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How metaphors matter: an ethnography of blockchain-based re-descriptions of the world

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ABSTRACT

This paper explores the role of metaphors in the production of re-descriptions of the world within the framework of technological design processes. Drawing on a collaborative ethnography with the Economic Space Agency (ECSA), a start-up developing post-blockchain technology, this paper illustrates how metaphors mimic the toponymy of decentralized material infrastructures, while simultaneously pushing forward 'posthuman' values that are expected to become fixated through software. Through an analysis of a 'collection' of metaphors produced by ECSA, this paper sheds light on the work performed by specific vocabularies, within technological communities, in shaping a symbiotic relationship between futuristic politics and material culture.

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Introduction

This paper discusses language and particular linguistic tools, such as metaphors, as significant creative instances for the production of meaningful re-descriptions of the world through technological design, determinant not only to the materialization of the very projects that may come into existence but also to their respective worlds (Wittgenstein 1953, Davidson 1978, Lakoff and Johnson 1980, Rorty 1989). Metaphorical language, while re-describing worlds, expresses socio-technical assemblages of human and non-human components and weaves them together in order to bridge different worlds (Star 1990, MacKenzie and Wajcman 1999, Latour 2004, Callon 2005, 2009, Pinch and Swedberg 2008, Bijker *et al.* 2012). More importantly, metaphors affect the coding process by framing the values and politics inscribed in technological artifacts. This paper aims to contribute to the ethnographic understanding of preliminary processes of speculation and their importance in defining future financial/technological outcomes, thus ensuring a more sustained empirical basis to the suggestions that technological development mobilizes dreams, imagination, visions, narratives and, sometimes, some sort of counterpower (Swan 2015, DuPont 2017, Swartz 2017, Nelms *et al.* 2018, Reijers and Coeckelbergh 2018).

When considering metaphors as producers of meaning within larger socio-technical networks, one is able to trace connections between language and technological design, which oscillate between descriptive and instructive in nature. This problematizes the notion of socio-technical network and its attempt to grasp the location of agency. To consider the role of language and its speculative, constitutive, and reality-building agency (thus refusing an interpretation of language as 'representative' of reality), is also to diffuse agency across wider cultural phenomena, revealed through specific vocabularies (Austin 1975, Butler 1993, Licoppe 2010). In this case, the produced metaphors reveal the social and cultural embeddedness of financial technologies, and their aesthetics, in futuristic worldviews

(Pilsch 2017). Adding to the idea of distributed cognition among ontologically different elements (Hutchins 1995, Cetina and Bruegger 2002, Preda 2006, Zaloom 2006, MacKenzie 2009), one could also explore the idea of distributed imaginaries, aesthetics and politics that stem from the interaction between humans and the otherness of computer protocols and algorithms (see Bridle 2011).

Metaphors, by linguistic definition, articulate existing signs in unfamiliar ways thereby creating new vocabularies (Davidson 1978, p. 43, Rorty 1989, Grady *et al.* 1999, Hutchins 2005). Even though they maintain referentiality, they introduce improvisation into language, and improvisation requires imagination (Duranti and Black 2011). In bringing together a heterogeneous set of existing signs, they express a new feature of the whole (Deleuze and Guattari 1988, Latour 1999, Didier 2007). This *new* feature under production, the re-description of the world in itself that the metaphor carries through the utterance of one speaker, must then be mutually and socially oriented by its interlocutors for the purpose of achieving a collective intentionality and social order – metaphors thus work, through iteration, as a means of path-building, order-making, and ideology-building (Latour 1996, p. 371, Kroskrity 2004, Rawls 2008).

When approaching communities of technological design where preliminary and prefigurative processes of linguistic speculation support the development of emerging technologies, one can see how language *matters*. It plays a significant role in defining potential future directions, which are then made convincing by embedding them into the ‘hard’, ‘material’ substance of the machine (Leach *et al.* 2009, p. 65). On the one hand, the machine is a ‘technology of expression’ – the resource through which an ideology of language is both rendered explicit and embodied (Lépinay 2007). Simultaneously, the machine itself inspires and precipitates the creation of an ideology – it is a ‘technology of the imagination’ (Sneath *et al.* 2009). Through an analysis of metaphors as particular instances for re-descriptions of the world, produced by technological development communities, we may grasp the larger implications of emerging futuristic worldviews where politics and technical infrastructures are growingly interdependent.

