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It does not make sense to call this "peer-to-peer" anymore

An interview with Jaya Klara Brekke on the politics of blockchain and cryptocurrencies

Jaya Klara Brekke / Raimund Minichbauer

***Raimund Minichbauer**: You wrote an Hippocratic oath for blockchain developers, called the* Satoshi Oath,[1] *which includes the following statement "When you are developing your own blockchain based application you are not just making another app or involved in another startup, you are taking part in creating a new form of society." This sounds like a rather substantial claim while being very neutral at the same time. It does not say whether it is changing society for the better or for the worse. It is hardly possible to answer this question in general, but when you evaluate the situation today, which substantial changes might the blockchain bring about?*

Jaya Klara Brekke: That statement was written strategically in a way. It was intended to get the reader's attention and to get the reader to feel a sense of responsibility: When you create digital platforms – assuming they are successful – you influence people in subtle and powerful ways, so you should really think about what

you are doing. The statement was about making sure that people do not assume that what they develop is simply neutral and based on a kind of market demand. It actually structures things.

And the statement was written from a hopeful point of view. It was written at a time when the future was more open-ended for the blockchain. There was more of a feeling that there was a potential for changing things in some radical way, based on a kind of feeling that money systems and information networks were two very powerful large-scale infrastructures which structure behaviors, interactions and relationships in powerful ways. The way I feel now, to be honest, is that a lot of the same old problems are being reproduced in this space. This might be a temporary phase, because speculation is so rampant at the moment and people are making a lot of money, so there is less of a focus on what the technology can actually do and the full scope of cryptography. People are more focused on the market value of the cryptocurrencies. That creates certain types of behavior that have less to do with changing the world in new and interesting ways and more to do with reproducing the shit that is the existing financial system and the existing monopoly digital platforms in banal, boring and horrible ways. I am very cynical in this current time, to be honest.

***RM**: Could you please give a brief overview of the main communities – or the main strands in the blockchain community – focusing on the political aspects: Is there a mainstream and underground, left and right-wing, etc.? (You talk about "the blockchain community" in the singular. Is it still the case that there is* one *community rather than a multiplicity of communities?)*

JKB: One of the reasons I became interested in the blockchain was that it scrambled pre-existing political categories that I had. In other words, new theory needs to be developed, and it really

requires us to pay attention to what is happening, the possibilities, the surprises and so on. It scrambled pre-existing political communities, people mix in strange ways from both the left and the right, from libertarian and anarcho-capitalist backgrounds, from socialist backgrounds, etc. They meet in this space where certain principles and ideas exist, like decentralization, transparency, autonomy and anonymity, for which there is a shared subscription. However, if you dig a little deeper, the actual understandings of those terms turn out to be quite different. Cypherpunks and other political movements that are based on cryptography and hacker ethics were very present in the early days. Things sort of exploded from there. You are right. Now you have a multiplicity of communities, but they are not so clearly delineated yet. Sure, you do, for example, have leftist anarchist tendencies, but they collaborate and interact with libertarians and hyper-capitalist startups and many attend the same conferences as major financial industry and government actors. There is a funny enthusiasm around certain aspects of the technology, which means that there is another form of community layer on top of all these different political strands that come together around what is essentially an excitement about the tech. This is still present to this day, even though it is turning into more of a typical business-oriented startup environment.

There are aspects of the technology that lend themselves more towards right-wing libertarianism. When I first read David Golumbia's *The Politics of Bitcoin: Software as Right-Wing Extremism*,[2] I was skeptical and felt that he was painting an incorrect picture of the politics of the community, because he did not take into account the strong roots in Open Source and decentralized communitarian anarchist thinking that form the history of peer-to-peer. However, the more things have been

developing – let's say in the past year or two – the more these right-wing libertarian tendencies have been emerging. Also, it seems that there is something about the structure of the technology, the built-in monetary ideas and the fact that markets and tech are trusted more than humans. Blockchain tech really does orient the mind and one's efforts towards private property along with some of the more simplistic economic theories of market dynamics, because that is what a lot of the projects are about: Registering ownership is what it has been reduced to, whether that means ownership of digital assets or contractual relations or ownership of currency or whatever. It is heavily based on delineating property. This mythical rational economic actor from market theories is taken for granted and used in most security models in the space. Nevertheless, I think there is something interesting there and something that is still unpredictable and open-ended regarding how this kind of digital scarcity basically interacts with its own roots in a strong culture of openness, free software and anti-copyright. This aspect should really not be underestimated, and it is part of the culture that I think Golumbia and too many blockchain critics overlook all too easily.

