Softwar: A Novel Theory on Power Projection and the National Strategic Significance of Bitcoin

by

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M.S. Astronautical Engineering, Air Force Institute of Technology (2017)
B.S. Mechanical Engineering, Baylor University (2010)

Submitted to the System Design and Management Program
in Partial Fulfillment of the Requirements for the Degree of

Master of Science in Engineering and Management

at the

Massachusetts Institute of Technology

February 2023

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System Design and Management Program
January 20, 2023

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ABSTRACT

Current analysis of Bitcoin's **underlying proof-of-work technology is almost exclusively based on financial, monetary, or economic theory. Recycling the same theoretical frameworks when performing hypothesis-deductive analysis of Bitcoin has the potential to create systemic-level analytical bias which could negatively impact public policy making efforts and could even pose a threat to US national security.**

This thesis introduces a novel theoretical framework for analyzing the potential national strategic impact of Bitcoin as an electro-cyber security technology rather than a peer-to-peer cash system. The goal of this thesis is to give the research community a different frame of reference they can utilize to generate hypotheses and deductively analyze the potential risks and rewards of proof-of-work technologies as something other than strictly monetary technology. The author asserts it would be beneficial for researchers to explore alternative functionality of proof-of-work technologies to eliminate potential blind spots, provide a more well-rounded understanding of the risks and rewards of proof-of-work protocols like Bitcoin, and positively contribute to the development of more informed public policy in support of the March 2022 US Presidential Executive Order on Ensuring the Responsible Development of Digital Assets and the May 2022 US Presidential Executive Order on Improving the Nation's Cybersecurity.

Utilizing a grounded theory methodology, the author combines different concepts from diverse fields of knowledge (e.g. biology, psychology, anthropology, political science, computer science, systems security, and modern military strategic theory) to formulate a novel framework called "Power Projection Theory." **Based on the core concepts of Power Projection Theory, the author inductively reasons that proof-of-work technologies like Bitcoin could not only function as monetary technology, but could also (and perhaps more importantly) function as a new form of electro-cyber power projection technology which could empower nations to secure their most precious bits of information (including but not limited to financial bits of information) against belligerent actors by giving them the ability to impose severe physical costs on other nations in, from, and through cyberspace. The author calls this novel power projection tactic** "softwar" and **explores its potential impact on national strategic security in the 21st century. Like most grounded theory research efforts, the primary deliverable of this thesis is a novel theory rather than deductive analysis of a hypothesis derived from existing theory.**

Thesis Supervisor: Joan Rubin
Executive Director, System Design & Management Program

Acknowledgements

First I would like to thank General C.Q. Brown for giving me the courage and top-cover to devote myself to this research topic, and to the Department of the Air Force for entrusting me with this assignment.

I would also like to thank everyone in my personal life who tolerated the amount of time and mental effort I committed to this. You gave me the continual support and confidence I needed to follow through. This endeavor turned out to be more challenging than I expected, in ways that I never would have expected, and your support (plus your sacrifice) played an essential role.

I would like to thank everyone who helped me formulate this grounded theory. When I first indicated my interest in this topic, I could not have imagined the amount of feedback I would receive. I feel very thankful for everyone who took the time to listen to me and challenge my reasoning. Your discourse helped me question my biases and pushed me to formulate the structure of the theory as it exists today. I owe the success of this research effort to you. Thank you for your sincere feedback. I look forward to future discussion and debate.

It's impossible for me to list everyone **who I wish to thank by name, but a few specific people I want to give thanks to are as follows: Adam Back, Greg Foss, Robert Breedlove, Jeff Booth, Preston Pysh, Level39, Michael Saylor, Natalie Smolenski, Asher68W, Mike Alfred, Dennis Porter, Jason Williams, Luke Gromen,** Jim O'**Flaherty, SusieB, Max and Stacie Keiser, Peter McCormack, Anthony, Joe, and John Pompliano, Natalie Brunell, Ben Prentice, Joe Burnett, Matthew Pines, Erin Malone, Brandon Quittem, Brian Harrington, Tomer Strolight, George Peacock, Nathan Perry, Cory Swan, Dylan LeClair, Tuur Demeester, MarbellaHODL, Bobby von Hodlwitz, Ck_SNARKs, Mike Hobart, Wealth Theory, Alex Gladstein, Joseph Aguirre, Ghazaleh Victoria, Tarun Chattoraj, Eric Hart, Samson Mow, Phil Dubois, Jimmy Song, Nik Bhatia, Kelly Lannan, Dan Held, Poens, w_s_bitcoin, Mark Moss, and many, many others. It has truly been a pleasure engaging with you.**

I would also like to thank Rebecca for the custom drawings she provided.

Biography

Major Jason "Spook" Lowery **is a Department of Defense (DoD) sponsored US National Defense Fellow, Department of the Air Force Fellow, MIT System Design and Management Fellow, astronautical engineer, and active-duty technology and innovation officer in the US Space Force (USSF). Prior to attending MIT, Jason served as the director of operations for the USSF Second Space Launch Squadron. Before that, he was a founding member of the cadre of officers who stood up USSF, serving as the deputy chief of the** commander's action group **for USSF Space Operations Command and US Space Command (USSPACECOM) Combined Force Space Component Command (CFSCC). Jason transferred into USSF from the US Air Force (USAF), where he served as an all-source intelligence analyst and subject matter expert in electronic warfare, blast and ballistics effects, and space weapon system design. Jason has a decade of experience serving as a technical advisor for US senior officials, to include the Office of the President of the United States (OPOTUS), Office of the Secretary of Defense (OSECDEF), and the Office of the Director of National Intelligence (ODNI). He has a** master's degree in astronautical engineering from **Air Force Institute of Technology, Ohio and a** bachelor's degree in **mechanical engineering from Baylor University, Texas.**

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