This paper discusses the case of the Economic Space Agency (ECSA), a start-up dedicated to *re-engineering* economics and finance by developing post-blockchain technology. At the time of my fieldwork, there were roughly ten ECSA members based in Oakland, the United States. However, the ECSA team is spread out globally; in Canada, Finland, Brazil and Australia, and with new collaborators coming on-board regularly from any place with an Internet connection. A situated dynamic of conventional sociality among the Oakland-based members unfolded in parallel with a global dynamic of virtual sociality. All working documents and meetings, as well as a significant number of discussions, took place online, with the purpose of including all team members, irrespective of their location. As a community, ECSA could in itself be considered a socio-technical arrangement, mobilizing a series of digital environments for members to establish communications and to coordinate actions, bringing to life a new, non-pre-existing group (Callon 2004). As I demonstrate further on, ECSA mobilizes a series of metaphors both to collectively orient meaning and to establish connections between socio-economic practices and the material technologies under design.

This research was grounded on ethnographic methodologies, with an emphasis on virtual ethnography and semi-structured interviews, supplemented by *in situ* participant observation and document analysis. Virtual ethnography enables the observation of online communities, combining offline and online digital data collection with participant observation of computer-mediated relations that serve to enhance the exploration of digital network phenomena (Hine 2000, 2015, Kozinets 2010, 2015). Such methodologies have performed ethnography on numerous online worlds, from the activist group Anonymous, to the online games of World of Warcraft and Second Life (see Nardi 2010, Coleman 2014, Boellstorff 2015).

For approximately five months, I undertook virtual ethnography of the ECSA team’s online working sites: Slack (a conversational platform), Google Drive (a storage platform that synchronizes working documents across different users), Loomio (a voting platform), and Zoom (a video-conference software). I also carried out interviews on Skype with ECSA members and collaborators, followed their daily chatroom-based discussions, and ‘sat in on’ their weekly video-conference

meetings. Virtual ethnography was particularly important to initially informing my research, not only about what ECSA was doing, but also to better understand how the team members coordinated their actions, spatially and temporarily framed within digital platforms (Callon 2004).

In April 2017, I traveled to Oakland for one month of fieldwork research. At that time, the ECSA headquarters were in a garage, at the back of a house in a residential neighborhood. I was received and issued the immediate challenge to get involved: ‘what better way is there to understand what we’re doing?’ – I was told. I found a group of philosophers, anthropologists, video-game developers, computer scientists, activists, coders and finance theorists, with around half having academic career backgrounds, thus composing both an epistemic community and a community of practice (Callon 2004). I participated in the production of videos and was treated as a member in meetings. I interviewed nine members of the core-team, one friend, one advisor and one collaborator, and maintained a fieldwork diary. I was welcomed into both formal and informal encounters, met several curious visitors, collaborators, and other workers on the blockchain scene. As an academic among many academics, I hardly felt like an outsider and would occasionally have conversations with the team about my research, my methods, or my impressions. Likewise, their epistemological considerations about their own practice informed my conceptual framework, as described further ahead, deploying collaboration as a central tool for this ethnographic research (Holmes and Marcus 2008). For this reason, I do not use pseudonyms and present all members of the ECSA team according to their real names.

In the next section, I explore the main features and characteristics of blockchain technology. Then, in the empirical section, I present a ‘collection’ of ECSA’s metaphors before closing with my final considerations.

Blockchain technology

Blockchain, or Distributed Ledger Technology (DLT), is an open-source and encrypted protocol that generates a decentralized and distributed digital ledger. It enables the record of transactions, monitored and updated by the consensual system of its users, without the need for trusted, centralized, third parties. Blockchain was created by the anonymous Satoshi Nakamoto, along with its first application, a cryptocurrency called Bitcoin (Nakamoto 2008). The number of cryptocurrencies has since skyrocketed (there are currently over 2000 cryptocurrencies (<https://coinmarketcap.com/all/views/all/> [last accessed 22-03-2019])) as well as blossoming in terms of the variety of their purposes and architectures. While some are created to stand in as a blunt replacement of money, in other cases they do not behave at all like a currency – they may only express reputation (such as rating stars on Amazon) or access rights (such as a movie ticket), without possessing the characteristics of a medium of exchange, a unit of account, or a store of value. This led to a discursive shift from ‘cryptocurrencies’ to ‘tokens’, a much wider term that incorporates different expressions of value (DuPont and Maurer 2015).