RM: *In a paper on the* Satoshi Oath[3] *you relate the background of blockchain to a critique of or reaction to the financial crisis. The main reactions were influenced by the idea of* "code-as-law," meaning the replacing of social relations with hard-coded rules. *Have there also been any concrete relations between the blockchain community and e.g. the anti-austerity movement?*

JKB: Sure, there are people that were involved in Bitcoin early on that were absolutely also involved in the anti-austerity movement, but it was not like it was one common movement. Bitcoin was part of the broader spectrum of responses to the crisis, let's say. So if you went to one of the anti-austerity or Occupy demonstrations,

you would go to these places and there would be tents and there would always be a tent or two that had a Bitcoin-symbol. The Bitcoin whitepaper came out in November 2008, which was right when the financial crisis began, and it was pitched from the very beginning as an alternative to the existing financial system.

***RM**: How was it related to political or social strategies?*

JKB: When it comes to politics and political activism or militancy, there are different strategies that people have tried to use within the space of cryptocurrencies. The main example that is always brought up is the financial embargo against WikiLeaks. When the major payment providers like Bank of America, VISA, Mastercard, PayPal, etc. blocked donations to WikiLeaks after they released the war logs on Afghanistan and Iraq, Bitcoin provided the platform for them to be able to continue receiving donations. This is often brought up as a main example, and it is an interesting example as it is a political moment that the left *and* the right can subscribe to, and that somehow speaks to a different type of political community that is about anti-censorship, about the politics of leaking, transparency and truth. That was very powerful at the time, but again, I think the situation has started to become very confused regarding who should be able to be anonymous or what transparency or anonymity actually means in terms of its relation to power. There is a lack of understanding of power in the cryptocurrency scene. What I mean is that transparency for individuals vs. the state is not as simple as it seems. The individual in question might very well be a very powerful and wealthy person and the given state in question might be the last resort for some sort of accountability for the actions of that person. I guess what I am trying to say is that there are these different ideas of freedom and oppression swirling around in which it is easy to associate "the state" with oppression and tyranny, especially when you come from

the U.S. Anonymous wallets or anonymous contractual relations can also create spaces for shadow banking or for various strategies for corporations – also very powerful actors, in many cases far more powerful than a given state – to avoid accountability. I know that the response to that would be "well, that is the cost of freedom," but it is a very specific U.S. libertarian understanding of freedom that is based on assuming that markets and technology are neutral and the state is political and oppressive, as if the market is not. This is a serious flaw. There are some serious problems right now which I think will require some careful political unpicking. The WikiLeaks strategy of going around embargoes is a repetitive pattern and something that can be a very useful tactic when used by the oppressed and marginalized, but when it is an agenda that is suddenly advocated by new business startups I become suspicious. Who is actually being disrupted here? It is just not the same thing.

Greece is also an example that has been brought up a lot, especially a couple of years ago. When the financial crisis hit, and it was clear that Greece actually had no economic or even political sovereignty and that democratic processes didn't matter in the face of the Troika (the International Monetary Fund, European Commission, European Central Bank), there was a strong interest in crypto-currencies – from people and grassroots political collectives as a way of getting around capital controls for moving money,[4] but it was also, famously, explored by the finance minister of the Syriza government, Varoufakis, as a way of ensuring some liquidity in the economy and some level of economic sovereignty. In the end, nothing major really happened with cryptocurrencies there, but it is a typical political use case that the blockchain community constantly looks for in which the government fails and cryptocurrencies are able to provide continuous liquidity and some level of economic autonomy and resilience. So the crisis in Greece

also brought a lot of attention to both state and extra-state geo-political power and the potential of cryptocurrencies within those relations – a lot of which still remains to be seen. Another case that people in the crypto community got excited about was Venezuela and some stories from there about people using bitcoin in the face of hyperinflation. There is a problem here of oversimplifying stories though, and not looking into some of the deeper economic and geo-political reasons for why a given currency or economy is having problems. And then of course, Venezuela, as the first government, issued their own cryptocurrency, the Petro, backed by oil, but that is still a pretty unclear situation.

