

**THE INFLUENCERS: FACEBOOK’S LIBRA, PUBLIC BLOCKCHAINS,  
AND THE ETHICAL CONSIDERATIONS OF CENTRALIZATION**

*Professor Michele Benedetto Neitz\**

*The theoretical promise of blockchain technology is truly extraordinary: a peer-to-peer distributed immutable ledger that could revolutionize economies, societies, and even our daily lives. But what if blockchain technology is not as decentralized as people think? What are the ramifications if, in reality, a blockchain’s core decisions are actually influenced by small groups of people or corporations?*

*This short article seeks to answer that question, by demonstrating that decentralized public blockchains are only as immutable as the decentralization of their governance. Moreover, the announcement of Libra, Facebook’s new permissioned blockchain, shows a growing trend of centralized control around decentralized technologies. Libra is intended to run on highly distributed technology, but will be governed by, and therefore could be arguably controlled by, a highly centralized group of billion-dollar corporations.*

*Accordingly, this article exposes the ways in which blockchain centralization is leaving important decisions to small groups of people or corporations. These blockchain “agents of influence” have more power than many blockchain proponents acknowledge. Whenever human decision-making processes are in effect, the possibility of bias, conflicts of interest, and other ethical concerns will arise. Ironically, it is exactly this type of flawed human process that the blockchain was designed to solve.*

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\* Professor of Law, Golden Gate University School of Law, San Francisco, California, and Member of the California Blockchain Working Group. J.D. New York University School of Law, 2001; B.A., Santa Clara University, 1997. The views expressed are my own. I am grateful to Professor Spencer Williams, Professor Sam Ernst, Gloria Mengyi Wang, James Pitts, Carla Carriveau, and other blockchain engineers who provided technical advice and editing suggestions.

*This article therefore argues that as states design laws to regulate blockchain technology, they should consider adding ethical obligations to combat the problems inherent whenever small groups of people make influential decisions. By adopting ethical guidelines at this early stage, while the technology is still evolving, states and blockchain enthusiasts may abate public fears of blockchain technology and prevent larger ethical crises from developing down the road.*

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## I. INTRODUCTION

New technologies often provoke fear. As the Industrial Revolution gained traction in 1854, Henry David Thoreau warned, “[w]e do not ride on the railroad; it rides upon us.”<sup>1</sup> Thoreau was concerned that the new technologies reinventing the American economy would have unforeseen social costs, such as the effect of conditions on laborers and environmental concerns.<sup>2</sup>

We are living in a similar age of technological revolution, arguably the largest since the Internet was created several decades ago. Broad adoption of the Internet in the mid-1990s changed everything from the world’s economy to social norms, forever impacting the way people work, consume goods, and manage social relationships. With the advent of blockchain technology, many observers believe that a “new Internet” is upon us.<sup>3</sup> Accordingly, the historical precedent rings true once again as we witness new worries about the effects of blockchain. As *Forbes* magazine recently asked, “[j]ust why is there so much fear around the area of cryptocurrency [and blockchain] . . . ?”<sup>4</sup>

The theoretical promise of blockchain technology is truly extraordinary: a distributed immutable ledger with “unhackable algorithms” that “makes trust unnecessary.”<sup>5</sup> Blockchain proponents argue that this structure has the potential to revolutionize even more than the Internet did by eliminating the need for institutional trust.<sup>6</sup> Moreover, some proponents suggest

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<sup>1</sup> Randy Alfred, *Aug 9, 1854: Thoreau warns “The Railroad Rides on Us,”* WIRED (Aug. 9, 2010), <https://www.wired.com/2010/08/0809thoreau-walden-published/> [<https://perma.cc/K7P4-5EM6>].

<sup>2</sup> *Id.*

<sup>3</sup> Kevin Werbach, *Trust, but Verify: Why Blockchain Needs the Law*, 33 BERKELEY TECH. L. J. 487, 528–29 (2018).

<sup>4</sup> Lauren deLisa Coleman, *Why the Massive Fears Around Cryptocurrency Will Rise and What’s Next for 2018*, FORBES (Dec. 17, 2017), <https://www.forbes.com/sites/laurencoleman/2017/12/17/why-the-massive-fears-around-cryptocurrency-will-rise-and-whats-next-for-2018/#394b9ddb742d> [<https://perma.cc/E6AW-3WPU>].

<sup>5</sup> STEPHEN P. WILLIAMS, BLOCKCHAIN: THE NEXT EVERYTHING 15 (2019).

<sup>6</sup> See Esther Shein, *How Blockchain Changes the Nature of Trust*, LINUX FOUND. (Jan. 22, 2019), <https://www.linuxfoundation.org/blog/2019/01/>

that traditional establishments, including banks and governments, will no longer be relevant in the age of blockchain.<sup>7</sup> In response to the rapid advancement of blockchain technology, state and federal governments are scrambling to adapt laws and regulations for a newly decentralized economy.<sup>8</sup>

But what if blockchain technology is not as decentralized as people think? What if, in reality, a blockchain's core decisions are actually influenced by small groups of people or corporations?

Private blockchains, also known as permissioned blockchains, limit participation to specific individuals selected by a particular enterprise. These blockchains are already centralized, since “the owner of the blockchain is a single entity or an enterprise which can override/delete commands on a blockchain if needed.”<sup>9</sup> But even public blockchains are showing a growing tendency toward centralized decision-making power. This can be dangerous because the transactions in a ledger are only as immutable as the ledger itself. Although a blockchain mathematically ensures that records

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how-blockchain-changes-the-nature-of-trust/ [https://perma.cc/8NN7-XC7T] (“Blockchain shifts trust in people and institutions to trust in technology.”).

<sup>7</sup> See, e.g., Aleksei Gudkov, *Control on Blockchain Network*, 42 NOVA L. REV. 353, 374 (2018) (“The anonymity of decentralized network participants and peculiarities of technology prevent governments from efficient control over the network.”); but see Marcella Atzori, *Blockchain Technology and Decentralized Governance: Is the State Still Necessary?*, 6 J. OF GOVERNANCE & REG. 45, 45–62 (2017) (explaining the arguments in favor of decentralized governance but arguing that the role of the State is still a necessary one).

<sup>8</sup> See, e.g., Andrew Bloom, *Are Maryland and Virginia's Cryptocurrency Laws a Bellwether for Federal Rules and Regulations?*, GOV'T BLOCKCHAIN ASS'N (Apr. 26, 2019), <https://www.gbaglobal.org/are-maryland-and-virginias-cryptocurrency-laws-a-bellwether-for-federal-rules-and-regulations/> [https://perma.cc/A4AS-C9VH]; see also Andrew Bloom, *Blockchain 2019: U.S. Legislators Introduce New Bills Defining “Blockchain Technology”*, GOV'T BLOCKCHAIN ASS'N (May 1, 2019), <https://www.gbaglobal.org/united-states-senate-and-house-of-representatives-2019-blockchain-technology-bills/> [https://perma.cc/GH69-ZGPA].

<sup>9</sup> Harsh Agrawal, *What Are Private Blockchains & How Are They Different From Public Blockchains?* COINSUTRA (Sept. 15, 2018), <https://coinsutra.com/private-blockchain-public-blockchain/> [https://perma.cc/Q5Y8-RYNK] (“That’s why in its true sense [a permissioned blockchain] is not decentralized and hence can just be called a distributed ledger or database with cryptography to secure it.”).

in a ledger are immutable, there is no similar algorithmic assurance surrounding the various parties who design, develop, and deploy the ledger itself. Who governs those decisions depends on each individual blockchain, but the control of such decisions can often be far from decentralized.

Indeed, there are numerous examples in which small groups of people influence the determinations that ultimately affect blockchains and their users. As discussed below, the Ethereum “hard fork” decision in 2016 is a clear example that decentralized blockchains are only as immutable as the decentralization of their governance.<sup>10</sup> The recent announcement of Libra, Facebook’s new permissioned blockchain, shows a growing trend toward centralized control around decentralized technologies. Libra is intended to run on highly distributed technology, but will be governed by, and therefore could arguably be controlled by, a highly centralized group of billion-dollar corporations.<sup>11</sup>

Part II of this article describes how “decentralized” blockchain technology is actually moving toward centralization, with some individuals possessing the capacity to make critical decisions. These blockchain “agents of influence” have more power than many blockchain proponents acknowledge. This power creates a centralized effect on the development of blockchain technology, and also raises questions about the potential motivation driving these agents of influence.

