On the Limits of the Imaginary: A Reply to Jacobetty and Orton-Johnson's "Blockchain Imaginaries and Their Metaphors"

Quinn DuPont, York University, qdupont@yorku.ca

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In their article on blockchain imaginaries Pedro Jacobetty, and Kate Orton-Johnson (2023) propose a tripartite analysis of metaphors associated with "blockchain." They offer the "substantial" metaphor of gold and its materiality, the "morphological" principle of (proof of) work, and the "structural" principle of cryptographic data traces. These narratives tell us broadly about the people associated with crypto (even if actual people are notably absent from Jacobetty and Orton-Johnson's analysis). They conclude by suggesting that imaginaries are descriptive *and* performative; that is, imaginaries are involved in the production of facts.

Conceptual Analyses of Blockchain

Jacobetty and Orton-Johnson are far from the first to propose a conceptual analysis of blockchain technologies and crypto communities in terms of imaginaries and metaphors. Like others, they draw on well-developed literatures, including Anderson (1983) and Jasanoff and Kim (2009). However, here as elsewhere, rarely do works on blockchain seriously consider these source materials.

For instance, Anderson's popular work introduces the idea of an "imagined community" to cut the Gordian knot of political science: an intellectual path past the positivistic presumption of nation states while retaining the reality—and materiality—of the nation state, which is *not* a fiction (in the critical Marxist terms of Anderson, everyone in the modern world "should" have a nationality). Rather, Anderson argued that transformations in media ("print as commodity") and new technologies for the circulation of information, meant that members of nations will not know most of their fellow members, meet them, or ever hear of them (Anderson, 15). As such, a nation is an "imagined community" not because it is false or fabricated, but because it was imagined and created (a uniquely modern effect, distinct from older communities tied together by religion and dynasties). However, in their conclusion, Jacobetty and Orton-Johnson draw on Luhmann—not Anderson—in search of an explanation. By missing these salient connections to Anderson's work they are instead led astray by Luhmann's insistence on autopoetic, decomposable sub-systems and, I argue, fail to see the centrality of the nation state and the importance of circularity in media.

On the other hand, Jasanoff and Kim (2009) focus on the role of national science and innovation policies to introduce the concept of "sociotechnical imaginaries." They describe the complex arrangements of scientific tools, news media and public belief, laws and policies, and individual and collective practices to show how nations "reimagined, or re-performed" the "projection, production, implementation, and uptake of sociotechnical imaginaries" (Jasanoff and Kim 2009). Like Anderson, the nation state is not taken for granted, but rather is given a key role in developing and embedding the "national political culture" in science and technology. Here again, by missing—or simply avoiding—the core role of the nation and its interests in their analysis of blockchain, Jacobetty and Orton-Johnson fail to see deeper political connections. Moreover, absent the nation state, the motivation for considering imaginaries in the first place remains undeclared.

The Limits of Imaginaries

More fundamentally, there are limitations to sociological models that rely on metaphors and imaginaries. While it depends on the acuity of the author, metaphors and imaginaries tend to be too coarse-grained and abstract to make precise distinctions. For instance, what further distinctions could be drawn beyond the tripartite approach of Jacobetty and Orton-Johnson? If our sociological model is built out of pure thoughtstuff—the imaginary—how do we explain interaction and change? Speaking of change, how does the "morphological" principle explain or even identify the Ethereum Merge (2023), which was a significant governance and change management success story (by swapping the Proof of Work consensus protocol for the Proof of Stake consensus protocol, the system reduced its energy use by 99.95%, a feat of engineering and social coordination akin to changing the engine of the car while driving). Instead, we face black box imaginaries, left to conclude that every social influence is either exogenous or delusional. As an explanatory tool, narratives must rely on the black box of technological infrastructure to make sense of the emergence of social structure.

Another limitation to this approach is the lack of substantial connections to behavioural and sociological research on online communities. For decades, online communities scholars (especially in the information sciences) have developed sophisticated methodologies and conceptual models to address interactions across scale (responding to the absence of natural hierarchy online), endogenous and exogenous motivations for participation, challenges of commitment, formation of collective identities, social innovation, trust mitigation, and a broad sweep of practices associated with labour, knowledge co-production, and leisure (see, for example, Faraj et al. 2016). Given these findings, we are left wondering how to make sense of two distinct scholarly literatures.