To get back to your question though, another political strategy that I am touching on here is the potential of economic and monetary autonomy. The power of developing one's own currency, which probably draws from a more straightforward leftist communitarian politics of complementary and social currencies. Or actually, again, it cuts across political lines really! And is about economic autonomy. But to translate a cryptocurrency into actual autonomy, you need not only a currency, but an economy – meaning things produced, and traded using that particular currency, and that is not actually a reality yet, for any of the cryptocurrencies. They all interface with, lets say, fiat based economies. One of the very few explicitly anti-capitalist anarchist efforts is FairCoin.[5] It is one example of this idea of using the blockchain for scaling social currencies and complementary currencies or creating more effective interfaces and interoperability between several existing social currencies, so that you have a cryptocurrency layer that mediates between a whole ecosystem of other currencies. There is actually another kind of political strategy here that is explicitly articulated, which is tax disobedience. It is a kind of politicized tax avoidance, where, for example, self-employed

individuals who need to pay a fee in Spain can group together within the formal structure of a company to avoid paying that fee. These are the kinds of interesting contradictory politics going on where, let's say, the lines between tax disobedience and tax avoidance blur in the technologies that make both possible. It is the same case regarding the contradictions and issues around privacy and transparency.

This is why I think we need new vocabularies and thinking in this space, because words like transparency, privacy, decentralisation and so on are so contextually dependent in terms of their political meaning and they are increasingly losing their specific context and so are becoming – politically – meaningless and toothless.

Anyway, I think those are some of the main applied political strategies of the blockchain, anti-(economic) censorship, economic autonomy and self-determination, but when we talk about the embedded politics, for instance, of how the consensus protocol is structured that's a different question that I could speak about for hours. That is a bit more technical and in fact more insidiously ideological.

***RM**: Do the more community-based projects make use of the technology rather than developing it further?*

JKB: Well, they DO develop it further. Because they are actually trying to create other forms of consensus protocols, for example, or other methods in which money creation is determined. See the proof-of-cooperation consensus protocol for example. So there is definitely development in that area, too, but there is a different dynamic that happens when you have a cryptocurrency entering the highly marketed and very profitable space of potentially becoming the next monopoly platform. Those currencies get a lot more

attention, and there is a different dynamism around them than the currencies that are built alongside social movements that are critical of market dynamics, and which carefully try to understand the social implications of how they are structured as well as where the growth of the currency is more tied to real production rather than speculation. FairCoin is trying to do this, which is extremely difficult, because – whether you like it or not – your currency ends up in an open market for currencies.

***RM**: For FairCoin, for example, it is nearly impossible to establish one's own space for developing the currency, but you automatically become involved in this overall dynamic?*

JKB: FairCoin has this interesting setup at the moment. They have an internal exchange rate for the community, which is set to the euro and which is determined by an assembly. This is done in order to have some level of control over how the economic space operates and for the currency not to fluctuate wildly. This is essentially a little bit like the role that a central bank normally tries to play – to mediate that the currency does not fluctuate like crazy on the open market. However, it is hard to avoid having the currency traded in the open market whether you like it or not. There is a certain dynamic concerning what happens when your internal exchange rate is different than the one on the open market. There are obviously people that can take advantage of that. For instance, you can buy from the community cheaply and then resell for profit externally. So in this sense, the market rate still influences your currency. You have to take into account the market rate when you determine the internal exchange rate for the community, and that's a really tricky thing to do. Then you start to realize that, sure, there is something new and something interesting with cryptocurrencies. However, there are also a lot of the old problems that one has to deal with in terms of economics and monetary

policy, which are some of the old problems that central banks have been trying to deal with for centuries – they are just in a very different kind of setting now.

RM: One more question about the historical background. You mention "blockchain as a tool for circumventing geopolitical control of global financial flows.'"[6] Is this what you were referring to before about Greece?

