The Social Construction of Libra

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Abstract

In 2019 Facebook announced its developmental global cryptocurrency: Libra. In this paper, I explore the social construction of this cryptocurrency, drawing from the Social Construction of Technology (SCOT) and Emperical Programme of Relativism (EPOR). The story of variation and selection from the traditional banking sector, to Bitcoin, to Libra is told through the lens of relevant social groups, namely the billions of unbanked and underbanked. Throughout this analysis, several tactics used by companies and policy makers are made visible when interpreted as an exploit in the SCOT framework. As a result of these exploits, I observe the importance of the SCOT framework despite its age as well as the need for the framework to develop further in the context of the digital age via a concept I call 'Core-Groups'.

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1 Introduction

The primary purpose of this thesis is to use the Libra cryptocurrency and its generated controversy to better understand how technological artifacts are socially constructed and adopted. To this end, I draw from the theory of Social Construction of Technology (SCOT) as well as its predecessor Emperical Programme of Relativism (EPOR) and aim to develop the theory further. The technology of focus, Libra, is a cryptocurrency developed by Facebook with huge implications for the unbanked, the developed world, the remittance industry, and other relevant groups. With Facebook's daily user count of 2.1 billion people (Facebook, 2019), Libra could stand to threaten sovereign currency, existing banking systems, and government control over fiscal policy. As a result, understanding how Libra was socially constructed is an issue of importance. In order to reach this understanding, I first introduce the key ideas of SCOT. I then cover background on Libra as a technology and existing goals for the project. Finally, I use the tools provided by SCOT to understand how Libra and similar technologies are constructed, and how this process conforms and deviates from the SCOT's expectations.

2 Framework Background

In analyzing the factors contributing towards the success or failure of Libra's adoption, I elect to use the Social Construction of Technology (SCOT) as a guiding theory for my analysis. There are several key concepts provided by SCOT that will be useful in examining Libra's developments. These include the principle of symmetry, the idea of a relevant social group, the concept of interpretive flexibility, and the concept of closure mechanics as noted by Pinch and Bijker's seminal paper: The Social Construction of Facts and Artefacts (1984). Pinch and Bijker suggest that in order to avoid an overly simplistic and linear analysis of technological development, successes and failures should be treated symmetrically in analysis. With this in mind, it seems appropriate to use SCOT to analyze Libra that is 'in construction', since I am unaware of the technology's success or failure at the time of committing to this topic.

The SCOT framework begins with relevant social groups. In the development of technologies, there are differently affected social groups, and in order to analyze these different effects, we first must identify the groups. These groups have different interpretations of the technology, a phenomenon called interpretive flexibility. For example, immigrant workers may interpret Libra as a way to avoid the 7% average cost of sending money internationally (Constine, 2019), while US lawmakers may view the technology as a threat to the US Dollar (Torpey, 2019). These different interpretations lead to different wants and variations on the core technology. Noticing this effect was the motivation for Pinch and Bijker's description of technological development as "an alternation of variation and selection" (Pinch and Bijker, 1984). Within the topic of cryptocurrency, variation can be observed both before Libra's announcement through other 'stablecoins' and after Libra's announcement with competitors like Celo.

Lastly comes the concept of closure mechanics. Here SCOT draws from EPOR, noting the success of analyzing controversial scientific claims via the concept of a 'Core-Set' or 'controversy group'. The idea of a Core-Set is that in scientific controversy, a set of experts arise whose opinions can be monitored to determine when consensus is reached. At the outset of this paper, I was hopeful that a Core-Set would arise in the case of Libra due it its exceptional publicity; however, it seems that due to the lack of authority any individual has on a piece of technology, a different kind of analysis is required.