Part III explains how this is problematic, because human decision-making processes inevitably invite the possibility of bias, conflicts of interest, and other ethical concerns. Ironically, it is exactly this type of flawed human process that blockchain was designed to avoid.

Part IV therefore argues that as states design laws to regulate blockchain technology, it is imperative that they consider adding ethical obligations to combat the problems inherent in human decision-making processes. The ethical rules governing the

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<sup>10</sup> See *infra* section II.C.1.

<sup>11</sup> See LIBRA ASS’N MEMBERS, AN INTRODUCTION TO LIBRA 3–4 (2019), <https://libra.org/en-US/white-paper/> [https://perma.cc/YW7J-N5WN] [hereinafter LIBRA WHITE PAPER].

conduct of lawyers, another field with outsized power to affect socioeconomic change, can serve as an effective starting point. The rules prohibiting bias and conflicts of interest are particularly applicable in the blockchain space.

Part V addresses potential challenges to the implementation of an ethical code of conduct, and recommends further research in these areas. By adopting ethical guidelines at this early stage, while the technology is still evolving, states and blockchain enthusiasts may abate public fears of blockchain technology and prevent larger ethical crises from developing down the road.

## II. THE REALITY OF BLOCKCHAIN CENTRALIZATION: WHO IS IN CONTROL?

### A. *Defining Blockchain Technology*

The definition of blockchain technology is admittedly a bit dry for non-technical readers. Academic authors define blockchain as a decentralized “database that uses certain cryptographic functions to achieve the requirements of data integrity and identity authentication.”<sup>12</sup> Although the technical definition is complicated, the essential function of blockchain is much simpler: providing a record, or ledger, of transactions that is both distributed and immutable. These transactions could be anything from cryptocurrency sales and purchases to health care records.

The ledger is distributed because it is not governed by a central entity, but is instead run on open-source software by a network of computers distributed around the world.<sup>13</sup> The reader of this article could download this software on his/her computer, and begin contributing to writing transactions into the ledger thereby

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<sup>12</sup> Jean Bacon et al., *Blockchain Demystified: A Technical and Legal Introduction to Distributed and Centralised Ledgers*, 25 RICH. J.L. & TECH. 1, 5–6 (2018).

<sup>13</sup> Angela Walch, *In Code(rs) We Trust: Software Developers as Fiduciaries in Public Blockchains*, in REGULATING BLOCKCHAIN: TECHNO-SOCIAL AND LEGAL CHALLENGES 61 (Ioannis Lianos, et al., eds., 2019).

becoming a “miner.” Miners are investors who permanently write transactions into a blockchain.<sup>14</sup>

The distributed nature of a blockchain ledger means that there is no central point of failure; records on blockchains may be kept on thousands of individual computers scattered worldwide.<sup>15</sup> This leads to a “trustless” system, in which a person can trust the validity of transactions without needing to rely on the integrity of intermediaries such as banks or governments.<sup>16</sup> In addition, one single distributed ledger can be used in the place of multiple private ledgers requiring reconciliation, thereby reducing the costs of transactions.<sup>17</sup>

The ledger is also immutable (i.e., unable to be changed). Once the transaction is written into the blockchain, it is mathematically impossible to remove that record. Immutability is the real power of the blockchain—the ability to ensure the ledgers based on it can never be changed or manipulated, without the need for third party verification.

On its face, the definition and function of blockchain technology may appear uncontroversial. But observers describe this technology in wildly divergent terms. Is blockchain a “world-changing technology” that will “transform society” and enable a “bright future for the planet”?<sup>18</sup> Or is it a “haven for criminal activity, a Ponzi scheme, and a road both to anarchy and to authoritarianism?”<sup>19</sup> Or is it all of these?

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<sup>14</sup> Ameer Rosic, *Ethereum Mining 101: Your Complete Guide*, HUFFPOST (Mar. 1, 2017), [https://www.huffpost.com/entry/ethereum-mining-101-your-complete-guide\\_b\\_58b6e1eee4b02f3f81e44e9f](https://www.huffpost.com/entry/ethereum-mining-101-your-complete-guide_b_58b6e1eee4b02f3f81e44e9f) [<https://perma.cc/U9B9-QE44>]. Miners participate in “peer distributed cryptocurrency network[s] in consensus,” and are “subsequently rewarded for providing solutions to challenging math problems.” *Id.* This is accomplished by “putting [the] computer’s hardware to use with mining applications.” *Id.*

<sup>15</sup> PRIMAVERA DE FILIPPI & AARON WRIGHT, *BLOCKCHAIN AND THE LAW* 35 (2018).

<sup>16</sup> Werbach, *supra* note 3, at 491.

<sup>17</sup> *Id.*

<sup>18</sup> WILLIAMS, *supra* note 5, at 182.

<sup>19</sup> Werbach, *supra* note 3, at 489.

The truth is that blockchains are tools which can be used for both “good and malicious ends.”<sup>20</sup> The original innovators of blockchain viewed the technology as a path to a libertarian ideal. Cryptocurrencies running on blockchains were designed to offer “a solution to the problem of government oversight of value-based transactions.”<sup>21</sup> From this standpoint, decentralized ledger technology can serve as a “firewall” against government regulation and intervention.<sup>22</sup> Thus, libertarians view blockchain technology as a chance to engage in economic activities outside the bounds of state control.<sup>23</sup> Some admirers see this technology as providing a chance to “undermine entrenched private power.”<sup>24</sup>

On paper, this may all be true. Blockchain use case possibilities go well beyond cryptocurrencies; blockchain technology is impacting everything from health care to supply chain management to electronic voting.<sup>25</sup> But as states begin to adopt regulations governing cryptocurrencies and other uses of blockchain technology,<sup>26</sup> it is becoming clear that the libertarian ideal of a blockchain free from government oversight was just that: an ideal. Moreover, there are already examples in which human decision-making has counteracted the immutability of some public blockchains.

### *B. Increasing Centralization*

For public blockchains such as Ethereum, decentralization remains the vision. The founder of Ethereum described public blockchains as politically and architecturally decentralized, but logically centralized because the nodes in the system reach “one

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<sup>20</sup> Michele Finck, *Blockchains: Regulating the Unknown*, 19 GERMAN L. J. 665, 666 (2018).

<sup>21</sup> Werbach, *supra* note 3, at 522.

<sup>22</sup> *Id.*

<sup>23</sup> *Id.* at 497.

<sup>24</sup> *Id.*

<sup>25</sup> For a summary of emerging blockchain use cases, see Pavel Romanenko, *20 Blockchain Use Cases for 2018 You Should Know*, HACKERNOON (Dec. 11, 2018), <https://hackernoon.com/20-blockchain-use-cases-for-2018-you-should-know-f7d2919c191d> [<https://perma.cc/6THL-DAFQ>].

<sup>26</sup> See Bloom, *supra* note 8.



commonly agreed [upon] state” through consensus.<sup>27</sup> The result is that the system “*behaves* like a single computer.”<sup>28</sup> Theoretically, therefore, the only centralization in Ethereum is the platform itself, operating seamlessly through consensus.

In practice, however, some public blockchains do not operate in the decentralized way their advocates originally envisioned. As the technology develops, there have been numerous inflection points requiring decisions influenced by real people, not by nodes operating through consensus.<sup>29</sup> These so-called “agents of influence” raise an intriguing issue: who really controls consensus in blockchain technology?

Blockchain technologists would likely state that the answer is clear: the whole point of consensus is the avoidance of a centralized power structure. However, a close examination of the way public blockchains, such as Ethereum, have operated in recent years demonstrates that blockchain platforms have “agents of influence” who informally affect the ways consensus is reached.