JKB: Yes, the WikiLeaks case was kind of a test to find out the potential power of something like Bitcoin that really disrupts the control that specific companies and countries like the U.S. have over global financial flows, where there was a possibility that there could be global flows outside of the control of the U.S. government. For me that was one of the really interesting things in the very beginning, too – this culture around who actually controls the networks while being able to create our own. However, it has developed in the present in a problematic way again. "Disintermediation" is one of the main terms in the blockchain space. It is the idea of taking away the control of the U.S. government, Visa, Mastercard, PayPal and so on. We "disintermediate" them and we can have this peer-to-peer network of global financial flows controlled by the network itself rather than any external force. That's great, but when you start to see how the actual infrastructure that supports those flows is evolving, you realize that you did not exactly get rid of those intermediaries, you just replaced them with something else: a new set of actors and systems with a different vocabulary and methods. Or, actually, even worse – another layer of intermediation without even getting rid of the previous intermediaries! In our current situation, there are no real systems for accountability for those actors, because we have not quite figured out how power operates within these networks yet. We have miners, full nodes, developers. There is some form of

checks and balances. Since protocol changes need to be adopted by miners, users have some say and so on. However, there are a lot of problems in that space right now, and it is really not so easy to say that we now have this peer-to-peer system. The whole concept of peer-to-peer creates this idea of a horizontal network of equal nodes and vectors that have direct relationships with one another, which is just not the case when you look more closely at the dynamics of the major cryptocurrencies.

The vast majority of people using cryptocurrencies are NOT peers in any strict sense. I don't think that it makes sense to call things peer-to-peer anymore, because even if and when there is a small part of a given network that might be considered peers, there is a lack of consideration for how all the rest of the interactions are taken care of in a responsible way. I think accountability is going to be the next important area to develop. It would be a shame if this defaults to existing systems where a given platform is simply understood and regulated as a service provider, because one of the interesting aspects of, for example, Bitcoin and much of the crypto space continues to be the openness and potential for getting involved, and feeling a sense of ownership like a common project of learning and developing.

***RM**: Coming back to the Satoshi Oath: the oath as a format is very specific as it directly addresses the individual or the developer as an individual, and this is rather different from, for instance, writing a manifesto about where blockchain should go. Was this reliance on the individual already a reaction to this form of community or non-community that you have described thus far?*

JKB: To be honest, it was exactly this point which I thought was the weak point of creating the oath in the first place, because you are right: addressing the individual and the ethical choices of the

individual is a little bit too simple in the face of huge structural questions. It also brings up the feeling of "if this developer chooses not to do this, someone else is going to do it, because there is a market for it." It feels a little bit weak in that sense, but the oath was actually intended as a first step in creating a community and a certain culture of awareness around these technologies. Just to give you a bit of a context: I was asked by a company called B9Lab to write the oath. B9Lab provides online training for blockchain developers and is one of the main online training companies for blockchain. They asked me to write an ethical module for developers. In this module, I discuss some of the major hacks that have taken place in the space, and tried to address some of the assumptions – that this technology is immutable, decentralized, peer-to-peer and so on – and tried to unpack that and give the developers some tools for understanding what the ethical and political implications of what has been happening in this space are. The idea was that once they had gone through this whole training process, there was this oath that they could then sign as some form of a ritual, a way to give a sense of "I am signing up to a community that is actually going to take these things into account, that is going to think carefully about what they are doing." Elias Haase, who commissioned me to write the oath, and I are working on additional methods for creating such a (rather closed) community with a certain culture and a certain ethics around how you engage the blockchain. Coming back to your question: I guess a manifesto requires a preexisting collectivity around something, whereas the idea with an oath is that we are trying to generate some form of collectivity.

I think that a general shift has taken place in understanding and in people's feelings regarding technology over the past year or two. People don’t view technology as being transparent and neutral like

they used to. The more sinister powers of platforms like Facebook, Google, Twitter, etc. are quite well understood, even in the mainstream. The illusion of neutral technology is slowly fading away and I think that there is a possibility right now for creating a sense of and a culture within the development of technology that is extremely responsible, experimental and vigorous and interesting and much more open-ended than it was before.