In 2015, the Ethereum platform introduced the scope for programing smart-contracts on a blockchain. These are automated contracts where a sequence of instructions is embedded in the software through algorithms in order to automatically execute a contract, according to pre-established triggers, without the need for any validating third party (Szabo 1997, Swan 2015). One simple example of this mechanism is a system such as iTunes, where a movie you rent is automatically deactivated after 24 h (Sundararajan 2016, p. 93). Smart-contracts, combined with blockchain’s reliability for data storage, have turned the technology into an ideal structure for automation not just for devices but also at the organizational level. A group of people may interact with each other according to a protocol specified in code and enforced on the blockchain¹, rather than through the legal system, for various purposes such as making decisions, managing funds or processing payments (Buterin 2014, p. 2). From this point of view, blockchain technology is better understood as an infrastructure for organizational governance (see Davidson *et al.* 2016, Sundararajan 2016). Besides its potential as a currency enabler, it also represents ‘an institutional or social technology for coordinating people’

given the fact that it executes rule-based systems that enable socio-economic coordination (Davidson *et al.* 2016, p. 1).

The ethnographic data presented in this paper approaches the process of technological design of a techno-organizational infrastructure – a digital platform dedicated to the creation and management of organizations. In looking at the design process, it becomes evident that the software architecture also constitutes a governance architecture: by changing the software, its politics and policies are affected (De Filippi *et al.* 2013, Musiani 2013). Specific socio-economic values are mobilized to inform the software and the construction of a different future seems plausible because it is an extension of the very materiality of computer code (Leach *et al.* 2009).

Economic Space Agency

I first came across the team's work while mapping independent movements politicizing finance. I came across the Robin Hood Asset Management Cooperative (RHC), also dubbed as a 'counter-investment cooperative of the precariat', with the slogan 'hacking finance for the common good'. RHC was founded in 2012 by a group of artists and academics at the Aalto University, in Finland. It adopted a hedge fund-like structure, while maintaining a cooperative-like governance model: every member can enter a common pool with a minimum of €60, which is then invested in the New York Stock Exchange (NYSE) according to the recommendations of a competence-ranking algorithm. The profits are proportionally redistributed among the members as well as invested in the independent projects selected by the members. In 2013, the RHC team studied Bitcoin and blockchain technologies before concluding that working with this technology would be the next step in building decentralized forms of cooperation. They moved from Finland to Oakland, near Silicon Valley, expanding the team and recruiting new members from the Bay Area. Their legal form has been somewhat fluid: while RHC remains registered as cooperative, they registered the Economic Space Agency (ECSA) as a start-up in the U.S. and have more recently registered ECSA as a foundation in Switzerland.

ECSA's technology spans two layers, both in very initial phases of development at the time of my fieldwork. On the one hand, a protocol² low-level infrastructure using both blockchain and off-chain technology, which seeks to generate greater scalability for mass adoption. On the other hand, supported by that infrastructure, a user-friendly upper-level platform, i.e. the website through which users can access ECSA services. This platform is described by ECSA as a 'cybersocial infrastructural tool for the autonomous emergence of organizational dynamics'. In practice, and according to ECSA, this means that users can virtually organize with one or more people, establish their own interaction/governance rules, automate procedures, issue their own cryptocurrency, and so forth. The kind of digital organizations envisioned by ECSA seem to respond to the desire for bottom-up, spontaneous, and decentralized social interactions, enabled by digital connectivity. Even though there are strong critiques to capitalism and neo-liberalism being transported by ECSA's narrative, the ultimate goal is to install an infrastructure that may be at the service of an ideologically-plastic politics: when speaking of what this platform 'would make possible', the team mostly focused on the heterogeneity and multidimensionality of social interactions, highlighting how 'we cannot yet predict many of them'. Indeed, ECSA's collaborations in projecting these futuristic digital organizations ranged from libertarian, anarcho-capitalist views of blockchain as enabling a stateless and free market, to anarcho-communist and collectivist views of blockchain as enabling a stateless and horizontal community.