### C. Case Study 1: Ethereum (Public Blockchain)

#### 1. The 2016 DAO Hack

Ethereum is a peer-to-peer network developed via an open-source process,<sup>30</sup> and the founder of Ethereum maintains that “[t]he Ethereum Foundation tries very hard to be a decentralized organization.”<sup>31</sup> The responsibility for changes to the code protocol belongs to a “small unit” known as the Core Developers (or the

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<sup>27</sup> Vitalik Buterin, *The Meaning of Centralization*, MEDIUM (Feb. 26, 2017), <https://medium.com/@VitalikButerin/the-meaning-of-decentralization-a0c92b76a274> [<https://perma.cc/QLE5-4NJQ>].

<sup>28</sup> *Id.*

<sup>29</sup> See Walch, *supra* note 13, at 62 (discussing “the power that a small group of developers wield” in public blockchains).

<sup>30</sup> Bacon, *supra* note 12, at 62–63.

<sup>31</sup> Romain Dillet, *Vitalik Buterin: “I definitely hope centralized exchanges go burn in hell as much as possible,”* TECH CRUNCH (July 6, 2018), <https://techcrunch.com/2018/07/06/vitalik-buterin-i-definitely-hope-centralized-exchanges-go-burn-in-hell-as-much-as-possible/> [<https://perma.cc/QQE6-9DES>].

“Core Devs”).<sup>32</sup> The core developers meet regularly in open meetings online.<sup>33</sup>

The influence of the core developers is illustrated by the response to the well-known Decentralized Autonomous Organization (“DAO”) hack on the Ethereum platform.<sup>34</sup> The DAO was created in 2016 to enable funding of Ethereum-based projects.<sup>35</sup> It was very successful, with approximately 11,000 members contributing \$160 million in Ether funding.<sup>36</sup> In one of the most notorious blockchain hacks to date, an unknown hacker found a “vulnerability in [t]he DAO’s smart contracts and siphoned off almost a third of its funds.”<sup>37</sup>

In response to the hack, Ethereum’s core developers proposed a hard fork, effectively “reversing the transaction[s].”<sup>38</sup> These seven core developers “unilaterally” made the decision to “essentially create a new version of the network with different rules than the original. Then, miners, exchanges, and other major apps that were

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<sup>32</sup> Johnson Go, *Core developer believes Ethereum governance has failed*, CRYPTOPOLITAN (Apr. 1, 2018), <https://www.cryptopolitan.com/core-developer-believes-ethereum-governance-has-failed/> [<https://perma.cc/X95W-CBNR>]. One core developer recently made headlines by advocating that Ethereum should embrace a centralized management structure. *Id.*

<sup>33</sup> See, ETHEREUM FOUND., *Ethereum Core Devs Meeting #64 [2019-07-05]*, YOUTUBE (July 4, 2019), [https://www.youtube.com/watch?v=2D\\_DqJ8jL9Y&feature=youtu.be&t=226](https://www.youtube.com/watch?v=2D_DqJ8jL9Y&feature=youtu.be&t=226) [<https://perma.cc/T4XN-R2C8>].

<sup>34</sup> See, e.g., Matthew Leising, *The Ether Thief*, BLOOMBERG (June 13, 2017), <https://www.bloomberg.com/features/2017-the-ether-thief/> [<https://perma.cc/U7GG-CC68>]; see also Joon Ian Wong & Ian Kar, *Everything you need to know about the Ethereum “hard fork,”* QUARTZ (July 18, 2016), <https://qz.com/730004/everything-you-need-to-know-about-the-ethereum-hard-fork/> [<https://perma.cc/XWU4-Q9BP>].

<sup>35</sup> Bacon, *supra* note 12, at 204. These projects included the use of “*smart locks* to let people share their physical assets (e.g. cars, boats, apartments).” *Id.* (emphasis original).

<sup>36</sup> *Id.*

<sup>37</sup> *Id.* For a detailed summary of the DAO Hack, see Leising, *supra* note 34.

<sup>38</sup> Aziz, *Guide to Ethereum Hard Forks: Ethereum Classic, Etherzero & Metropolis*, MASTER THE CRYPTO, <https://masterthecrypto.com/ethereum-hard-forks-guide-ethereum-classic-etherzero-metropolis/> [<https://perma.cc/8NAD-HPHB>].

built on it need[ed] to decide if they want[ed] to [be] a part of the new version of Ethereum or the original.”<sup>39</sup>

The new version of Ethereum was ultimately adopted by a majority of the miners.<sup>40</sup> This was an extraordinary remedy for an unforeseen (and dramatic) hack, as it required “chang[ing] Ethereum’s underlying codes.”<sup>41</sup> Although some argued that this response was a violation of blockchain users’ “most fundamental values,”<sup>42</sup> the core developers had enough sway to convince most miners that the hard fork was the proper response to the hack.<sup>43</sup> This is one example of a small group of people advocating successfully for the modification of a so-called immutable blockchain.

## 2. Parity’s Smart Contract Bug on Ethereum (2017)

Nearly two years later, a developer company named Parity was attempting to fix a bug after a hack on the Ethereum platform.<sup>44</sup> Parity inadvertently left a second bug in its smart contracts, enabling one user to accidentally take control of hundreds of wallets<sup>45</sup> containing millions of dollars’ worth of Ether.<sup>46</sup> The user

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<sup>39</sup> Wong & Kar, *supra* note 34.

<sup>40</sup> Aziz, *supra* note 38 (“[T]he majority of participants on the Ethereum blockchain—led by Ethereum’s core developers—felt that the right thing to do was to reverse the transactions.”).

<sup>41</sup> *Id.*

<sup>42</sup> Leising, *supra* note 34; *see also* Adam Sulkowski, *Blockchain, Business Supply Chains, Sustainability, and Law: The Future of Governance, Legal Frameworks, and Lawyers?* 43 DEL. J. CORP. L. 303, 320 (2018).

<sup>43</sup> *See* Walch, *supra* note 13, at 63 (“only a small number of developers and miners in this ‘decentralized’ system decided what the resolution of the DAO hack would be . . .”).

<sup>44</sup> *See* Alex Hern, ‘\$300m in cryptocurrency’ accidentally lost forever due to bug, *GUARDIAN* (Nov. 8, 2017), <https://www.theguardian.com/technology/2017/nov/08/cryptocurrency-300m-dollars-stolen-bug-ether> [<https://perma.cc/7M2W-PY95>].

<sup>45</sup> A digital wallet is a “software program that stores private and public keys” which enables blockchain users “to send and receive digital currency and monitor their balance.” Ameer Rosic, *Cryptocurrency Wallet Guide: A Step-By-Step Tutorial*, BLOCKGEEKS, <https://blockgeeks.com/guides/cryptocurrency-wallet-guide/> [<https://perma.cc/EF9B-LM4Z>] (last visited July 17, 2019).

<sup>46</sup> Hern, *supra* note 44; *see also* Michael Yuan, “I accidentally killed it” (and evaporated \$300 million), *MEDIUM* (Nov. 10, 2017), <https://medium.com/>

tried to return the money by deleting the code that had transferred ownership, which had the unintended effect of permanently locking up \$300 million worth of ether.<sup>47</sup> Given this accidental “freezing” of ether coin, the only way for Ethereum to restore the funds was to again do a hard fork.<sup>48</sup> The owners of the frozen currency justifiably pushed for such a response.<sup>49</sup> However, Ethereum’s core developers decided not to do a hard fork in this case, instead electing to leave the \$300 million locked.

Vitalik Buterin, Ethereum’s founder, defended the decision on Twitter.<sup>50</sup> When asked by a Twitter user “[d]o you think you can explain why the DAO hack was granted [a hard fork] and this hack would not be?” Buterin gave three reasons for the decision: “1. [The] [e]cosystem [was] less mature then[;] 2. [There was] [m]ore at stake then as [a percentage] of all ETH[;] [and] 3. [t]oday’s attacker can just move funds, so HF is impossible.”<sup>51</sup>

The hard fork in the DAO Hack case, and the lack of a hard fork in the Parity bug case, are instructive examples of the power of a small group of people to influence decisions on a blockchain platform. In the first situation, millions of dollars were returned to the proper individuals; in the other, millions of dollars are still locked away. Those critical decisions were made not by math, but by fallible human choice.

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cybermiles/i-accidentally-killed-it-and-evaporated-300-million-6b975dc1f76b  
[<https://perma.cc/2S2Y-WLPX>].

<sup>47</sup> Hern, *supra* note 44.

