by "delaying" their hierarchies or introducing informal practices, most organizations stick to the traditional style of organizing and a widespread revolutionary breakthrough is yet to happen. However, it may be close. Decentralized autonomous organizations (DAO) "involve a set of people interacting with each other according to a self-enforcing open-source protocol (Blockchainhub 2019)." But what exactly does that mean? In this section, I will discuss the emergence of decentralized autonomous organizations and how they work. I will also briefly explain social tokens in relevance to DAOs. Then, I will discuss the advantages of DAOs compared to traditional forms of organization and provide examples of real life implementations.

What is a DAO?

“Beyond their sheer diversity, they display a key similar feature: the ability to facilitate the collective management of common goods, including cultural and intangible works, natural resources, economic and industrial production, and social systems (Honigman 2019).”

While *decentralized autonomous organization* (DAO) is a broad concept that can take several forms in practice, I will try to explain its defining characteristics. A DAO is in essence an organization which means it is a “tool for coordinating human activity (Honigman 2019)” but its design is fundamentally different from that of a traditional organization. The Binance Research definition of a DAO is “an organizational form that coordinates the efforts and resources of members via an a priori binding, formalized and transparent set of rules that are agreed upon in a multilateral fashion (2019).” Ethereum defines a DAO as an “internet-native business that's collectively owned and managed by its members” and “an effective and safe way to work with like-minded folks around the globe (2021).” However, it's not easy to grasp what a DAO is exactly at first so let's dive deeper into the different aspects of a DAO.

What does it mean to be autonomous? In the context of DAOs, autonomy refers to the fundamental fact that the rules that govern the operations of a DAO are programmed or written in a source code which means that they are automatically executed in the appropriate conditions, without the influence of any kind of human actor. For this to work, the rules must be operating on a public, permissionless blockchain (although there are exceptions), meaning that it is open for anyone to join. This makes it possible to put crypto-assets directly under the control of the DAO and eliminates the need of a third-party as it would have been in the case of traditional software (Honigman 2019). And what does it mean to be decentralized? There are two main interpretations of the decentralized aspect of DAOs which are, in my opinion, complementary rather than conflicting. The first refers to the public permissionless blockchain as a decentralized infrastructure that isn't dependent on a centralized authority as I have already established above. The second interpretation adds a new and very crucial characteristic regarding the distribution of power within

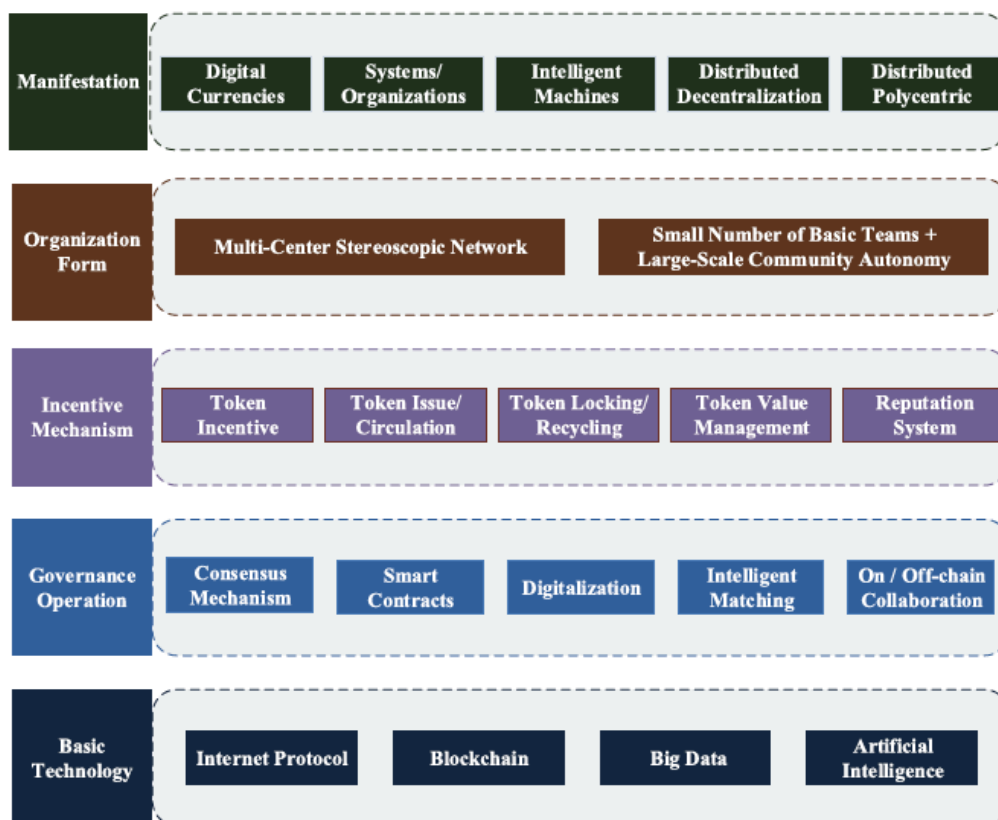
the organization: decentralization refers to the non-hierarchical structure of the organization that prevents the concentration of power in the hands of a few people. Power is exercised collectively which can be deemed a “heterarchical” structure or “based on mechanisms of cooperation without subordination (Honigman 2019).” Depending on the purpose of the organization, the code defining a DAO could need to be supplemented by individuals or organizations that provide services that the DAO can’t do itself.