In our conversation about how ECSA came into existence, the founder Akseli Virtanen emphasized the years of research, intellectual investment and experimentation that he and a larger group of thinkers invested in studying and understanding the economy beyond mainstream economic and business theory.³ The concepts and discourses of economics, sociology, or political theory, he told me, were unable to help them understand what was going on; they had to establish their own concepts, 'new words'. In a more recent e-mail exchange, Aseli told me that 'ECSA is a new concept'.

Drawing on the works of Deleuze – a major influence on ECSA’s thinking –, he added that ‘the task of philosophy is to create new concepts, new little machines. But how do you recognize that you are encountering a new concept or a new little machine? According to Deleuze, it is simple. You recognize a new concept from that it is a little odd and that it is necessary’ (Akseli Virtanen, 6th February 2018).

A collection of ECSA’s metaphors

In this section, I not only present a series of the metaphors mobilized by ECSA in various contexts but also simultaneously and gradually introduce some of the team members. All of the selected metaphors exhibited some continuity during my fieldwork – reappearing in separate moments and evoked by different team members. These metaphors illustrate the articulation of heterogeneous elements necessary to generating a meaningful re-description of the world among a group of people that must orient objects, words, and *worlds* towards a common understanding. To convey the importance of mutually orienting *things*, I have included a passage depicting how such mutual orientation may fail. The last passage refers to the ‘posthuman’, an aesthetic and philosophic synthesis of the new world under re-description.

The Cambrian explosion

For (at least) one month, the expression ‘Cambrian explosion’ was written on ECSA’s garage white board, alluding to an event that took place 541 million years ago: at first, most organisms were simple, but with the Cambrian explosion the rate of diversification accelerated, and simple organisms evolved and began to complexify and to resemble the diversity of today’s life-forms. For ECSA, this historical event serves to allude to the ‘explosion in new organizational forms’ enabled by blockchain. Allegedly, these new organizations will bring about a wide array of malleable governance models in which the specific settings are fluid and ephemeral: public/private functional identities, assigned rights and roles, implementation of instruments or applications such as fund pools or contracts. What ECSA describes as ‘heterogeneous’ modes of organizing would, in a techno-mediated historical explosion, come to substitute the ‘one-dimensional’ structures of existing organizations – i.e. the existing legal templates, such as enterprises, foundations, cooperatives, or trade unions. These multi-dimensional organizations would then disrupt the current standard economic models and enable multiple points of individual agency in an economic system, an idea reflected, not by accident, in the name Economic Space Agency: ‘the next phase in technological and financial development must involve the possibility for everyone to gain concrete access to the design of their own economic agency’ (Bordeleau 2017). The Cambrian explosion is a metaphor for organizational *heterogeneity* and *multidimensionality*, two values that enter into dialog both with blockchain’s technical architecture and with Deleuzian politics (Deleuze and Guattari 1988, p. 7, Virtanen 2015). Jorge Lopez, the lead programmer of the low-level infrastructure protocol, told me that blockchains will trigger ‘an explosion in organizational forms’ and bring with them the opportunity to create a wider variety of highly specialized organizational structures, including monetary ones’ (Jorge Lopez, 18th April 2017). Pekko Koskinen, the lead designer of the ECSA upper-level platform, described this as a paradigmatic change – from the legal corpus of predetermined organizations to *yet unthinkable* programmable organizations:

Let’s say, 10 people or 10,000 people, being able to form a union together of any kind, deciding the rules, designing how to decide things, (...), being able to form any kind of organization between each other, which many of them we cannot yet imagine. (Pekko Koskinen, Oakland, 21st April 2017)

