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IMAGINARY PARLIAMENTS: EXCAVATING THE METAPHOR OF CONSENSUS WITHIN BLOCKCHAIN TECHNOLOGIES

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Consensus as a sociotechnical affordance

Blockchain technologies function partly according to the technical mechanisms of "Proof-of-work." These mechanisms assess the similarities between different information sources to validate the content of a block. What is interesting about these mechanisms is that their capabilities go beyond their technical operations. In many ways, they can be considered to be a radical technology that have *imagined affordances*, affordances that "emerge between users' perceptions, attitudes, and expectations; between the materiality and functionality of technologies; and between the intentions and perceptions of designers" (Nagy and Neff, 2015, p. 5). In the case of blockchains, these affordances are attached to the fact that it uses "consensus algorithms" for the proof-of-work. Beyond the validation of information, these algorithms are imagined as representing "social trust" (De Filippi and Loveluck, 2016) and decentralizing electoral processes (Hermstruwer, 2020, p. 405). As such, blockchain technologies have been intimately woven into discourses that imagine the future of governance, transparency, and democratic decision-making.

But how has this happened? In this paper I identify that at the root of these discourses is the ambiguous concept of "consensus" and that socio-political meanings of consensus have been re-written as a set of technical operations. Through a combination of metaphor analysis and content analysis I demonstrate how the oscillation between technical and political meanings became the basis of the celebratory discourses around blockchain technologies. Within science and technology studies and media studies, these narratives are built upon imaginaries that are composed of a vision which "is common to an entire profession or sector" and are connected together by "intentions and projects, as well as utopias and ideologies" (Flichy, 2007, p. 4). Additionally, these imaginaries exist at the threshold of the real and the unreal as they "weave in and out of

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the purely imagined and the actually realized media machineries” (Kluitenberg, 2011, p. 48).

Internet imaginaries and metaphors

In many ways, the socio-technical imaginaries of blockchains have already been well-covered. For instance, Lana Swartz identified differences in how bitcoin was imagined through digital metallism and mutual infrastructuralism (2017) as well as radical and incorporative dreams (2018). More recently, Brody and Couture (2021) examined the discursive transition between viewing blockchains as money and as decentralizing media. While these studies are significant in identifying the different ideological boundaries that are shaping the meaning of blockchain technologies, there is a parallel necessity to identify the common ideas that carry political meanings. For example, recent research on Wikipedia identified how Wikipedians drew from democratic meanings of consensus and then transformed it to suit both their policy and interface (Jankowski, 2022). However, in the case of blockchain technologies, I argue that it is apt to consider consensus as a concept that exists at the edge of metaphor and affordance.

As Sally Wyatt explained, “[m]etaphors are available to all, are much more flexible and dynamic than sociotechnical imaginaries[...] and can capture fears as well as hopes and promises” (2021, p. 410). Indeed, the excavation of the layers of meaning embedded within metaphors is an established method of media analysis. For example, Partice Flichy's work on *The Internet Imaginare* (2007) highlighted the proliferation of metaphors attached to the internet. More broadly, John Durham Peters took on analyzing the “key metaphors for digital media” as a whole (2015, p. 8). Others like Vincent Mosco (2014) excavated the historical materialities that were hidden by the metaphor of “the cloud,” or Cornelius Puschmann and Jean Burgess's analysis (2014) of the etymological lineages of “big data” as a metaphor.

Metaphor analysis

In a similar fashion, I follow the method that Puschmann and Burgess established. They use a combination of metaphor analysis and content analysis by providing a general etymology of “data” and “big data” which is connected to an analysis of how the metaphor was circulated within news media. In my case, I provide a more restricted etymology by looking specifically at how the meaning of consensus was articulated by computer scientists. I start with Leslie Lamport's Paxos protocols and consensus algorithms. Of particular interest is the fact that to explain how his algorithm functioned, Lamport fabricated an imaginary Greek parliament that had been recently excavated and found a whole new system of governance. After reviewing the associated meanings that emerge from Lamport's explanation, I trace how his technical and political ideas were revised to include the notions of “distributed consensus,” during the 2000s and 2010s. After outlining a map of associated concepts, I identify how these articulations were taken up and transformed by news circulation. Again, similar to Puschmann and Burgess, I use a corpus including business and technology news spanning a five-year period of 2016–2021 to observe how consensus shifted from a technical metaphor to a circulation of political discourse.

After this analysis, I conclude the paper by summarizing how the meaning of consensus shifted from being metaphor, to a set of techniques, and then into an assortment of political visions for decentralization, autonomy, and democracy. This research therefore makes valuable contributions to understanding the actual process by which ideas, visions, and socio-technical imaginaries become entangled within the development and understanding of new media.

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