3 Libra Background

Libra's goal is best described by its white paper, stating: "This is the goal for Libra: A stable currency built on a secure and stable open-source blockchain, backed by a reserve of real assets, and governed by an independent association." (Libra Association et al., 2019). In the white paper, Libra claims that those with less money pay more for financial services in the form of high loan rates, overdraft fees, wire costs, and other costs. By offering a more efficient system that removes the current requirement of trust in centralized authority, Libra could significantly

reduce these inequalities. Without the overhead of maintaining trust in the financial system, Libra could significantly reduce transaction costs. As a result, this technology has the opportunity to make an already global economy more global and more inclusive. The white paper summarizes, stating: "The association defines success as enabling any person or business globally to have fair, affordable, and instant access to their money."

In studying the development of Libra, it is important to distinguish Libra from Facebook. Facebook aims to be just one of many companies forming the non-profit called the Libra Association where Facebook will only have one vote. However, Facebook will oversee the development of Libra as an open-source technology to help make the system viable. As for why Facebook would make such a thing, Facebook CEO Mark Zuckerberg explains to the US Congress that "when we eliminate friction for customer buying something from a business they and the value of advertising goes up" (Zuckerberg, 2019). However, this indirect motive for Facebook's construction of Libra has been the cause of some public distrust.

4 Analysis

4.1 Relevant Social Groups and Interpretive Flexibility

To begin this analysis, recognize the relevant social groups in technology for monetary transfer. Most prominently stand the first-world citizens who are included in the global economy. Their money and credit scores allow them the benefits of low transaction fees, access to brokerage and bank accounts, alongside other rewards. Then there are those who are in some part excluded from the global economy. Careful not to subdivide too far, I believe it is worth breaking down this latter category a degree further. Firstly, are the unbanked, about 1.7 billion people (Libra Association et al., 2019), who lack a reliable way to interact meaningfully with any large economy. It is hard to understate how disabling being unbanked is for this near-third of the global population. The unbanked have no consistent way to send or receive money. That means paying bills, receiving pay, receiving credit, tracking expenses, saving money, and many

other common financial actions are suddenly difficult and potentially dangerous. Secondly, there are the underbanked, who are banked, but are under-served by the existing banking system, resorting to alternative financial services like payday loans or subprime mortgage loans. The underbanked may be immigrants who inefficiently send money home, Americans who do not meet credit requirements, or even people who simply do not trust a bank. In 2017, these two categories made up over twenty-five percent of households in America, an exceptionally developed country (Apaam et al., 2017).

Examining the interpretive flexibility of banking as whole, note the FDIC found over half of the unbanked surveyed felt they did not have enough money to open an account. Thirty percent did cited not trusting banks as a reason to not have an account, and twenty-eight expressed privacy concerns (Apaam et al., 2017). From this, it is easy to see that the unbanked and underbanked may interpret the banking system as a financial hazard. Unsurprisingly, customers of banks report that their bank is reputable 77% percent of the time (Garver, 2018).

4.2 Early Variation

As outlined by SCOT, this interpretive flexibility results in variation into new technologies that can in turn be interpreted flexibly. The earliest and most impactful example is Bitcoin. Before Bitcoin was a massively traded financial asset, it was an idea from 2009 to remove the need for trust in financial institutions while providing privacy through anonymous transactions (Nakamoto, 2019). To understand how impactful this technology was, note in 2017 the total active user count for any cryptocurrency was estimated at 5.8 million (Hileman and Rauchs, 2017). However in 2018, a Bitcoin-based financial services platform hit a user count of 5 million by serving the Philippines. This huge user base is in part due the Philippines' remittance flow of 30 billion dollars, ranking in the top five in the world at the time (Lichtfous et al., 2018). This number of 5 million additional non-traditionally banked is especially impressive, considering the central bank of the Philippines only estimated 15.8 million Filipinos were banked in any traditional bank in 2017 (de Guzman, 2018).

Despite this particular success, the total user count of 5.8 million is simply not comparable to the 1.7 billion unbanked. The core problem that Bitcoin fails to overcome is its volatility. Simply put, Bitcoin is not a reliable store of value. In fact, it was so volatile that NYU Economics Professor Nouriel Roubini called Bitcoin "the mother of all bubbles" (Monaghan, 2018).