Lego, Tamagotchi

In my first day of fieldwork, the team was in the garage preparing for a public presentation that would take place the next day. Akseli was drawing a diagram on the white board that would

allow people to visualize ECSA's architecture. The low-level infrastructure protocol was represented by a 'network'; above it, there was a 'portal' and, immediately on top, standing for the upper-level interface of the ECSA Platform, a few floating 'Lego blocks'. The following day, during the public session, Lego blocks were on display on the garage's book shelf, assembled to spell the word 'ECSA'. During my fieldwork, the image of the Lego blocks returned on a few occasions. One such time occurred when an organization from New York visited to learn more about ECSA and Akseli described the ECSA upper-platform as enabling users to use 'Lego blocks' to build economic structures however they pleased; this was necessary, he continued, because the underlying low-level technology would be inaccessible to most people. On a different occasion, Akseli described who the Lego blocks were for: 'Our end-game is (...) a network of entrepreneurs, artists, creatives, political activists, culturally and socially oriented people who are afraid of tech and finance. They are the ones who will build the Lego'. With the aim of materializing the Lego metaphor on the technical level, the team decided that their platform would include 'template libraries' – similar to the templates you find in a Wordpress blog. These templates, just like Lego blocks, would offer granular characteristics – let us say, different functional identities, different models for decision making, differently designed tokens or algorithms – that the users may then assemble into an organization.

Gaming imagery seems to exert particular power in alluding to a user-centered environment. Vienna Looi came to the U.S. seeking political asylum from Malaysia after a period spent organizing civil movements for Malaysian electoral reform. After working for a Bitcoin company in Silicon Valley, she was happy to find a group of people – ECSA – applying blockchain to 'improve the human condition'. Vienna is passionate about the design of algorithms and their potential for deployment at the individual level – 'so everyone can do their own calculations'. She calls these algorithms 'economic pets', and compares them to Tamagotchi, the 1990s Japanese toy where you grew and cared for a virtual pet:

Facebook and Google's search rank, what they try to do for you is determining 'I think this is important'. But what if we don't necessarily agree with Google's value system? Could we say 'hey, I want to have my own algorithm with my own value system, that says [that] maybe what I want to look for in the market is fair trade, things that respect human rights and the environment', and then you would let the algorithm go out to the market that has a lot of noise and come back with certain results, be it products, information, articles ... (Vienna Looi, Oakland, 29th April 2017)

The octopus

Part of ECSA's work, at least during 2017, was to 'onboard' any groups bringing in proposals for digital organizations that could be launched through ECSA's platform. This process served both as a means of enrolling different collectives into ECSA's network and for informing the ongoing design process through use-cases. One of those proposals came from SenseLab, an art, philosophy and activist research group based in Montreal, Canada. Erik Bordeleau is a philosopher and anthropologist, part of both the ECSA and Senselab teams, working as 'a sort of intercessor'. The collaboration between these two groups began when SenseLab was seeking funding for a transdisciplinary university, a quest that proved unsuccessful.⁴ As Erik described, 'we met Akseli who just told us, what if you think of finance as an artistic medium?'

Distribution and anonymity are two of the main features of blockchain technology. They build a particular form of social organization into the 'hard' machine: peer-to-peer anonymous coordination, without any intermediators. For Erik, finance itself is 'a way of coordinating people, in a very decentralized way'. He referred to the Invisible Committee's writings about spontaneous organization as a pathway towards developing collective and self-organized *life-forms* (Invisible Committee 2009, p. 42), and added that financial tools, such as those enabled by blockchain technology, might operationalize a vision of what it means *to be a form of life, a certain way of being that coordinates itself*. In other words, blockchain and its technical architecture, granting distribution and

anonymity, is understood as the infrastructure that may foster spontaneous organization: a sort of self-organized life-form.

Curiously, the Invisible Committee is an anonymous group of authors engaged in authorial withdrawal. Following Foucault's insights about the policing role of authorship, their anonymity works, among other things, as a way to destitute the formation of power relations between author, work, and world (Bordeleau 2015). The creator of blockchain, under the pseudonym Satoshi Nakamoto, has also remained anonymous to this day, escaping the attention of the media, cryptocurrency community, and regulators, and consequently allowing Bitcoin to develop without leaders, according to the needs of its users.

Erik described SenseLab's organizational proposal to me, as one that explores the idea of 'spontaneous organization'. For that purpose, yet another concept is mobilized: the politics of the *dividual* (Deleuze 1992) as a Cancellation of the individual in favor of a collective and fragmented form of life.