<sup>48</sup> The Ethereum Foundation’s head of security stated, “I see it as an objective fact that these funds cannot be unlocked unless there is a hardfork involved.” Jon Neilson, *No Solution Found for Parity Wallet Bug That Froze 500,000 ETH Worth \$150M*, COINCODEX, <https://coincodex.com/article/1054/no-solution-found-for-parity-wallet-bug-that-froze-500000-eth-worth-150m/> [<https://perma.cc/UKB2-XYGW>]; *see also* Hern, *supra* note 44.

<sup>49</sup> Jen Wiczner, *Ethereum Fork Could Help Restore Frozen Parity Cryptocurrency*, FORTUNE (Mar. 4, 2019), <https://fortune.com/2019/03/04/ethereum-fork-parity-frozen-cryptocurrency/> [<https://perma.cc/VD3W-9AVX>] (“Parity developers . . . argued without success for a hard fork in the Ethereum blockchain in order to restore the frozen cryptocurrency.”).

<sup>50</sup> Vitalik Buterin (@VitalikButerin), TWITTER (July 19, 2017), <https://twitter.com/VitalikButerin/status/887783867129745412> [<https://perma.cc/LQG5-9GDP>].

<sup>51</sup> *Id.*

Is a platform that gives this level of influence to a small group of people really a “decentralized” platform? In fact, observers have noted that cryptocurrencies “resemble traditional governance structures,” since “much of the decision-making process is not explicit and efficient and users aren’t completely empowered.”<sup>52</sup>

This raises profound ethical concerns. In Ethereum’s case, most members of the Ethereum Foundation (and presumably the Core Developers) are seeking to “do what is best for Ethereum.”<sup>53</sup> If management of public blockchain platforms is so strongly influenced by a small number of core persons, those persons—as well meaning as they may be—will bring their biases and conflicts of interest to the blockchain. But here is where theory and reality diverge, for “[w]hen the beautiful math . . . meets the messy reality of real-world implementation, it turns out to be not so perfect.”<sup>54</sup>

#### *D. Case Study 2: Facebook’s Libra (Permissioned Blockchain)*

In June 2019, Facebook announced its intention to create its own cryptocurrency, called Libra, on a permissioned blockchain. Libra operates as a textbook example of the problematic ethical issues at stake.

Facebook’s Libra White Paper describes the company’s intention to “design and govern” the currency’s ecosystem for “public good,” with special regard for advancing “financial inclusion” and supporting “ethical actors.”<sup>55</sup> Libra will be built on

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<sup>52</sup> Nick Tomaino, *The Governance of Blockchains*, MEDIUM (Feb. 28, 2017), <https://thecontrol.co/the-governance-of-blockchains-5ba17a4f5da6> [<https://perma.cc/GL8E-Z2G8>]. There are some governance experiments happening in the blockchain space. For example, Polkadot will be delegating “management power directly to token holders.” Rachel Rose O’Leary, *Polkadot’s Plan for Governing a Blockchain of Blockchains*, COINDESK (Mar. 22, 2018), <https://www.coindesk.com/polkadots-radical-plan-governing-blockchain-blockchains> [<https://perma.cc/X4BJ-R5LZ>]. The founder of Polkadot stated that he is developing this model because “we’re still woefully inadequate at solving consensus for what happens to the chain.” *Id.*

<sup>53</sup> The Ethereum Foundation Team, *Ethereum Foundation Spring 2019 Update*, ETHEREUM BLOG (May 21, 2019), <https://blog.ethereum.org/2019/05/21/ethereum-foundation-spring-2019-update/> [<https://perma.cc/T3E8-GZ2K>].

<sup>54</sup> Werbach, *supra* note 3, at 512.

<sup>55</sup> LIBRA WHITE PAPER, *supra* note 11, at 1–3.

a “secure, stable, and reliable blockchain,” and will be backed by “a reserve of real assets.”<sup>56</sup> Although all consumers will be able to use Libra coin, participation in the governance and control of the infrastructure is only reserved for those selected by Facebook to be part of the Libra Association.<sup>57</sup>

Libra will be governed by this “independent” Libra Association, a collection of large corporations and nonprofits “tasked with evolving the ecosystem.”<sup>58</sup> The Libra Association is the only party able to mint and burn the Libra coin.<sup>59</sup> It will be governed by a “Council,” which will consist of a representative of each member of the Association. The Council will vote on decisions and will in turn be managed by the Libra Association Board.<sup>60</sup>

This raises an obvious question: who will be part of the Libra Association, and therefore be able to join the Council and/or the Board to make decisions for the blockchain? Unlike the culture at Ethereum, which is open to any code developer,<sup>61</sup> membership in the Libra Association requires an elite set of credentials. For example, for a business to become a Founding Member, it must be able to meet two of the following three thresholds:

1. Have more than \$1 billion USD in market value or greater than \$500 million USD customer balances.
2. Reach greater than 20 million people a year, multinationally.

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<sup>56</sup> *Id.* These assets include “basket of bank deposits and short-term government securities.” *Id.*

<sup>57</sup> Some have argued that permissioned blockchains are innately centralized, since “the owner of the blockchain is a single entity or an enterprise which can override/delete commands on a blockchain if needed.” Agrawal, *supra* note 9 (“That’s why in its true sense [a permissioned blockchain] is not decentralized and hence can just be called a distributed ledger or database with cryptography to secure it.”).

<sup>58</sup> LIBRA WHITE PAPER, *supra* note 11, at 3.

<sup>59</sup> LIBRA WHITE PAPER, *supra* note 11, at 8–11.

<sup>60</sup> *Id.*

<sup>61</sup> In 2017, the founder of Ethereum tweeted “How you can help Ethereum: send smart people our way. Math, CS, dist sys, crypto, econ, game theory, behav econ all highly welcome.” Vitalik Buterin (@VitalikButerin), TWITTER (May 24, 2017, 5:22 AM), <https://twitter.com/vitalikbuterin/status/867355118005436416> [<https://perma.cc/4X4D-DL9J>].

3. Be recognized as a top-100 industry leader by a third-party sector-specific association or media company.<sup>62</sup>

Crypto-focused investors seeking to become Founding Members must have more than \$1 billion of assets under management.<sup>63</sup> Nonprofits have similarly exclusive membership requirements, as they must be ranked in the top 100 list of nonprofits, as determined by one of several ranking measures, and must have at least a \$50 million budget.<sup>64</sup>

Libra will be a permissioned blockchain, so it is understandable that there would be some level of validation required to secure permission to join. Libra developers explained that “Founding Members are organizations with established reputations, making it unlikely that they would act maliciously . . . .”<sup>65</sup> While it may be true that these “established” Founding Members have compliance barriers in place, the plethora of recent corporate scandals demonstrates that established reputations do not guarantee benevolent behavior.<sup>66</sup>

Facebook is trying to make Libra public and fully distributed within five years, but there is no guarantee that will occur.<sup>67</sup> In fact,

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<sup>62</sup> LIBRA ASS’N MEMBER, HOW TO BECOME A FOUNDING MEMBER 3 (2019), [https://libra.org/en-US/becoming-founding-member/#member\\_evaluation\\_criteria](https://libra.org/en-US/becoming-founding-member/#member_evaluation_criteria) [<https://perma.cc/62BQ-CLR4>]. Initial members include MasterCard, eBay, Coinbase, and Andreessen Horowitz. *Id.*

<sup>63</sup> *Id.*

<sup>64</sup> *Id.*

<sup>65</sup> Zachary Amsden et al., THE LIBRA BLOCKCHAIN 24 (2019), <https://developers.libra.org/docs/assets/papers/the-libra-blockchain.pdf> [<https://perma.cc/UL9D-QMXX>].

<sup>66</sup> See, e.g., Sachin Waikar, *Businesses Behaving Badly: The State of Corporate Scandal in 2019*, INSIGHTS BY STAN. BUS. (Mar. 15, 2019), <https://www.gsb.stanford.edu/insights/businesses-behaving-badly-state-corporate-scandal-2019> [<https://perma.cc/PSX4-JBYA>] (“the potential for U.S. corporate misbehavior remains high”); Matt Egan, *The Two-Year Wells Fargo Horror Story Just Won’t End*, CNN (Sept. 7, 2018), <https://money.cnn.com/2018/09/07/news/companies/wells-fargo-scandal-two-years/index.html> [<https://perma.cc/7A7S-PKKT>].