***RM**: "Distributing Chains," your PhD project of "research into emerging political and geographical implications of the blockchain"[7] focuses on three aspects of the blockchain: protocol, governance and interfaces. I am mainly interested in the aspect of collectivity and would thus like to mainly focus on governance. What kind of research have you done on that topic?*

JKB: Just to give a brief overview of those three areas, because I treat them as quite interlinked: It is my way of trying to work out how to understand what is actually taking place with the blockchain, what matters and makes a difference politically with this new technology. I began by looking into the protocol, because I wanted to understand what the embedded politics of blockchain technology were and what the structuring aspects of what is written into those protocols is. From that point of departure, one can move on to the question of who writes the protocols and under what conditions? This is the governance layer. How are protocols, protocol changes and maintenance governed? If there are now protocols that mediate consensus across a decentralised network, how does dissensus take place? Of course, the layer of governance does not fully determine the political outcome of blockchain applications either because of the interface with other systems. The interface layer is about the contingencies between the systems that are deployed and other systems that already exist in the world.

The way that I have been researching the governance layer has been to look at conflicts and hacks again. Conflicts and dissensus reveal a lot about power dynamics and governance in systems that otherwise assume these to be resolved. It is the political moment in a space that is trying to get rid of the need for politics. The blockchain essentially was pitched as a governance technology, as something supposed to resolve the problems of politics and the issue of conflicts. There is a consensus protocol that determines which transactions are considered valid. This was then extrapolated, generalized, let's say, in the Ethereum generalized platform. So it was assumed that we no longer need judges, politicians, etc. for implementing policies and laws, because policies and laws are now code that runs automatically. I am interested in looking more closely at how these technical mediations – which are certainly not going to resolve the problems of politics, conflicts, interests and so on – just shift these problems to different spaces and reconfigure them. To this end, I look at conflicts around changes to the protocol. My two main cases of study have been the Bitcoin scaling conflict[8], which is one of the major ongoing conflicts in the space, and the Ethereum DAO hack, which happened in summer 2016[9]. I try to understand the dynamics of who emerges as powerful and as a decision-maker in this space, and how this works out across the different roles, between the developers, the miners, those who have access, those who don't, the full nodes, regular users, exchanges and so on.

RM: *On the one hand, it is assumed that everything is hard-coded and immutable, but when the question of a fork arises, the question of mutability, then the community comes back into play. There seems to be a very specific relation between immutability and the community where one tends to replace the other. Would you agree?*

JKB: Very shortly after the Ethereum fork took place, you would hear things like "only social consensus trumps code" which I think was a tweet by @d11e9 at the time. There was a lot of grappling for explanations and development of new ideas and so on around these events in order to justify and make sense of the decisions that were made. There is something interesting about what "social consensus" means in this context. What is the social here which is emerging around this stuff? Sometimes there are comparisons to democracy or voting in certain aspects of how protocol changes take place or even in aspects of mining, but it has nothing to do with voting. It has nothing to do with democracy. It is a completely different form of signaling and developing opinions about things. And it is a very particular form of signaling and developing opinions about things that is still being worked out in terms of its implications politically and more broadly.

***RM**: It seems that there is somehow this idea that social consensus is no longer necessary, but then when it does become necessary there are no structures or processes for it.*

JKB: Exactly. There is constantly this *aha moment*. Then decisions are made on the basis of what feels comfortable in the moment, based on technical or market constraints in quite informal ad hoc ways. That is what I meant earlier in this interview when I said that there are no mechanisms for accountability in this space yet. There is just an assumption, an "oh, there is a social consensus," which is then tested amongst miners and in miner adoption. These problems are not explicitly named as political or social problems. They are just add-ons of mushy humans (laughs). You have this idea of a perfect system, this perfect clean mathematical loop, and then you have to plug humans into the loop, and that is annoying. FairCoin or similar projects are much more the other way around. They try to understand what our needs are and then build tech

accordingly... or not. This is something I try to push for a lot. I mean, get rid of this ridiculous superstition that exists around technology and bring it back down to earth. We build these things and we are absolutely responsible for the way that they affect the world around us on all levels. We can make active decisions concerning them. It does not just evolve in some kind of inevitable way. Of course, developers and researchers are the ones who do the work within the space and they *know* this. This is an object of our creation, our experimentation. Nevertheless, there is somehow this superstition around the neutrality of the protocol and the market dynamics that always takes precedent in people's minds – this idea of the perfect flawless truth machine[10].