And, now, the last iteration of our economic space is around the figure of the cephalopod, the octopuses and these families, and how ... it's a very decentralized, rhizomatic, mode of functioning. (...) And we're trying to think of ways so that we are not just in an economic exchange model, where you have clear contracts and transactions between parties, but how to mix, to make imperceptible, or to cancel the distinction between the emitter and the receiver, between the one that offers and the ones that receive, and to create this kind of magmatic pool that sometimes takes shape for an external offering, but that otherwise, within its own realm, remains as abstract and fluid as possible (Erik Bordeleau, Oakland, 2nd April 2017).

Mobilizing the metaphor of an octopus whose tentacles mimic blockchain's distributed nature, Erik signals further connections. Inspired by the ideas of 'spontaneous organization' and of the *dividual*, he draws the image of anonymous emitters and receivers in an abstract magmatic pool as a symbol for spontaneous organization. Precipitated by various technologies – from objects to texts – SenseLab envisions an 'economic space' where decentralization and anonymity forge a structureless market.

When metaphors don't bridge worlds

ECSA's reach out work proves efficient when their interlocutors understand their metaphors, 'dream' through the same style of imagination and get excited about the projected future. I witnessed both how hours of conversation with a visitor seemed to produce little vibrancy, while more ephemeral encounters would result in an immediate and aligned collaboration. In a conversation with a blockchain investor, ECSA's usage of the term 'social fabric' to describe their low-level technology induced some sort of confusion: 'what do you mean by fabric?', the investor inquired, adding that he was having a hard time 'wrapping his mind around' ECSA's work. ECSA seems fairly aware of this and takes this difficulty as an indicator of where to direct their efforts. On a different occasion, and referring to another investor, Akseli shared with the rest of the team:

I was talking with T., the biggest bitcoin investor, and he did not understand what we were doing. He's not our target audience. He did not understand the technological level we're at, and he's not interested in our end-game, more political and social ...

Further ahead in the conversation, Zachary Larson, a computer scientist, was wondering how to communicate ECSA's message implicitly through 'alternative signals' that spoke to people with similar mind frames: 'can we find a secret handshake that says, 'we are re-engineering finance' without having to say so?'

Metaphors may work as bridges over the intersections of different communities of practice but only because conflicting vocabularies are encountered in the first place – while some bridges hold up, others do not (Davidson 1978, Star 1990). In this case, metaphors seem to be in use as 'alternative signs', mapping those interlocutors that 'understand' – charting the robustness of the bridges built. I now turn to the mobilization of a more encompassing metaphor, the 'posthuman' – a philosophical, political and aesthetic approach to the relationship between people and technology.⁵ My

treatment of the ‘posthuman’ as a metaphor follows Rorty’s idea that metaphors bring with them *unfamiliar* uses of language through introducing new vocabulary that eventually dies through literalness. Today, the term ‘posthuman’ is in an in-between state, and the tensions between metaphorical and literal uses of the term reflect in the very process by which a world is re-described (Rorty 1989, p. 16). I therefore argue that ‘the posthuman’ is strategic for ECSA’s endeavor of commanding connections and bridging worlds – perhaps that which Zach would call a ‘secret handshake’.

The posthuman

During my fieldwork, ECSA received an external communication and design team to assist with the contents and design of their new website. For three days, intensive working sessions unfolded in the garage. These working sessions were animated by brainstorming processes around vital questions, including ‘who is our audience, what do we believe in’ and ‘what is our purpose’. Even while the aim was to achieve short sentences, the process was often long and somewhat difficult.

One afternoon, they explored other blockchain-based projects and analyzed their aesthetics and corresponding message. The team consensually considered most to be very ‘business oriented’ and ‘safe’. After a few comments about videogame aesthetics, someone suggested: ‘there’s a sci-fi gaming feature in what ECSA is doing’. Shortly after this, Zach walked into the garage with a paper in his hands and said he would like to read a poem: ‘All watched over by machines of loving grace’, by Richard Brautigan.