From Bitcoin and its volatility, a chase develops for the mythic 'stablecoin', a digital token that maintains a stable value. These coins can be fiat-backed, crypto-backed, or resource-backed, or they can even attempt to be non-collateralized. As found by a survey of these attempts (Mita et al., 2019), crypto-backed stablecoins fluctuate wildly in accordance with the cryptocurrencies they are backed by and non-collateralized attempts "cannot sufficiently ensure the constant purchasing power". The fiat-backed and resource-backed share the same problem in that they return to requiring trust in a central authority to 'cash out'.

Overall, it is interesting to note that as financial technology moves closer to software engineering, variation seems to have increased drastically as we see the number of cryptocurrencies grow from less than seven hundred to over two thousand from 2017 to 2019, many of them chasing the idea of a stablecoin (Chan, 2018). This rapid variation is praised in software engineering as 'iteration' in 'agile' development, and maybe it is no coincidence that software engineering produces an enormous amount of innovation as a sector. The strength of such a link should be further explored to better understand the components of innovation, but is outside the scope of this paper.

4.3 Enter Libra

In June 2019, Facebook's Libra cryptocurrency is announced. It attempts to protect the value of its users as a fiat-backed stable-coin, while establishing the most trustworthy central authority it can practically create: the Libra Association. The Libra Association aims to be a board of over one hundred major companies of which Facebook is just one (Libra Association et al., 2019). At this point there is an explosion of interpretations surrounding this new technology. Facebook views Libra as a massive stride towards financial inclusion while some politicians

view this as “a threat to national sovereignty” (Maire, 2019). Other politicians defend Libra as a piece of American innovation (Bursztynsky, 2019) while a researcher from Malaysia writes “At the backdrop of US-China trade war and the regulatory backlash to force Facebook to halt its Libra project, one is compelled to wonder till when the United States will exploit the world’s scarce resources and how many more lives will be perished for petrodollar so that the U.S. can continue enjoying the ’exorbitant privilege’ of dollar hegemony.” (Taskinsoy, 2019) Regardless of one’s views, it is easy to observe that Libra has been incredibly disruptive and divisive as just a variant of financial technology. This phenomenal level of reaction calls in to question what causes such a reaction: is it the scale of the technology? is it the reputation of Facebook? the reputation of the United States? While this question is outside the scope of this paper, an extension of SCOT to predict divisiveness or difficulty of stabilization in technology would almost certainly prove fruitful.

4.4 Gaming SCOT

Now that variation on financial technology has been examined and Libra has been introduced, let us examine the ways that various parties, whether knowingly or not, attempt to invoke SCOT’s closure mechanics to reach stabilization. Recall that EPOR outlines three explanatory stages, interpreting flexibly, reaching closure mechanisms, and relating the artifact to “the wider sociopolitical milieu” . Pinch and Bijker note that in reaching rhetorical closure “problems need not be solved in the common sense of that word. The key point is whether the relevant social groups see the problem as being solved.”(Pinch and Bijker, 1984) In the case of Libra we see appeals to rhetorical closure from various organizations. For example, popular tech-news publication The Verge continues to erroneously report “Facebook no longer intends to make the Libra token” (Statt, 2020) despite its source article correcting itself to reflect that Libra is being pursued (Heath, 2020). Readers can also observe the introduced “Keep Big Tech Out Of Finance Act” in the US House of representatives which rather pointedly bans large tech companies from disrupting financial industries as an attempt at a kind of legal closure on tech-

nological development(Garcia, 2019). What may be most interesting is that due to the sheer scale of Facebook and its potential partners in the Libra Association, Libra may be able to skip EPOR's closure stage all together and brute-force its way into the third stage of popular influence. This skipping is what would occur if Libra makes it to launch, which is contingent on US lawmaker approval. The technology could be placed into the hands of one third of the global population nearly instantly. Numbers like these could easily dwarf the estimated active cryptocurrency wallet users of 5.8 million users (Hileman and Rauchs, 2017). This level of reach was likely unimaginable in the 1980's when SCOT was first being formalized. It would be interesting to see if this new kind of closure by force is commonly used to construct technology in the future.