“DAOs can be seen as distributed organisms, or distributed Internet tribes, that live on the Internet and exist autonomously, but also heavily rely on specialist individuals or smaller organisations to perform certain tasks that cannot be replaced with automation (Blockchainhub, 2019).”

How does it work?

First of all, a DAO needs a secure infrastructure on which to operate on and a set rules that define the organization. Before the arrival of the Ethereum Network, creating your own secure infrastructure in the form of blockchain consensus protocols was a prerequisite to create a DAO but with Ethereum’s smart contracts creating DAOs became much easier, and thus more accessible (Blockchainhub 2019). Smart contracts are basically public computer programs that automatically execute the terms of a certain agreement that is defined in its code. Once deployed, the rules can only be changed by vote through a democratic process and any attempt at an action that doesn’t comply with the set rules is programmed to fail. In addition to holding the rules, a smart contract also functions as the organization’s treasury which means the funds are also protected from individual interference (Ethereum 2021). Second, you need funding. DAOs are funded mainly through crowdfunding that distributes native tokens representing the shares of the DAO, which become a sort of currency within the organization that can have multiple purposes such as being used as member incentives for certain behaviors or voting rights within the organization. This also means that members of a DAO are not bound by formal legal contracts but rather incentivized by economic mechanisms to behave in the interest of the DAO, while also preserving their self-interest

if the mechanisms are well-designed in terms of aligning the two. Members are represented as addresses that can be owned by various entities and actions or votes are represented by transactions on the blockchain (Sharma 2021). Members have the right to propose various actions that are then subject to a voting process that requires the consensual approval of members based on network consensus rules that can be designed according to the context. These decisions can be about modifying the original rules, the distribution of funds, the hiring/firing of individuals etc. based on the more specific type of organization and objectives the DAO represents. Finally, the DAO needs to be deployed. After going live, the DAO becomes independent of its creator and it is only possible to change the code with consensus from stakeholders (Cointelegraph 2021). Wang et al. Have formulated the reference model for DAOs that can be seen below:



Reference Model for DAOs (Wang et al. 2019)