I like to think (and
the sooner the better!)
of a cybernetic meadow
where mammals and computers
live together in mutually
programming harmony
like pure water
touching clear sky.
I like to think
(right now, please!)
of a cybernetic forest
filled with pines and electronics
where deer stroll peacefully
past computers
as if they were flowers
with spinning blossoms.
I like to think
(it has to be!)
of a cybernetic ecology
where we are free of our labors
and joined back to nature,
returned to our mammal
brothers and sisters,
and all watched over
by machines of loving grace.

A few days later, on Slack – their conversational platform, Laura Lotti, a collaborator with a background in economics, philosophy and cybernetics, posted about that day’s conversation and how it had made her think about a book called *How we Became Posthuman: Virtual Bodies in Cybernetics, Literature and Informatics*, by Katherine Hayles (1999). She shared how the book argues that we have been posthuman since at least the 1950s due to cybernetics and that the team should leverage this dimension for their positioning as it provides a sound philosophical and conceptual basis to define their beliefs and purposes. She quoted the author,

(...) my dream is a version of the posthuman that embraces the possibilities of information technologies without being seduced by fantasies of unlimited power and disembodied immortality, (...) that understands human life is embedded in a material world of great complexity, one on which we depend for our continued survival (Hayles 1999, p. 5).

Laura continued by stating that she rejected the binary of the ‘authentic’ human versus the cold machine, and appealed that their work should support ‘this version’ of the posthuman; ‘after all’, she continued, ‘what is autonomy through automation but a posthuman project?’ After this, it became common for team members to deploy the posthuman vision as a workplace philosophy and aesthetic reference in support of internal debates about their organizational identity. Soon after, for example, in a Skype meeting dedicated to discussing their proposed new website, ECSA highlighted how it should appeal to a ‘posthuman community’. Applying the term to synthesize a set of values capable of being expressed both at the content and the aesthetic level, the team made further references to a ‘futuristic economy’ and to transhumanism – [that is] ‘what we mean when we say relations or communities: seeing how technology and humans can play together in a symbiotic way, in the future’. Through a sequence of interactions, both in person and computer-mediated, the team uncovered a shared object, seen suddenly in common – a ‘specific version’ of the posthuman that was evoked to allow for collective sense making. As digital technologies become ubiquitous in all dimensions of human life, concepts such as ‘the posthuman’ conquer absolute literalness and seem to be (re)captivating the collective imagination (Cetina 2006, p. 240). As a consequence, posthuman visions of the future, embedded in communities of technological practice, seem to leave their mark on the social shaping of technology, even when those marks are classified as the passing fantasies of techno-enthusiasts and futuristic eccentrics (MacKenzie and Wajcman 1999, Bijker 2012). They are significant in the sense that they constitute an ‘inventory of desire’ projected onto these technologies, informing the design process and thus exhibiting their own materiality (Swartz 2017, p. 83). Such desires and values, mobilized to ‘manufacture an evolutionary future’, are pushed forward through what Nick Land calls ‘hyperstition’ – a term that refers to the insertion of certain ideas in the cultural, political, and aesthetic circuitry (Pilsch 2017, p. 201), ensuring future positive feedback loops.

Final considerations

The ECSA metaphors propose a particular scenario: blockchain triggering a post-Cambrian world in which people organize and participate through complex digital organizations that flourish and thrive; in which financial, economic, and organizational structures become plastic and composable, as if made of ‘Lego’; where everyone domesticates their own personalized ‘Tamagotchi’ algorithms, and in which markets become an ‘octopus’ of fluid and anonymous digital movements. Finally, human autonomy is achieved through technological automation in a stage we may term posthuman. Some of these metaphors, like the Cambrian explosion or the octopus, are biomimetic -, that is, they mobilize elements of nature to explain, describe or instruct solutions to complex human phenomena. This has been a common approach to recent technological developments (like robotics) and it is also, from what I learned during my stay with ECSA, something very present in Silicon Valley culture. At the same time, the mobilization of things, like Lego or the Tamagotchi, points to an object-oriented referentiality, which links with a growing field within empirical philosophy that foregrounds objects: everything exists equally – bacteria, humans, rocks or computers – and no entity has a special status. This might be relevant here since object-oriented ontology is very much at the basis of a new aesthetic movement obsessed with technological objects and digital imagery (Bogost 2012; Pilsch 2017, Bridle 2011).