With such a large gulf between imaginaries and materialities, it is hard to make sense of social and technological progress. The blockchain "imaginary" has transformed in almost unrecognizable ways over its first decade, exhibiting a dynamism that appears idiosyncratic and un-generalizable. What is it about the imaginary that changed so dramatically from early libertarian views to its antithesis in, say, Web3? Recent studies of users (Perrin 2021) portray a community both too broad to be meaningfully described by these imaginaries and at the same time distinctly concerned with other issues not part of this analysis. Indeed, in 2023 a Bitcoin maximalist has a radically different imaginary than an Ethereum Web3 "fren," but we are left wondering how and why they diverge.

By turning away from the nation state and its central role in scholarship on the imaginary, Jacobetty and Orton-Johnson offer a different conceptual distinction, intended to draw attention to the limits of epistemology and offer a glimpse at boundary objects, core-periphery relations, and the production of facts. Jacobetty and Orton-Johnson helpfully focus on Power's (2019) work on digital traces and their performativity. In terms of blockchains, this approach shines a light on socio-technical mechanisms and their use where power and influence emerge from the establishment and circulation of digital traces.

Regarding Active Performance

Another approach to performativity might have adopted Mackenzie's 2006 analysis of fintech, which moves away from Austin-esque analyses of language and instead addresses the ways that mathematical modelling does not just "analyse" markets but rather is an "active force transforming its environment, not a camera passively recording it" (12). Importantly, Mackenzie focuses on *economic* performativity, which he calls "Barnesian," to draw attention to the self-validating feedback loops implicit in economic modelling. Mackenzie admits that self-validating feedback loops are a kind of "self-fulfilling prophecy," which is *not* to claim that any sufficiently well adopted model could have "made itself true" by simply being adopted (20). Instead, Mackenzie conducts a careful analysis of the Capital Asset Pricing Model and other economic theories (such as options pricing) to provide evidence of an economic theory's performativity—how it makes itself true. Ultimately, Mackenzie argues that many complex interactions of analytical models, markets, and social actors produce "truth"—even if such "truth" is sometimes ambivalent to the "empirical adequacy" of economic and sociological models.

Looking forward, future explorations might say more about how facts are created by blockchains. This question of "applied metaphysics" gets to the root of a long debate around realism and constructivism (Daston, 2000). And indeed, sociologically rich analyses of how blockchains serve to create facts might shine a light on the darker areas of the imaginary. But in their absence, when looking for theories that describe the interaction of human minds and the tools they build, we might consider more dynamic models, such as Bruno Latour's theory of immutable mobiles (see DuPont and Maurer, 2015). According to this influential idea, circulation and unchangeability interact to produce durable social facts (recall also how circularity of information was essential to Anderson's understanding of an "imagined community"). In the case of blockchains, facts are produced by the circularity of transactions (the "economy") which are rendered literally immutable by the cryptographic algorithms associated with blockchain mining (their perceived "authority"). The resulting "consensus" does not just stand in for facts, it is the very process by which facts are created.

References

Anderson, Benedict. 2016. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. Verso Books, 2016.

Daston, Lorraine, ed. 2000. *Biographies of Scientific Objects*. Chicago: University of Chicago Press.

DuPont, Quinn and Bill Maurer. 2015. "Ledgers and Law in the Blockchain." *King's Review* June 23. http://kingsreview.co.uk/articles/ledgers-and-law-in-the-blockchain/.

Faraj, Samer, Georg von Krogh, Eric Monteiro and Karim R. Lakhani. 2016. "Online Community as Space for Knowledge Flows." *Information Systems Research* 27 (4): 668–84.

Jacobetty, Pedro and Kate Orton-Johnson. 2023. "Blockchain Imaginaries and Their Metaphors: Organising Principles in Decentralised Digital Technologies." *Social Epistemology* 37 (1): 1-14.

Jasanoff, Sheila, and Sang-Hyun Kim. 2009. "Containing the Atom: Sociotechnical Imaginaries and Nuclear Power in the United States and South Korea." *Minerva* 47 (2): 119–46.

MacKenzie, Donald A. 2006. *An Engine, Not a Camera: How Financial Models Shape Markets.* Inside Technology. Cambridge, MA: MIT Press.

Perrin, Andrew. 2021. "16% of Americans Say They Have Ever Invested in, Traded or Used Cryptocurrency." *Pew Research Center* November 11. https://www.pewresearch.org/fact-tank/2021/11/11/16-of-americans-say-they-have-ever-invested-in-traded-or-used-cryptocurrency/.