Social Tokens

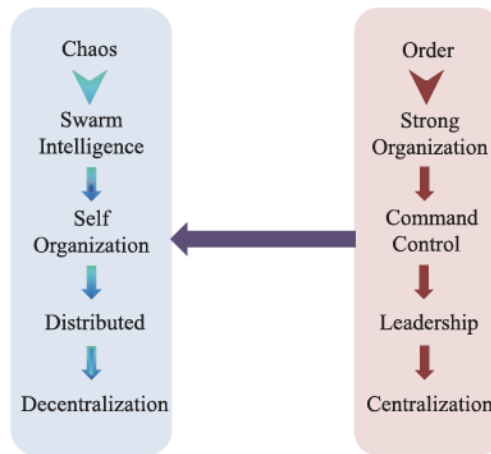
I think it is important to briefly discuss social tokens and their relevance to DAOs here because I think social tokens are just as promising and revolutionary a technology as DAOs are and they can be implemented together in some scenarios. Social tokens are a very new, very interesting topic that deserve their own paper but here I will try to explain the aspects relevant to the objective of this paper. Social tokens (also known as social currencies or creator coins) are crypto tokens that can be created by individuals (personal tokens) or communities (community tokens). Personal tokens imply that a specific individual is the driver of the token's value and the token can be exchanged for the time or labor of that individual. Community tokens, which are more relevant to this paper, imply that membership to a community is what drives the token's value and the token provides access to various resources of the community¹. Sound familiar? I would say that community tokens have a stark resemblance to the native tokens described above that DAOs use. In addition to the membership and voting rights uses of tokens in DAOs, community tokens can be used for unlocking certain types of community content.

Social tokens are basically digital assets that anyone can mint for financial and social capital. One of the most interesting things about social tokens is their flexibility in use cases, they can be just about anything which creates the potential to make them revolutionary for the creator economy (Steinwold 2020). When you think about it there is an overwhelming abundance of productive activities that create value through online content but don't result in direct financial gain for the creator: writers, influencers, bloggers, artists etc. One interesting example is \$ESSAY, a token created to crowdfund essays that both enables the writer to be compensated for their work and allows for the resulting essay to be a public good accessible to everyone (Critchlow 2021). Various platforms like Roll have emerged to facilitate the creation of social tokens or what they call "social

1. Jess Sloss Twitter page (@thattallguy), accessed 07.30.2021, <https://twitter.com/thattallguy/status/1294015548695535616>.

money” by anyone, “allowing you to own, control and coordinate the value you create across platforms.” You have the opportunity to determine the dynamics of your *tokenomy* meaning how your token will be distributed and can be spent and earned within your community (Roll 2021).

How are DAOs different from traditional organizations?



From centralization to decentralization (Wang et al. 2019)

Advantages

The characteristics of DAOs that we have gone through above distinguish them from traditional organizations in fundamental ways. The matters of hierarchy, bureaucracy, authority, power, corruption are ongoing problem topics in organizational theory and DAOs make a difference precisely in these areas. One of the major problems with traditional organizations is that they suffer from centralized forms of authority: the governments that they are dependent on comprise external authorities and the concentration of power in shareholders and other positions higher up in the hierarchy comprise internal authorities. DAOs, as mentioned above, overcome both types of centralization of power and have a decentralized collective power structure based on community which increases the voice of all members involved in the organization. Not only are DAOs a promising alternative to traditional companies but they have even been proposed as a tool for e-governments (N. Diallo et al. 2018).

Traditional organizations implement hierarchies, even the flattest organizations usually have some kind of hierarchy but with less layers. These hierarchies are meant to make management more efficient through the division of operational work and managerial work, clear lines of authority and increased accountability (Chandler 1977). However, they do so through a system of domination and subordination that produces many unintended consequences such as top-down decision making, information asymmetries and tensions and conflict between the managers and the managed (Goulder 1954; Crozier & Friedberg 2017; Dalton 1959). Hierarchies are obliterated altogether with DAOs because blockchain technology enables an efficient method of decision-making that can involve the direct participation of all members with no need for a hierarchy, even at a very large scale. Even if a traditional organization were to use voting as a decision-making method, the results would still have to be interpreted and implemented by a human being, again leaving room for manipulation and corruption.

A traditional organization operates on contracts, however unlike smart contracts these contracts cannot execute their terms themselves and need third-parties i.e. human involvement to be interpreted and enforced. The introduction of third parties into this process again results in vulnerability to manipulation and inefficiency due to transaction and management costs. Speaking of contracts, a traditional organization such as a business uses employment contracts and salaries to organize the involvement of members whereas DAOs use incentive mechanisms based on native tokens to organize members towards a common purpose. These members don't even need to know each other or trust each other as long as they trust the code, so DAOs make trust irrelevant which is also a crucial distinction from traditional organizations. The alignment of interests that result from the incentive scheme implemented through native tokens along with common ownership and participation in decision-making of all members in DAOs can also address the principal-agent dilemma common to many traditional organizations. This dilemma emerges in situations where a conflicts in interests arise between one party (principal) and another party (agent) who is making