<sup>67</sup> LIBRA WHITE PAPER, *supra* note 11, at 10–11. (“Together with the community, the association will research the technological challenges on the path to a permissionless ecosystem so that we can meet the objective to begin the transition within five years of the launch.”).

Facebook is hoping it will be able to create technology that allows a truly decentralized blockchain to handle a large number of transactions. That is not yet possible with current technology, and no one has yet agreed upon a solution.<sup>68</sup> In truth, it is difficult to reconcile the power of the Libra Association's elite Founding Members with the concept of a "decentralized" blockchain, regardless of whether Facebook reaches its ultimate goal of making Libra a public blockchain.

Indeed, there are unintended consequences lurking throughout Facebook's vision of Libra. While Facebook has taken steps to minimize its involvement and guarantees the existence of a "firewall" between the social media's data collection and this new financial tool, it is not hard to imagine a breach in the firewall that would enable Facebook to connect spending power with true identities.<sup>69</sup> This raises significant conflict of interest concerns.

In addition, who can say what biases the corporate members of the Libra Association will bring to their decision-making? Ethical questions abound, with no guidance available to steer Facebook (or any other blockchain developer) on how to choose the most ethical path.

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<sup>68</sup> LIBRA WHITE PAPER, *supra* note 11, at 4 ("The challenge is that as of today we do not believe that there is a proven solution that can deliver the scale, stability, and security needed to support billions of people and transactions across the globe through a permissionless network.").

<sup>69</sup> Observers began to express concerns about the strength of the firewall within days of the Libra announcement. *See, e.g.*, Letter to Legislators, Regulators, and Facebook and Calibra employees, PUBLIC CITIZEN (July 2, 2019), <https://www.citizen.org/article/reject-libra/> [<https://perma.cc/5E5A-CJWT>] (asking a series of questions about the firewall, including "What guarantees will there be that Facebook does not use Calibra to obtain access to the transactions across the Libra network? What protections does incorporation of a subsidiary offer? What is to prevent Facebook from unilaterally altering promises about a firewall between Calibra and Facebook?"); *see also* Scott A. Shay, *Facebook's Libra Cryptocurrency: Bad for Privacy, Competition*, ASIA TIMES (June 27, 2019), <https://www.asiatimes.com/2019/06/article/facebooks-libra-cryptocurrency-bad-for-privacy-competition/> [<https://perma.cc/PTL6-WWJ7>] ("Facebook will speak piously about privacy controls and its concern for the consumer, yet it will still figure out a way to sell the data or others who buy the data will figure it out for them.").



Libra may change as the currency develops. Steve Forbes wrote an open letter advising Facebook CEO Mark Zuckerberg to make the Libra coin more stable.<sup>70</sup> Representative Maxine Waters called on Facebook to hold off on development plans for Libra until Congress has a chance to ask questions.<sup>71</sup> France declared that it would block the development of Libra in Europe completely until Facebook addressed consumer risk and government sovereignty concerns.<sup>72</sup> As with any new technology, public fear about Libra is percolating. However, stifling innovation completely cannot be a permanent solution. To address regulators' concerns about evolving blockchain technology, Congress and state legislators should instead consider implementing ethical rules to guide the evolution of this new currency.

### III. THE NEED FOR ETHICAL RULES IN BLOCKCHAIN TECHNOLOGY

Ethical issues can occur whenever humans are involved in decision-making. This is especially true in professions with the power to influence people and policy, such as the legal profession. Lawyers and judges are regularly called upon to make decisions that impact people. Accordingly, states began drafting ethical codes over 100 years ago to govern their conduct.<sup>73</sup>

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<sup>70</sup> Steve Forbes, *Open Letter to Mark Zuckerberg*, FORBES (June 25, 2019), <https://www.forbes.com/sites/steveforbes/2019/06/25/open-letter-to-mark-zuckerberg/#2ef448622614> [<https://perma.cc/P6MF-STRT>].

<sup>71</sup> Zachary Warmbrodt, *Waters Calls on Facebook to Halt Digital Currency Plans*, POLITICO (June 18, 2019), <https://www.politico.com/story/2019/06/18/maxine-waters-facebook-hearing-1539475> [<https://perma.cc/WV77-9LJW>].

<sup>72</sup> Richard Partington, *France to Block Facebook's Libra Cryptocurrency in Europe*, GUARDIAN (Sept. 12, 2019), <https://www.theguardian.com/technology/2019/sep/12/france-block-development-facebook-libra-cryptocurrency> [<https://perma.cc/4FKC-ZU5S>].

<sup>73</sup> The first ethical Code of Conduct for lawyers was drafted in Alabama in 1887. Carol Rice Andrews, *Standards of Conduct for Lawyers: An 800-Year Evolution*, 57 SMU L. REV. 1385, 1385 (2004). The ABA adopted the first "Canons of Judicial Ethics" in 1924. Andrew J. Lievens & Avern Cohn, *The Federal Judiciary and the ABA Model Code: The Parting of the Ways*, 28 JUST. SYS. J. 3, 271 (2007).

Blockchain technology, though still a new field, has the potential to be as impactful upon people's lives as the field of law.<sup>74</sup> It is easy to find examples of blockchain technology being used for corrupt purposes; during the first three months of 2019, \$356 million in cryptocurrency was stolen.<sup>75</sup> There will always be fraud and theft in any sphere (one need not look too far to find equally outrageous corruption in the legal field). High-profile blockchain fraud and the resulting publicity is part of the reason that lawmakers, academics, lawyers, and engineers are striving to create a regulatory scheme that will match this revolutionary technology.<sup>76</sup>

Blockchain proponents might argue that, as a technology governed by code, human decision-making is irrelevant to blockchain. However, “[b]lockchains are systems designed, implemented, and used by humans. Subjective intent remains relevant even when expressed through objective code.”<sup>77</sup> Moreover, even if blockchain technology works perfectly, the potential for “human fallibility and corruption” can remain a fundamental issue.<sup>78</sup> As discussed above, decisions about future code design in public blockchain platforms are influenced by a small number of developers, and newly emerging blockchains such as Libra further limit development to the elite few. How can we ensure that these agents of influence remain ethical? One clear answer is to start talking about ethics issues in blockchain,

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<sup>74</sup> WILLIAMS, *supra* note 5, at 182 (“[B]lockchain has the potential to influence and even transform a long list of industries, concepts, and systems.”).

<sup>75</sup> David Canellis, *\$356 Mmillion in Cryptocurrency Stolen in First Three Months of 2019*, NEXT WEB (May 1, 2019), <https://thenextweb.com/hardfork/2019/05/01/cryptocurrency-stolen-first-quarter-2019-hack/> [<https://perma.cc/SB2A-TTHA>].

<sup>76</sup> See, e.g., Caitlin Long, *Seismic News About State Virtual Currency Laws: ULC Urges States To Withdraw Model Act*, FORBES (Mar. 25, 2019), <https://www.forbes.com/sites/caitlinlong/2019/03/25/seismic-news-about-state-virtual-currency-laws-ulc-urges-states-to-withdraw-model-act/#524a0da25fda> [<https://perma.cc/EPJ5-E6DQ>]; Werbach, *supra* note 3, at 514 (“The limitations of the blockchain create problems when it is positioned as the sole guarantor of enforcement.”).

<sup>77</sup> Werbach, *supra* note 3, at 494.