***RM**: DAO, the Decentralized Autonomous Organization, is sometimes referred to as the most important innovation triggered by blockchain technology. Could you please briefly explain what the DAO is? Are there any interesting examples you can talk about?*

JKB: In order to explain the basics, I would have to depart from "smart contracts." The name is somewhat misleading, because it is based on the idea of coded law and code that executes law, which is certainly an ideological way of describing what code is. A "smart contract" is code that runs on a decentralized blockchain-based network. The "contract" is held across nodes in the network. This means that if anyone sends a transaction to that contract, it will run. Once it is written and deployed, there is no single person or authority that can stop it or control it, because it is near impossible to control or shut down all the nodes that also hold the given contract. Like currency transactions on the blockchain – it is a similar idea for applications and contracts. I always try and make these things a little bit more banal, because there is a lot of hype around them and a lot of superstition. The only reason that this code is "autonomous" is that it is on a lot of different computers,

and to shut it down you would essentially have to take down all of those computers. That is all it is. It does not have any kind of a will of its own or a soul or spirit or mind. Ok, fine, people bring ideas of the future of Artificial Intelligence into this space, but that is a different topic for discussion that I also like to pick apart.

The idea with the DAO is essentially that you can make a cluster of these smart contracts, which will form an administrative or organizational core of basic rules for how an organization runs, and it will run that way automatically. There would be rules like "if this happens, then pay this person," or "when this requirement is met, then execute this code," or "do this once a month," etc. That can then sit as an organizational structure on a decentralized blockchain in a way that cannot be controlled by any single person or authority. In this respect it is a solution to a problem where it is unclear whether there *was* a problem in the first place. But the DAO can automate certain aspects of organizations or companies, so it can potentially make organization a lot easier, which can also be useful for movements and activist contexts. However, there is a lot of thinking that had to go into it. You would need someone who knows how the contracts interact with one another, the unintentional knock-on effects and so on. There is also the broader question of whether that would be the best way to go about making organization easier, given problems like the environmental costs and complexity of the system. To me, the main innovation of the blockchain is the question of developing governance in other ways. Cryptography is a very interesting technology. You can do phenomenal things, like prove that a dataset has not been tampered with. The potential for me lies in the blockchain as a database that can be updated and changed in a manner that is transparent. It is the consensus protocol, the provability, the cryptography. People are talking about trust and resolving trust in

this space. It can do that, but for very specific situations, and not as some kind of final solution. Not all problems are trust problems. However, I am less convinced in terms of the DAO existing as some kind of autonomous governing entity. Someone will have coded it, and, as we have learned with the DAO exploit: social consensus trumps code.

***RM**: What is your opinion on cryptocurrencies as a way of making alternative technical infrastructures sustainable? The problems here are often not technical or conceptual. Instead, the problems consist in not being able to sustain the infrastructure in the long run. So many projects are just based on the free labor of a few techies in which the whole thing begins to crumble sooner or later. Do you think that cryptocurrencies could be a way of solving this problem?*

JKB: At the moment, you can make a lot of money in this space. So as a political strategy there is a more cynical approach: Go in, grab a lot of money and then use it to finance something else. The problem is that people do not see the full ecosystem here. The reason why there is a lot of money in this space now is that many people are buying into it. So you are literally making money off of others. And concerning creating a currency and having that solve the problems of scarcity, there is something people keep forgetting: It is not just about creating a currency. You need to create an *economy*, like I mentioned briefly earlier, which is a much more substantial endeavor. At the moment, many cryptocurrencies operate in a way in which you can use the currency to pay people. However, they do not want to be paid with that currency. While the cryptocurrency potentially has market value on the currency market, it cannot be used for buying much in the supermarket, it is not being used for resources in production processes and so on because there is no economy around these cryptocurrencies as they currently exist. As long as the currency gains value in the currency

market, and you can exchange it for euros or pounds, then great. It is a strategy for creating some level of sustainability. However, if you think about sustainability in the long run – meaning, paying people decent wages – then no. To that end, you would not only need to build a new token, but a new economy.