decisions on behalf of them. In traditional companies this problem can arise from the separation of ownership (shareholders) and management (CEO), and results in moral hazards such as the agent prioritizing their self-interest where the two conflict or taking risks when the burden is on the principal. The model of community governance adopted by a DAO prevents such a situation from ever arising (Binance Academy 2021). Also, DAOs minimize information asymmetry which is a common problem in traditional organizations and fuels the principal-agent problem. Finally, one last important characteristic of DAOs is that they are transparent, their rules and activities are completely public whereas traditional organizations are usually quite private.

Disadvantages

Along with all of these wonderful advantages, it must be acknowledged that DAOs have their own shortcomings. Like any revolutionary innovative technology, there are risks just because it is new and we don't really know what a widespread adoption of DAOs could entail. We criticize bureaucracies and hierarchies now after we've seen the consequences they have in practice, but when these ideas were first theorized they were advocated for with the best of intentions. They were meant to actually make it easier to manage/govern large groups of people, they were meant to make governance more scientific and rational rather than arbitrary and personal but they resulted in unintended consequences. Let's discuss some of the anticipated problems associated with DAOs. For one, collective decision making that involves or requires the participation of every member of an organization can be very slow and inefficient. There is bound to be non-participation on part of some members since there is no obligation in the first place. In addition to hindering decision making, this situation also makes it difficult to fix any bugs in the original code which might constitute emergency situations such as cyber attacks; thus, the same immutability that might be considered an advantage also composes a risk. Another major problem is the uncertainty that is characteristic of the legal environment surrounding DAOs which might include members of very

different jurisdictions which might have limited or no regulations regarding DAOs, making the external resolution of conflicts difficult and also might discourage people from participating in DAOs. Another issue which is not exactly a problem just yet but something that deserves to be mentioned is that despite all of this talk of decentralization, a DAO cannot be completely decentralized or autonomous due to the governance rules which represent a point of centralization and dependence. Therefore, these concepts should be thought of as spectrums and different DAOs take different places on these spectrums (Binance Academy 2021).

Examples of implementation

DAOs have come to be a flexible tool for many different uses rather than a rigid type, ranging from simple to complex depending on their code and to what extent the governance of the organization is dependent on the code. The Bitcoin is considered by some as the first implementation of a simple DAO (Siegel 2020). A more complex and renowned example is The Dao. Launched in 2016, The DAO was a venture capital fund that was to be managed by the investors themselves on an Ethereum blockchain. It was a short-lived success because after the 28 day initial coin offering which raised around 250 million dollars in Ether from 10 to 20 thousand members, The DAO was hacked and taking advantage of some bugs in the code, around 1/3 of funds were drained. This event is an example of the risks associated with DAOs and may have caused a general distrust in the idea. Because The DAO unexpectedly happened to contain 14% of all ether, this problem had severe consequences for the Ethereum Network as well, causing it to split into two chains after a Ethereum founder Vitalik Buterin's proposed hard fork that caused quite a bit of controversy. The controversy was based on the fact that the code was actually working the way it was supposed to be working so the money was technically not stolen, "rewriting history" to protect The DAO would be a compromise to the values that blockchain stands for (DuPont 2017).

Since The DAO, more DAOs on a broad spectrum of use cases have emerged. DAOs can be used for venture funds, philanthropic organizations, social media platforms, the operation of IoT devices, freelancer networks, mutual insurance, natural resources, software, works of art etc. (Honigman 2019; Binance Academy 2021; Cointelegraph 2021) I want to briefly mention three cases that I find to be especially intriguing and that I think are more relevant for the second half of this paper. One example I found especially interesting is Aragon Network which is a DAO devoted to supporting and facilitating the creation of more DAOs through providing platforms, tools and even a decentralized digital jurisdiction for conflict resolution (Aragon Association 2021). Another is Colony, a DAO that, by providing infrastructure and tools, enables people to build online organizations that are customizable to the context to enable experimentation and gradual adoption. They have a vision that challenges the rigid and problematic traditional conceptualizations of work and companies, and tools to promote “a Cambrian explosion” of organizational forms that were previously impossible (Colony 2021). La Suite du Monde is an interesting DAO that represents a communalist movement that has the purpose to support self-sustaining, autonomous local communities or “imagined communes” through the provision of various services and resources. They acquire land and real estate which they then free for the use of these communities or projects that are in line with their vision of autonomy and work to make these models multipliable and connected to each other (La Suite du Monde 2021).