<sup>78</sup> Sulkowski, *supra* note 42, at 306–07.

particularly the issues raised by humans influencing coding decisions in blockchain platforms.<sup>79</sup>

Blockchain may indeed be so revolutionary that individuals may well someday be able to “self-govern” and avoid legal rules.<sup>80</sup> But because blockchain is in its early stages, governments still have the ability to “shape the development of the technology by passing laws and regulations that will either constrain or promote the technology’s growth and adoption.”<sup>81</sup> Given this power, state legislators and the Uniform Law Commission, who are currently considering blockchain legislation,<sup>82</sup> should recognize the need for an ethical code of conduct in blockchain laws. Indeed, “regulators who do nothing will be a greater threat to the development of the market than those who engage in thoughtful and evolving efforts to address public policy [including ethical] considerations.”<sup>83</sup> Including an ethical code of conduct in draft legislation would indicate that regulatory authorities recognize the dangers inherent in developing technology without considering ethical standards.<sup>84</sup>

Blockchain proponents might object to ethical codes of conduct as part of state regulation. Ironically, however, the need for ethical guidance is so great that blockchain advocates and engineers have begun to fill the void by proposing their own code of conduct. A

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<sup>79</sup> Experts are considering alternative approaches. For example, Professor Angela Walch argues that blockchain developers who exercise power over public blockchains could be considered fiduciaries who can be held accountable through the fiduciary duty doctrine. Walch, *supra* note 13, at 73–75.

<sup>80</sup> FILIPPI & WRIGHT, *supra* note 15, at 56.

<sup>81</sup> *Id.* at 57.

<sup>82</sup> Long, *supra* note 76.

<sup>83</sup> Werbach, *supra* note 3, at 533.

<sup>84</sup> We have already seen this danger play out in the context of large social media companies, for “if regulators had applied some pointed pressure only a decade ago, when all the same warning signs were there, we could have prevented the mess we find ourselves in now, with rampant disinformation, egregious privacy breaches and in-plain-sight addictive elements built right into the medium.” Kara Swisher, *The People Screaming for Blood Have No Idea How Tech Actually Works*, N.Y. TIMES (June 4, 2019), <https://www.nytimes.com/2019/06/04/opinion/facebook-google-regulation.html> [<https://perma.cc/FQ8T-5TC9>].

group called Blockchain for Good is organizing blockchain leaders to collaborate in creating a “Blockchain Code of Ethics.”<sup>85</sup>

Similarly, engineers from the Ethereum Foundation proposed a Code of Conduct on the Ethereum platform.<sup>86</sup> The Code is “meant for a decentralized community[,]” meaning that teams and initiatives could work collectively to create an ethical scheme.<sup>87</sup> The Beeck Center at Georgetown University also published a framework for “blockchain ethical design.”<sup>88</sup> The framework differs from a code of conduct, but it is intended to be used as a “tool for creating intentional design that incorporates key ethical questions” as blockchain projects are developed.<sup>89</sup>

It is clear that the blockchain community already recognizes the need for ethical codes of conduct. The existing proposals are mainly focused on avoiding harassment and ensuring inclusivity of minority populations in this space. These are admirable goals, and engineers should be recognized for creating codes of conduct when

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<sup>85</sup> BLOCKCHAIN FOR GOOD, <http://blockchaincodeofethics.com/blockchain-code-of-ethics/> [<https://perma.cc/7FJM-QKHX>] (last visited July 18, 2019). Their mission statement declares “We the people, the creators, the developers, the business leaders, the culture designers of our time, endeavor to create a framework for Ethical Blockchain Companies, which will hold organizations accountable . . . .” BLOCKCHAIN FOR GOOD, *We the People*, <http://blockchaincodeofethics.com/we-the-people/> [<https://perma.cc/7WHX-T2LD>] (last visited July 18, 2019).

<sup>86</sup> See *Ethereum Community’s Code of Conduct v1*, HACK MD, [https://hackmd.io/KAVQHbnRR8SMsY\\_YIin9qA](https://hackmd.io/KAVQHbnRR8SMsY_YIin9qA) [<https://perma.cc/M4B2-GVDP>] (last visited July 18, 2019).

<sup>87</sup> Integrity Ring of the Ethereum Magicians, CODE OF CONDUCT PROJECT, <https://github.com/jpitts/integrity-ring> [<https://perma.cc/D46X-TMTN>] (last visited July 18, 2019).

<sup>88</sup> Cara Lapointe & Lara Fishbane, *The Blockchain Ethical Design Framework*, BEECK CENTER FOR SOCIAL IMPACT + INNOVATION, <http://beeckcenter.georgetown.edu/wp-content/uploads/2018/06/The-Blockchain-Ethical-Design-Framework.pdf> [<https://perma.cc/3FFE-8KLZ>] (last visited July 18, 2019).

<sup>89</sup> *Id.* at 21. These broad questions include governance, identity, verification/authenticity, access, ownership of data, and security. *Id.* at 22. This framework is intended to help decision-makers creating or influencing social impact solutions “that may involve the design and implementation of a blockchain.” *Id.* at 21. It is more focused on entrepreneurs than regulators or blockchain users.

they were not required to do so. But this is an opt-in scheme, meaning that each blockchain project can choose to adopt these codes of conduct. Opt-in schemes are a good start, but companies can also choose to avoid ethical standards completely.

States and the Uniform Law Commission should therefore enter this domain with the creation of mandatory ethical standards for blockchain technology companies, platforms, and projects. Although this approach is undoubtedly controversial, it would ensure that ethical standards are applied uniformly throughout this field, regardless of whether such developers or platforms choose to adopt such standards. Moreover, a legislatively developed set of guidelines would enable the blockchain industry to implement ethical rules without waiting for the development of judicially created rules in various courts.

What would a mandatory code of conduct look like? States could look to other professions for guidance. Accounting, medicine and architecture all enforce codes of ethical conduct.<sup>90</sup> Legal ethics standards, which have been vetted for over 100 years, provide a useful framework. The legal field and the blockchain industry are different, but they share unique characteristics. For example, both fields require specialized knowledge as a barrier to entry, and both fields possess a great deal of power to affect socioeconomic change. In addition, lawmakers may feel comfortable drawing from an ethical scheme that is already operating in their jurisdictions.

#### **IV. RECOMMENDATION: BIAS AND CONFLICT OF INTEREST PROVISIONS IN A BLOCKCHAIN CODE OF CONDUCT**

Given the fact that some public blockchain platforms, in reality, rely upon centralized agents of influence for decision-

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<sup>90</sup> See, e.g., AM. INST. OF CPAS, “AICPA Code of Professional Conduct” (2014), <https://www.aicpa.org/> [<https://perma.cc/4Q8P-5PAA>]; AM. MED. ASS’N, “Code of Medical Ethics,” <https://www.ama-assn.org/delivering-care/ethics/code-medical-ethics-overview> [<https://perma.cc/4X5545HLresearch/standards/codeofconduct.html>] (last visited October 4, 2019); National Council of Architecture Registration Boards, “Model Rules of Conduct” (July 2018), [https://www.ncarb.org/sites/default/files/Rules\\_of\\_Conduct.pdf](https://www.ncarb.org/sites/default/files/Rules_of_Conduct.pdf) [<https://perma.cc/X9KZ-F8JK>].

making purposes, there are two areas of legal ethics that would be valuable to blockchain technology: bias and conflicts of interest.<sup>91</sup>

#### A. Bias

Human bias exists in different ways. Explicit bias is “deliberately generated and consciously experienced as one’s own” belief.<sup>92</sup> Explicit bias can be easy to identify based on a person’s comments or actions. Implicit bias, on the other hand, may not be recognized even by the person with the biased beliefs.<sup>93</sup> Every person has some implicit bias, which is “an association or preference that is not consciously generated and is experienced without awareness.”<sup>94</sup> These biases impact our decisions, especially snap decisions made quickly without much forethought.<sup>95</sup>

When biases affect the decision-making processes of individuals in a position of power, such as judges, the consequences can be harmful.<sup>96</sup> Recognizing this risk, ethics codes for judges prohibit actions based on bias. Judges are prohibited from manifesting bias, prejudice, or “harassment, including but not limited to [actions] based upon race, sex, gender, religion, national origin, ethnicity, disability, age, sexual orientation, marital status, socioeconomic status, or political affiliation.”<sup>97</sup> Violation of these rules can result in disciplinary proceedings for lawyers and judges, including extreme measures such as loss of one’s bar license<sup>98</sup> or removal from the bench.<sup>99</sup>

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<sup>91</sup> It is beyond the scope of this article to create a fully drafted code of conduct for state adoption.

<sup>92</sup> J. Bernice B. Donald & Sarah E. Redfield, *Framing the Discussion*, in ENHANCING JUSTICE, REDUCING BIAS 5, 14 (Sarah E. Redfield ed., 2017).