In the meantime, when I think about politics and political strategies, I've been thinking less and less in absolute solutions. The concept of sustainability makes us think about how we could create a perfect equilibrium; how we could create the perfect, balanced internal economics for running things and for running them forever. However, the world is more complicated than that. There is never such a balanced system, but there is a set of conditions, which change pretty quickly in the way we live right now. Nevertheless, they can open up certain strategies that you can use, and there are a lot of strategies that can absolutely be used in this space right now. That's certain, but I am not naive enough to think that this is going to somehow create long-term sustainability for alternative platforms. That is a much bigger problem. It is not just about digital networks. It is about our wages in general. It comes back to the broader question of the economy, which ties digital labor much closer to any other type of labor in which wages are just destroyed, and the various political battles surrounding that situation – and I don't want to drive our attention away from that to some escapist fantasies of a new tech solving all that in some future scenario.

RM: *"Long-term sustainability" was not meant as a kind of utopia, but more as a way of creating just* some *kind of sustainability rather than having the sort of infrastructure that crumbles if one developer gets sick or leaves.*

JKB: I agree. I just want to add one point concerning the blockchain: It makes people think more about money. You are right in saying that things have been run in quite unsustainable ways and that they run on a certain type of activist goodwill and a certain form of political energy that ceases after a while. People have burnout and other consequences. There is a lot that has been learned in this space and there are a lot of taboos that have been broken down.[11] I think there is a tendency to not want to think about money from anarchist and leftist points of view, because money is considered this necessarily bad, dirty, capitalist thing that is always going to be exploitative, and to thus not want to think about company structures or personal economics. However, this is changing. When I said earlier on that you see these anarchist coders ending up in conferences with bankers, I do not mean that it is all that bad either. I think there is some interesting loosening up of ideas that can allow for a re-assessment and clarification of what the politics here are, what it is that makes sense, and what does not make sense. There are also aspects of our past that do not make sense. The burnouts and unsustainable practices that you mentioned are absolutely some of them. They are based in many ways on scarcity and on self-imposed austerity. There might be something to learn regarding how to run economically sound companies, however tricky that may sound to anarchist coders who have spent their lives fighting against corporations. What I mean is: One of the nicer things about blockchain is that it puts the question of money and economics on the table for everybody to see, and it gives us a big opportunity for thinking quite differently on all fronts. It is actually a huge educational project. One of the biggest benefits is that there is huge potential for people to learn a lot about how money works and how economics works and to experiment with these things. The only issue is that a lot of the space is defaulting to corporate structures as some kind of natural

organizational form and to markets as some natural state of freedom.

***RM**: Concerning what you said about education, the problem is that it is always difficult to understand whether people or organizations still raise questions regarding money in a good way or if they are already drifting into neo-liberalism.*

JKB: Yes, and to be honest, that is why I said all these negative things in the beginning of the interview. I think that is what has been happening in the past year. It is like an insane neo-liberalization combined with too much openness to right-wing thinking, and that really needs to be countered heavily.

***RM**: Would you say that the situation was still different, let's say, two years ago?*

JKB: Yes, I would say so. There was more of an openness. There was still also a clearer idea of who "the enemy" was. It was a bit easier to talk about the "evil centralized corporations" and the "evil centralized governments," and "we the community" are doing all these things. However, we the community is now working heavily with governments and corporations. So the question arises: What exactly do these things mean then and whose interests are we serving here? I don't want to say that working with governments and corporations is necessarily a bad thing. Hopefully the interview has shown a pretty nuanced take on that, but rather since "the enemy" cannot exactly be contained by such words as "centralization," "government," "corporation," etc., it needs to be redefined. What I mean is that politics are becoming modeled now for those who wield power, in whatever form it takes, for taking advantage of that and for pushing their own interests in that scene. There is a new vocabulary that needs to be developed here, because

the existing vocabulary that people are basing their assumed politics on just does not make sense. It is not quite sufficient yet in naming the actual power relations that we see emerging in this space.