Part II

“We believe that the fate of humanity will be decided at the frontier of technological innovation. We will either see technology lead to a more free, open, and fair society or reinforce a global regime of centralized control, surveillance, and oppression. Our fear is that without a global, conscious, and concerted effort, the outlook is incredibly bleak.

The Internet has opened the doors for universal, cross-border, and non-violent collaborative effort to fight for our freedom.

However, the Internet has also opened the doors for global surveillance and manipulation. We believe humankind should use technology as a liberating tool to unleash all the goodwill and creativity of our species, rather than as a tool to enslave and take advantage of one another.
(Aragon Association 2021)”

To some, these examples and everything we have discussed regarding DAOs and social tokens may seem like intriguing new trends or profitable business/investment opportunities. I think they have the potential to be so much more. The fundamentally different nature of DAOs from traditional organizations, and social tokens from traditional money have the power to change how we organize and how we exchange, for the better. The widespread adoption of these technologies can pave the way for new paradigms in organization and exchange. Not only that, these developments can revolutionize governance in a way that benefits the majority of humankind. In our contemporary world, we have a myriad of social problems that we just can't seem to solve within the parameters of our current socioeconomic systems. These complex problems need collective solutions, individual efforts are not enough. Thus, the way we organize in the face of these problems is of utmost importance; organizations are how we act collectively so the way they are designed matters. Unfortunately organizations are path dependent and exhibit inertia, they are also prone to various forms of isomorphism which make it extremely difficult to break free from traditional organizational forms that operate under the influence of neoliberal ideals (DiMaggio and Powell 1983; Schreyögg & Sydow 2011). The problem is not a lack of ideas, brilliant minds have been working on solutions, but they need to be implemented and improved upon. Considering the role that the emergence of a new technology —the steam engine— played in the industrial revolution and how this revolution became critical in determining the socioeconomic systems of

today, it seems reasonable to anticipate that any revolution to come will have something to do with innovative technologies. In their book “Radical Markets: Uprooting Capitalism and Democracy for a Just Society,” authors Eric Posner and Glen Weyl claim that we need to intentionally design new socioeconomic mechanisms that work better for more people if we are to do something about the multitude of problems associated with capitalism and democracy today (Posner & Weyl 2018). If we want a more equal, a more just society, it isn’t going to happen by itself. We need to design for it.

Combining the ideas from “Radical Markets” with our discussion about DAOs and social tokens, I would like to propose the idea of self-governing & self-sustaining community-building as a space to implement, experiment with, and develop alternative forms of governance. In other words, communities could take the organizational form of a DAO and use community tokens to implement various economic and governance mechanisms and intentionally design their micro socioeconomic systems and observe the consequences within their societies to improve these mechanisms before large-scale adoption. This would provide the opportunity to not only evaluate how alternative mechanisms work for specific isolated purposes but also how they would work together as a system. Not all DAOs are successful and they’re not appropriate for every context but a well organized community with a well thought through orientation process, well planned structures and roles, effective method of communication and mutual purpose could be the perfect setting for a successful DAO (Kohli 2021). Let us discuss various governance mechanisms that could be implemented with the use of DAOs and community tokens.