<sup>93</sup> Michele Benedetto Neitz, *Pulling Back the Curtain: Implicit Bias in the Law School Dean Search Process*, 49 SETON HALL L. REV. 629, 656 (2019).

<sup>94</sup> Donald & Redfield, *supra* note 92, at 14.

<sup>95</sup> For a detailed discussion of implicit bias, see Neitz, *supra* note 93, at 656; *see also* Donald & Redfield, *supra* 92.

<sup>96</sup> *See* Michele Benedetto Neitz, *Socioeconomic Bias in the Judiciary*, 61 CLEV. ST. L. REV 137 (2013).

<sup>97</sup> MODEL CODE OF JUD. CONDUCT r. 2.3 (AM. BAR ASS’N 2014).

<sup>98</sup> *See* WASH. REV. CODE § 2.48.220 (2019). For an example of a judge removed from the bench for inappropriate conduct, see Wendy Davis, *Bullying*

Bias is already making headlines in the field of technology, including hiring bias in tech companies<sup>100</sup> and bias in the development of AI and machine learning.<sup>101</sup> But the bias at issue here relates to the potential biases of the aforementioned “agents of influence” in public blockchains.

For example, knowing that each person holds implicit (and potentially explicit) biases that influence decision-making, how can we know what the biases of Ethereum core developers or the Libra Association may be? If they hold implicit biases against a certain group, these biases may result in members giving more weight to one member’s suggestion than to another’s. For example, the Libra Association’s exclusion of smaller, less successful start-up entrepreneurs may suggest that the wealthy and powerful members of the Libra Association hold socioeconomic biases. In fact, by not even granting Founding Member status to non-elite corporations and nonprofits, the Libra Association is starting out with poor optics that could be interpreted as a display of bias.

Some may argue that the use of disguised identities online helps to reduce biases, since it may be difficult to discern a person’s gender or racial identity or socioeconomic status. Pseudonymity is one of the key attributes of blockchain.<sup>102</sup> However, while this may be true for most aliases, many of these agents of influence meet regularly online and in-person at conferences. The use of aliases, in this sphere, does not guarantee anonymity.

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*from the Bench: A Wave of High-profile Bad Behavior has Put Scrutiny on Judges*, ABA J. (Mar. 1, 2019), <http://www.abajournal.com/magazine/article/bullying-from-the-bench> [<https://perma.cc/NQ9K-Z7WG>].

<sup>99</sup> See MODEL CODE FOR JUD. DISCIPLINARY ENFORCEMENT r. 6(2)(1) (AM. BAR ASS’N 2011).

<sup>100</sup> Gregory Mone, *Bias in Technology*, 60 COMM. OF THE ACM 19–20 (Jan. 2017), <https://cacm.acm.org/magazines/2017/1/211099-bias-in-technology/abstract> [<https://perma.cc/44UD-H8LC>] (discussing the lack of diversity in the tech work force).

<sup>101</sup> Karen Hao, *This is How AI Bias Really Happens—and Why It’s so Hard to Fix*, MIT TECH. REV. (Feb. 4, 2019), <https://www.technologyreview.com/s/612876/this-is-how-ai-bias-really-happensand-why-its-so-hard-to-fix/> [<https://perma.cc/AK8J-7CW>].

<sup>102</sup> Lapointe & Fishbane, *supra* note 88, at 9.

The potential for bias therefore does exist on the blockchain, as it does in all areas where humans make decisions. The problem is not the presence of biases; the problem is the potential for biases to influence “in a discriminatory way the contributions accepted in a project.”<sup>103</sup> States should therefore consider including prohibition of bias in an ethical code of conduct for blockchain technologies. Like the rule for judges, this prohibition should include bias based on “race, sex, gender, religion, national origin, ethnicity, disability, age, sexual orientation, marital status, socioeconomic status, or political affiliation.”<sup>104</sup>

### *B. Conflict of Interest*

The ABA Model Rules define a lawyer’s conflict of interest, in part, as “a significant risk that the representation of one or more clients will be materially limited by the lawyer’s responsibilities to another client, a former client or a third person or by a personal interest of the lawyer.”<sup>105</sup> Judges are held to a higher standard, as they are required to conduct their “personal and extrajudicial activities to minimize the risk of conflict with the obligations of judicial office.”<sup>106</sup> The legal ethics scheme is most concerned with the potential of a conflict of interest to benefit the lawyer at the expense of the client.

How could there be potential conflicts of interest on public blockchains? If the blockchain was completely decentralized, with no agents of influence, one could argue that conflicts of interest are irrelevant. After all, if no one person or node has too much power, an individual’s conflict of interest would not have the potential of harming other users.

However, given the heavy influence of only a few agents of influence, conflicts of interest are much more likely to arise. At the moment, there is no way for users of these platforms to know whether the people influencing the code design underlying these

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<sup>103</sup> Jon Evans, *On the War Between Hacker Culture and Codes of Conduct*, TECH CRUNCH (Mar. 5, 2016), <https://techcrunch.com/2016/03/05/how-we-may-mesh/> [https://perma.cc/8XGT-QEX3].

<sup>104</sup> MODEL CODE OF JUD. CONDUCT r. 2.3(C) (AM. BAR ASS’N 2011).

<sup>105</sup> MODEL CODE OF PROF’L CONDUCT r. 1.7(a)(2) (AM. BAR ASS’N 2019).

<sup>106</sup> MODEL CODE OF JUD. CONDUCT Canon 3 (AM. BAR ASS’N 1994).



technologies truly have the best interests of the platform's users at heart. This is a particular problem for Facebook, given its checkered history where it comes to protecting users' data.<sup>107</sup>

Some may challenge this idea by arguing that all users and developers of cryptocurrencies have the same goal: elevating the value of the currency. While this may be true, it is not hard to imagine a scenario whereby some developers are heavily invested in other currencies. These developers may have an interest in seeing the devaluing of rival currencies. In addition, one could argue that most users of these platforms recognize that purchasing new currencies has some level of risk attached to it. Accordingly, there is an ongoing debate over whether this area demands a heightened standard such as a fiduciary duty.<sup>108</sup>

But it does make sense to have, at a minimum, a prohibition on conflicts of interest for the agents of influence who have such a heavy dominance on the design of public blockchains. For example, if a code bug or hack locks up hundreds of millions of dollars of funds owned by the core developers, it would be very hard for them to argue there is no conflict when choosing between taking the route of a hard fork or not.<sup>109</sup> Core developers or Libra Association members may also have investments in other projects or personal conflicts affecting their coding decisions. Prohibiting conflicts of interest—or at least requiring the disclosure of such conflicts—could ensure that all agents of influence truly do have the same goal.

Moreover, minimizing conflicts of interest in this area may have the added value of reinforcing public trust in blockchain currencies. While it is natural for members of the public to fear new technologies, more people may be willing to invest in public

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<sup>107</sup> Herb Weisbaum, *Trust in Facebook has Dropped by 66 Percent Since the Cambridge Analytica Scandal*, NBC NEWS (Apr. 18, 2018), <https://www.nbcnews.com/business/consumer/trust-facebook-has-dropped-51-percent-cambridge-analytica-scandal-n867011> [<https://perma.cc/WU4Q-RE22>].

<sup>108</sup> See generally Walch, *supra* note 13 (arguing against the imposition of fiduciary duties on public blockchain protocol developers); but see Raina S. Haque, et al., *Blockchain Development and Fiduciary Duty*, 2 STANFORD J. BLOCKCHAIN L. & POL'Y 139 (2019).

<sup>109</sup> See *supra* Section II.C. 1 and 2.

blockchains if they knew states prohibited bias and conflicts of interest in this industry.

## V. CHALLENGES TO CREATING A BLOCKCHAIN CODE OF CONDUCT

Although the implementation of a code of ethics would bring advantages to the blockchain industry, designing and implementing a blockchain code of conduct does present challenges. This is especially true given the originality of the blockchain industry.

### A. *The Power of the Miners*

In a public blockchain cryptocurrency, miners of the currency can just walk away if they do not like what is happening on a particular blockchain. Indeed, miners can choose to mine any coin. Thus, if it appears that bias or conflict of interest exists and will impact the success of a public cryptocurrency blockchain, miners will vote with their feet and move onto another coin. This type of exodus would have a substantial impact on the currency of an affected blockchain, causing it to lose value quickly.