The necessity of mutually orienting discourses is not exclusive to the workplace but takes place as well among a wider community – in particular, the community of users, investors, or coders, but also among a global audience. When the metaphors *work*, that means its interlocutors agree on a ‘passing theory’ (Davidson 1986). When they do not, that means those words are inappropriate for dealing

with one's world. This is one way in which metaphors matter: through processes of speculation, they propose a re-description of the world that claims to be more useful for the purpose of dealing with the new socio-economic paradigm accelerated by blockchain technologies. In doing so, they *work as* a membrane – a 'secret handshake' – creating an invisible and malleable divide between co-existing understandings of the world, and, consequently, different ethos of practice around technological developments (Rorty 1989, p. 4). Another way in which metaphors matter is in how they instruct the design of the governance architecture of a given digital platform, that must be materialized through code – the software architecture. The politics of specific socio-economic values seem more plausible because they can be made to be an extension of the very materiality of computer code (Leach *et al.* 2009). The conditions of felicity of these proposals thus arise both from the successful resonance among a large-enough community of a new world and its respective vocabulary, and from its technological materialization.

Through an analysis of metaphors I have sought to demonstrate how they establish the values that must be coded into the 'hard machine', while being, simultaneously, precipitated by material practices (Lépinay 2007, Sneath *et al.* 2009). This loop may presuppose larger implications when analyzed at large, even if just speculatively, given that such particular vocabularies are embedded in a wider and relatively emergent discourse about the symbiotic future of humans and digital technologies. Such discourses carry an ideology of language that must be understood as a culturally contexted speech and as a locus of economic and political interest of a specific group of speakers, rather than as a structural category (Kroskrity 2004). In that sense, the discourses portrayed in this paper point to a significant technological imprint in the design the organizational landscapes of the future. The politics that stem from the blockchain community are impregnated with the toponymics of decentralization, distribution, anonymity, modularity, etc. These are general characteristics found in many digital environments but, in particular, found all together in blockchain technologies. Blockchain itself then becomes a metaphor for a particular kind of socio-political organization, one that seems to prefigure a new world where human communities and digital platforms display similar architectures for governing interaction. On the other hand, and inverting the loop, these new forms of human organization, and their respective politics, depend in absolute on their material counterparts. The futuristic worldview according to which a user can shape her organization's governance architecture in a modular way, launch her own currency, and exert full control over her own personalized algorithms cannot be attained without the technical infrastructures that support it. Blockchain technologies, but not exclusively, constitute a prefigurative technology, in the sense that they inspire and configure modes of social interaction that cannot exist without their own technical means. A posthuman worldview then refers as much to a symbiotic relationship between humans and technology, as it refers to a symbiotic relationship between human politics and material culture.

Notes

1. These have been called Decentralized Autonomous Organizations (DAO) (Buterin 2014).
2. A protocol defines the rules according to which computers communicate with each other and is effectively neither software nor hardware.
3. In an interview with Pekka Piironen, Akseli Virtanen highlights the importance of theorization for the emergence of RHC: *For example, the whole Polemos book series we did in early 2000 in Finland was created for building this understanding and organization. These are wonderful books, 14 altogether, published in this series, from the best economic and political thinkers at the moment. For example, 'Christian Marazzi's' Language and Capital, 'Maurizio Lazzarato's' Revolutions of Capitalism, 'Paolo Virno's' Grammar of Multitude, 'Franco Berardi's' Info-Labour and Precarious States of Mind, 'Bracha Ettinger's' Co-Poiesis, 'Félix Guattari's' Three Ecologies, also your [Pekka Piironen] 'book' Economy of Insecurity, 'my book' Critique of Biopolitical Economy (...). This is why we are now capable of coming up with new products too. I don't know how I could emphasize this more* (Piironen 2015, p. 97).
4. Senselab has recently launched a membership-based crowdfunding to support this project, that will kick-off as a nonprofit.

5. It is important to highlight that the ECSA usage of the term ‘posthuman’ is in the transhumanist sense: as the stage in which humans might find themselves after they transform so radically so as to overcome their human condition. A different approach to ‘the posthuman’ as a philosophical reconfiguration of humanism can be found in a growing body of literature (see Haraway 1990, Braidotti 2006).

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