Another way groups can try to game the process observed by SCOT is to limit interpretive flexibility. In the case of Libra, this is done most visibly through smearing Mark Zuckerberg's face on denominations of currency. Looking to Figure 1, we see a congressman push the interpretation of Libra as a United States Dollar replacement controlled by Mark Zuckerberg. Looking to almost any news story featuring Libra, it is easy to observe similar acts (Statt, 2020) (Lee, 2020). This attack on interpretive flexibility is especially potent as modern news consumers can be profoundly influenced by emotionally charged image thumbnails and titles (Keib et al., 2018).

Figure 1: A slide presented by US Representative Brad Sherman during a congressional meeting with Mark Zuckerberg (Zuckerberg, 2019)

4.5 Further Variation

While Libra may be the most disruptive development in recent financial technologies, it may not be what society stabilizes to. Due to immense regulatory pressure, Facebook has announced that its wallet for transacting Libra currency is pivoting towards supporting fiat currency (Heath, 2020). In the meantime, other variants on this idea have been proposed. For example, a tech startup named Celo has raised over thirty million dollars to build what as been touted as "Libra Minus Facebook" (Cuen, 2020). This startup exemplifies how the social baggage carried by Facebook can actually contribute to the construction of technological artifacts. Another example is China's upcoming digital currency. With an unbanked population of 225 million people (Demirguc-Kunt et al., 2018), China is ripe for efficiency gains from a form of crytpobanking and is expected to launch a Libra-inspired, government-controlled cryptocurrency by the end of 2020 (Bram, 2020).

5 A Modern SCOT

Through my analysis, SCOT has proved to be still useful in examining the construction of modern technologies. Modern concepts of user groups and iterative cycles are almost perfectly analogous to SCOT's concepts of relevant social groups and variation. However, much has changed since the inception of SCOT in 1984. The internet has become mainstream, news publications have moved online, misinformation has become a popular issue, and consensus feels harder to reach than ever. With news moving online and a rise in media consolidation, we see many outlets regurgitating the same stories. This was the case for the aforementioned article from The Verge (Statt, 2020), as it was reporting on an exclusive from The Information (Heath, 2020) which was later corrected. The shape of news has changed to allow media conglomerates to limit interpretive flexibility. As a result, one finds that a group of news outlets can exhibit rhetorical stabilization without the relevant social groups feeling that any problem is solved. On the other hand, the power and reach of producers of technological artifacts have

grown to the point that these producers may force the adoption of technology regardless of the wants of any relevant social group.

As a result of these inadequacies, I would like to see a new concept of Core-Groups appear formalized alongside the SCOT framework. A Core-Group would be a group of actors that many stakeholders look to for closure. In the case of Libra, Core-Groups could include the mainstream news outlets, the cryptocurrency news websites, or the group of United States regulators. Looking to another emerging technology, 5G, one could label conspiracy media producers, cell-service providers, and state actors Core-Groups and then examine how these groups interact via social media platforms, advertisers, and consumers in the adoption of the technology. Pinch and Bijker themselves acknowledged that "In technology it seems that there is no equivalent group [to the Core-Set], and that a number of social groups must be studied." (Pinch and Bijker, 1984) I call for this concept to be extended from analysis of huge social groups to more manageable Core-Groups which can be looked to for consensus. These Core-Groups could be considered a middle step between EPOR's Core-Set and SCOT's relevant social groups.

6 Conclusion

In summary, Libra is observed to be a socially constructed technology in spite of the remarkably technical science backing it. Libra falls into a broader category of technologies which aim to remove fees and trust from traditional financial systems as a prerequisite to banking the billions unbanked and underbanked. I observe that the ideas of stabilization provided by SCOT are visibly gamed by core groups of actors, speaking to the need for more study into modern closure mechanisms. However, these exploits do not detract from SCOT; rather, they speak to the prevalence of an over thirty year old framework in the construction modern technology. With this prevalence, it is essential that not just academics, but practitioners like product managers add the concepts of SCOT to their analysis in order to view the large social scope of any technology and its launch.

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