In turn, some may argue that there is no need to have a code of conduct, because miners can just leave if they sense an ethical problem (especially one that might affect their profits). However, as we have seen with the problems faced by large “Big Tech” companies, a scheme relying on a market-based solution to ethical issues will eventually fail.<sup>110</sup> Indeed, as “one ethical quandary after another has hit [big tech companies’] profoundly ill-prepared executives, their once-pristine reputations have fallen like palm trees in a hurricane.”<sup>111</sup> Leaders of the nascent blockchain industry, who are working to refute early public images of cryptocurrency as a method for fraud,<sup>112</sup> can ill-afford the loss of the industry’s reputation due to ethical scandals.

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<sup>110</sup> See Kara Swisher, *Who Will Teach Silicon Valley to Be Ethical?*, N.Y. TIMES (Oct. 21, 2018), <https://www.nytimes.com/2018/10/21/opinion/who-will-teach-silicon-valley-to-be-ethical.html> [<https://perma.cc/9WX5-VQ4N>].

<sup>111</sup> *Id.*

<sup>112</sup> IG Analyst, *The Silk Road to Bitcoin: Has the Crypto Escaped its Dark Past?*, IG (Feb. 5, 2018), <https://www.ig.com/au/trading-opportunities/the-silk->

### B. Backlash

There would likely be a strong reaction to a state's implementation of a code of conduct for blockchain platforms. In fact, "[t]here are still developers who vehemently oppose the entire idea of codes of conduct."<sup>113</sup> Blockchain developers who embrace the libertarian ideal will argue that implementation of a common standard goes against the very freedoms that make blockchain a revolutionary technology.

We can draw a parallel to the "Contributor Covenant Code of Conduct" drafted in 2014 for open source projects. Computer programmer Coraline Ada Ehmke recognized that "bad or questionable behavior" was commonplace among open source developers, and created an optional Code of Conduct for the open source community.<sup>114</sup> The Code includes a list of Standards with "[e]xamples of behavior that contributes to creating a positive environment," as well as "[e]xamples of unacceptable behavior by participants."<sup>115</sup> In anticipation of objections, the drafters of the Code also included a list of Frequently Asked Questions. The questions reveal what some members of the community may really believe about ethical guidance ("Are codes of conduct a mechanism for turning project governance over to 'social justice warriors'?"), and should therefore be reviewed by anyone involved in drafting a code of conduct in this field.<sup>116</sup>

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road-to-bitcoin--has-the-crypto-escaped-its-dark-past--41990-180205  
[<https://perma.cc/8C48-THVR>].

<sup>113</sup> Klint Finley, *The Woman Bringing Civility to Open Source Projects*, WIRED (Sept. 26, 2018), <https://www.wired.com/story/woman-bringing-civility-to-open-source-projects/> [<https://perma.cc/4DVA-Z4ND>].

<sup>114</sup> *Id.*

<sup>115</sup> *Contributor Covenant Code of Conduct*, CONTRIBUTOR COVENANT, <https://www.contributor-covenant.org/version/1/4/code-of-conduct> [<https://perma.cc/V2Z3-WAEW>] (last visited July 18, 2019).

<sup>116</sup> *Contributor Covenant Code of Conduct FAQ*, CONTRIBUTOR COVENANT, <https://www.contributor-covenant.org/faq> [<https://perma.cc/6YNJ-ND5U>] (last visited July 18, 2019). Other questions include "Won't a code of conduct have a negative effect on the end product?" and "Doesn't this code of conduct just promote political correctness?" *Id.*

Although the Contributor Covenant has been adopted by tens of thousands of open source projects,<sup>117</sup> it is not without critics. Those who oppose codes of conduct in general, and the Contributor Covenant in particular, are concerned that such rules would “be used to police their speech away from their open source work.”<sup>118</sup> The creator of Linux, Linus Torvald, used more flavorful language to resist codes of conduct, telling Wired Magazine that “trying to come up with some ‘code of conduct’ that says that people should be ‘respectful’ and ‘polite’ is just so much crap and bullshit.”<sup>119</sup> Torvald has since apologized for these remarks,<sup>120</sup> but opposition to the implementation of any sort of ethical standards is still prevalent in the blockchain community.<sup>121</sup> If states can work with industry leaders to draft regulations, as New York, California, and other states are starting to do,<sup>122</sup> developers may be more willing to create cultures that adhere to ethical standards.

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<sup>117</sup> Finley, *supra* note 113; *see also* *Contributor Covenant Adopters*, CONTRIBUTOR COVENANT, <https://www.contributor-covenant.org/adopters> [<https://perma.cc/CJ37-GUV8>] (last visited July 18, 2019).

<sup>118</sup> Finley, *supra* note 113.

<sup>119</sup> *Id.*

<sup>120</sup> *Id.*

<sup>121</sup> *See, e.g., Why the Open Code of Conduct Isn't for Me*, DANCERS CODE (July 25, 2018), <https://dancerscode.com/2018/07/25/why-the-open-code-of-conduct-isnt-for-me/> [<https://perma.cc/36FP-7FMR>]. Github announced that it would adopt an open code of conduct authored by the TODO Group, but the TODO Group has since ceased work on the code of conduct; *see id.*; *see also* *Followup: Open Code of Conduct*, TODO GROUP (Feb. 2, 2016), <https://todogroup.org/blog/followup-open-code-of-conduct/> [<https://perma.cc/4Z2A-BFRD>].

<sup>122</sup> *See* Aaron Wood, *New York State Digital Currency Task Force Appoints New Members*, COINTELEGRAPH (July 24, 2019), <https://cointelegraph.com/news/new-york-state-digital-currency-task-force-appoints-new-members> [<https://perma.cc/YJE6-ZWQ6>]; *see also* *Blockchain Working Group*, CAL. GOV'T OPERATIONS AGENCY, <https://www.govops.ca.gov/blockchain/> [<https://perma.cc/DP73-XFKG>] (last visited Aug. 23, 2019); William Foxley, *New Jersey Signs Blockchain Task Force Program Into Law*, COINDESK (Aug. 9, 2019), <https://www.coindesk.com/new-jersey-signs-blockchain-task-force-program-into-law> [<https://perma.cc/DX5Z-V9TT>].

### *C. Enforcement*

If states or the Uniform Law Commission were to adopt ethical standards for blockchain platforms and companies, the next logical question is: how will they be enforced? For example, will developers lose their place of influence if they act in a biased manner or have conflicts of interest? How would the Libra Association handle a founding member with a conflict of interest?<sup>123</sup> In addition, there are jurisdictional challenges to enforcement, as blockchains are global and one country or state's laws will not apply universally.

The topic of effective enforcement for ethical standards in this new field is in need of further research. Countries and states that are in a position to lead the way in the area of ethical regulation may serve as pilots for other jurisdictions. At a minimum, the problem of enforcement does reinforce the importance of blockchain industry support of and commitment to a successful code of conduct.

## VI. CONCLUSION

Blockchain technology, like its predecessors the railroad and the Internet, will revolutionize the world. Although this new industry is rooted in the concept of decentralization, blockchains do rely upon certain agents of influence for decision-making purposes. Recognizing this reality, this article is intended to spark a debate regarding the need for ethical rules tailored to this new technology. States drafting blockchain laws should engage in this debate and consider incorporating particular ethical rules borrowing from existing codes of conduct for lawyers. Specifically, these rules should include the prevention of bias and conflict of interest provisions. Since there can be no doubt that

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<sup>123</sup> Libra's White Paper states that a Founding Member who does not comply with "eligibility criteria" can be removed by a supermajority vote of the council, but it is noteworthy that Facebook has not anticipated ethical issues arising among its Founding Members. *See* LIBRA WHITE PAPER, *supra* note 11, at 8.

blockchain technology is here to stay, now is the time to ensure this technology is developed in an ethical manner.<sup>124</sup>

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<sup>124</sup> Werbach, *supra* note 3, at 512 (“These are still early days [for the blockchain] . . . as big as the market has grown, there is far less at stake . . . than there will be in three, or five, or ten years.”).