Radical Technologies and Cultures of Knowledge:

The Case of Bitcoin

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The emergence of Bitcoin as a means to make electronic transactions directly across a peer-to-peer network has sparked interest from many fields, mostly due to its capability to handle such transactions on a large scale, with no recourse to centralised structures of management. This is achieved through its underlying technical architecture, the 'block chain': an impressively robust system of recording transactions on a network that's security is guaranteed via the distribution of all transaction data (in *blocks*) to every node in the system on an ever-increasing chain. Last year saw the emergence of 'Bitcoin 2.0' applications, where vast amounts of investment capital flowed into projects that proposed to develop systems that offer a diverse range of applications beyond crypto-currencies, such as voting systems, electronic contracts, financial services, and identification recognition. What unifies these projects is the desire to replace centralised, human-run organisations, with cryptographically secure, automated peer-to-peer systems. Within this desire is a political vision, a vision that is not at all homogenous, nor harmonious, but nonetheless contains central elements that can be traced in the formation of Bitcoin. This paper seeks to explore this vision, drawing on primary research data to examine the technical politics of crypto-currencies.

Bitcoin first appeared as a white paper published on The Cryptography Mailing List at metzdowd.com, an open mailing list associated with the internet subculture of *cypherpunks* – a subculture that fused concerns over increasing state intrusion into everyday life through rapidly growing electronic surveillance, with the open source principles that challenge proprietary software, declare digital technology to be a public good, and thus endeavour to provide alternatives. These values are indeed reflected in Bitcoin's white paper, and through its public release as an open source project. In the wake of the 2008 financial crisis, and ongoing revelations about coordinated programs of mass state surveillance, many have begun to see Bitcoin as a potentially important public tool. But how exactly, can radical

values be embedded in technology? And how does its diffusion among different contexts, and development for different purposes, affect this radical potential? In these respects, I believe it is important to consider the work of Andrew Feenberg.

At the crux of Feenberg's critical theory is the concept of *hegemonic technological rationality* which, through a dominant form of reasoning, enframes how we understand technology; and through dominant systems of production, entails the exclusion of the interests of marginal social groups. This has the effect of reproducing dominant hegemonic social values through the practices that consequently prosper in this system, practices that structure much of social life and impinge on environments. Feenberg does however, identify two means for subverting this process: *democratic intervention* on the part of social groups campaigning for alternative technologies; and *tactical practices* in which marginal groups can reveal alternative potentialities for technology by finding new ways of appropriating the technologies around them. In the collective and voluntary efforts of disparate developers unified by the conviction that digital technologies are and should be a public good – and not proprietary tools of corporate profiteering and state surveillance – we see this latter form of *tactical* resistance embodied in the origins of Bitcoin. Bitcoin thus opens up alternative possibilities for technological progress, both in ideological and material ways. Materially, Bitcoin opens up further potentialities for *tactical practices,* as we are seeing with the various ways in which block chain technology is being adapted. Ideologically, Bitcoin introduces its users to systems of thought that challenge dominant understandings of financial technologies and the social structures they support. In this latter sense, Bitcoin has the potential to be a counter-hegemonic force. In this paper however, I will present data that suggests this is not the case, and that in fact Bitcoin is *reinforcing* the dominant ideals of neoliberalism. In presenting the details of this process, I aim to demonstrate the importance of understanding the development of 'cultures of knowledge' that emerge around contemporary technological practices.

References and Notes

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