Of the mechanisms proposed in Radical Markets, I want to elaborate on two which I believe could be appropriate to implement in a community: the COST and Quadratic Voting. The COST is a mechanism proposed in the context of the monopoly power and allocative inefficiency born by property rights. It is based on the idea of partial common ownership in which “assets belong to no one and everyone” at the same time. It is a system of competitive common ownership that is

enabled through the use of auctions which are claimed to produce higher allocative and investment efficiency. In this system assets are not bought or owned by any one individual but rather usage rights can be gained through a decentralized auction in which the highest bidder gains those rights until someone bids higher. However, the user must pay a “common-ownership self-assessed tax” (COST) based on their bid value, throughout the period that they have usage rights over the asset. COSTs would then ideally be distributed equally to members of the community as social dividends which would also ensure a sort of equal universal basic income within the community (Posner & Weyl 2018). Imagine a self-sustainable community that adopts the organizational form of a DAO. This system could be implemented through the use of community tokens in which members would be allowed to use the assets of the community through such auctions while paying the COST back to the treasury of the DAO. One related idea from the book that I find important is that such a system could change the way we relate to the material world and our feelings regarding ownership. This innovative economic mechanism could have the power to produce significant cultural and social change within the community (Posner & Weyl 2018).

Quadratic Voting (QV) is a governance mechanism proposed in the context of the tyranny of the majority that arises in traditional representative democracies that use a one-person-one-vote (1p1v) system. It is in fact a mechanism for decision-making in which members have an equal share of voting credits that they can allocate directly to the resolution of certain issues. However, QV penalizes radical views by increasing the price of additional votes quadratically i.e. one credit for one vote, four credits for two votes, nine credits for three votes and so on. The main advantage of this system is that it reflects the intensity with which one cares about a specific issue which is completely obscured by 1p1v voting (Posner & Weyl 2018). This mechanism for collective decision making can be used in all sorts of decisions and can be implemented through the design of voting rights in the DAO’s smart contract. An important cultural/social transformation this mechanism

promotes is the participation of members in their own governance in contrast to the passive citizens we see in democracies today (Posner & Weyl 2018).

In addition to these two mechanisms, there are other alternative systems of governance that communities are already implementing and that could benefit from the advantages that DAOs and social tokens provide. In this paper, I will elaborate on Sociocracy as an example. I specifically chose Sociocracy as an example because it is a system that is currently being adopted in many eco-villages which represent a good example of a self-sustaining community and also other kinds of intentional communities (Sociocracy For All 2021). Sociocracy is a term first used by Auguste Comte and referred to the governance and organization of society by the science that studies precisely this. The concept was built upon and transformed into a specific system later on. Sociocracy is built on the idea of consensus-based decision making or simply gaining the consent of all members through discussion before coming to a decision. The three fundamental principles of Sociocracy are that all members' interest must be considered in the decision making process while each individual also respects the interests of the group as a whole, no decisions can be made without complete consensus and once a decision is made all members must abide by the decision. This system might work well with small group but it seems problematic at a large scale. The proposed solution to this problem is that when a decision can't be made either due to size or any other reason, a representative group goes through the same process to arrive at a decision (Rau 2018). Unlike the trustless nature of blockchain technology, this system emphasizes trust and cooperation and one claimed advantage of this governance mechanism is that it fosters trust and cooperation within a community. A more modern adaptation of Sociocracy designed by Endenburg specifically addresses the problem that a need for trust creates in environments where it is difficult to foster and maintain trust among all members such as companies with constant turnover of employees: the Sociocratic Circle Organizing Method. Now known as a circular process or feedback loops, this system involves decision-making through a hierarchical structure of linked circles that are the units of an

organization (Rau 2018). Regardless of the community's opinion on the role of trust within an organization, both mechanisms could be coded on a smart contract and maybe produce insight into which one works better.

Conclusion

One crucial advantage of DAOs and social tokens is that they are very flexible in use cases and can be adapted and customized to various contexts which makes them perfect for experimentation and development. Using these tools we have the opportunity to design our socioeconomic systems and create structures that work for all of us. Perhaps similar to the industrial revolution, we are at a point in history where we have the revolutionary opportunity to redesign our socio-economic systems while they are being digitalized. We could also just end up transferring the existing inequalities and biases to these systems if we do not intentionally try to fix them. The benefits in governance that can be gained by DAOs and social tokens towards this goal deserve more attention. I have explained what those benefits are to the best of my knowledge and proposed an idea towards the development of the uses of these technologies and their implementation and adoption. Hopefully, I have planted the seeds of what could be an ongoing conversation that would give birth to more and better ideas and their implementation.

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