***RM**: So you would say that the main counter-strategies would have to start at this level of defining the basic notions anew?*

JKB: Yes, that is what I am really interested in and what I am trying to do at the moment. The strategy is: First of all, destroy the double-speak and the smoke-screens. In other words, do not let people get away with calling things "peer-to-peer" or "decentralized" or "immutable" if they are just not those things. Then start to look carefully at what is actually going on and try to develop names for it that make sense, so that we can actually get an understanding of what is happening politically in terms of power and to assess whether the effects of these technologies are something that we subscribe to or not. The second point is mapping, basically to find out who is taking advantage of what for understanding the new types of concentration of wealth, for understanding the collaborations between corporations that seek high profits with blockchain projects and for understanding what the relationship between transparency and anonymity is in relation to governments and surveillance. Another thing would be the creation of a more concrete library of what the different cryptographic tools do and what the different consensus protocols do in a very down to earth way, as a library – instead of just pitching projects – that is accessible to both technical minds as well as organisers', social scientists and policy minds. Then, of course, there is also the project of experimenting with alternatives and developing alternatives, but that can only be done on the basis of new concepts. If we keep running with the hype, if we keep talking about blockchain and cryptocurrencies in the same old way,

then we will fail to recognize the full potential of what they might actually be able to do.

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[1] See: Jaya Klara Brekke, "Proposing the Satoshi Oath for Developers," https://blog.b9lab.com/proposing-the-satoshi-oath-for-developers-69003cffb022.

[2] David Golumbia, *The Politics of Bitcoin: Software as Right-Wing Extremism*, Minneapolis: University of Minnesota Press, 2016.

[3] Jaya Klara Brekke, Elias Haase, “Breaking Chains and Busting Blocks: Commentary on the Satoshi (Hippocratic) Oath for Blockchain Developers,” in: Ruth Catlow, Marc Garrett, Nathan Jones, Sam Skinner (Eds.), *Artists Re:Thinking the Blockchain*, Liverpool: Torque Editions, Furtherfield 2017, pp. 91–98.

[4] For a report on cryptocurrencies in Greece, see: https://soundcloud.com/makingcontact/breaking-protocol-blockchain-and-capital-controls-in-greece

[5] See: https://fair-coin.org/, and: Stamatia Portanova, “Rhythm in Economic Space”, in: transversal 03/2018: *Technecologies*, http://transversal.at/transversal/0318/portanova/en.

[6] Jaya Klara Brekke, Elias Haase, “Breaking Chains and Busting Blocks,” op. cit.

[7] See: http://distributingchains.info/

[8] “The conflict was about an existing hard limit on the data-size of blocks on the Bitcoin blockchain, set to 1MB — whether and how it should be increased. [...] Other authors have written excellent informative pieces about the politicized nature of what, to some, might seem an obscure technical question and the ways in which it in fact reflects very different understandings of decentralization, power and governance. The story I want to address here is slightly more *meta*. Here is what I think is really at stake in the Bitcoin scaling conflict: The possible shaping of new types of subjectivity.” (Jaya Klara Brekke, “Postcards from the World of Decentralized Money: A Story in Three Parts”, in: Inte Gloerich, Geert Lovink, Patricia de Vries (Eds.), *MoneyLab Reader 2: Overcoming the Hype*, Amsterdam: Institute of Network Cultures 2018, http://networkcultures.org/blog/publication/moneylab-reader-2-overcoming-the-hype/, p 52-63, p. 58)

[9] In this hack “over $50 million was leaked from a DAO with over 10,000 members. The Ethereum foundation found themselves in a difficult position — to intervene and hard fork (rolling back all transactions to a point in time that preceded the alleged hack), or to continue and permit the transactions associated to the hack and lose a lot of investors and a lot of money. The majority of them voted to intervene, undermining the founding philosophy of blockchain as an un-regulated autonomous entity, consequently splitting the community based on differing blockchain ideas and philosophy.” (Max Dovey, "Love on the Block", in: *MoneyLab Reader 2*, op.cit., p 64-73, p. 71)

[10] See: Brekke, J. K., “Disassembling the Truth Machine”. In: de Vega, M. Mazon Gardoqui, V. & Silvestrin, D. */META. Tracing unknown kno//wns/*. ñ (Mexico City & Berlin)

[11] See: Denis Jaromil Roio, *Bitcoin, the End of the Taboo on Money*, 2013.