Disassembling the Trust Machine:
An introduction to a political economy of blockchain

Running August 19th – October 22nd 2018

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Week 1: Introduction to Disassembling the Trust Machine
We will begin the seminar series by carefully disassembling the components of the Bitcoin proof-of-work algorithm in order to get a first glimpse of the technical, economic and political concepts, techniques, assumptions and ethics that are mobilized in order to make the protocol work. The seminar introduces the core aspects of blockchain and cryptoeconomics from a radically interdisciplinary angle, and so is an essential introduction – for both newbies as well as those who are already working in the fields of, or familiar with, blockchain, cryptocurrencies and cryptoeconomics.

In the seminar we will explore and discuss the following questions:
How are blockchain and consensus algorithms “political”? How are they “economic”? What is cryptography? What is cryptoeconomics? What is political cryptoeconomics? How and why does blockchain address “trust”?

Readings:
(Mexico City & Berlin)


Week 2: Technology, politically

Extrastatecraft / cyborg / stack / apparatus / assemblage / delegation / translation / automation / sedimentation. These concepts are ways in which theorists have sought to relate and understand networks, infrastructure, technology and computation as existing within and as part of the social, political and natural world. Despite these efforts science and technology is still often understood as existing in an “objective” outside of the “subjective” messiness of human social and political life. In this seminar we will get familiar with conceptual tools that allow us to understand the nature of technology as part of the world. We will explore the techno-political implications of different conceptual understandings, in particular the work of Karen Barad, trying out the concepts on our case and discuss what they might have to offer for an understanding of blockchain and cryptoeconomics.

In the seminar we will explore and discuss the following questions:

In what ways is technology “political”? How is it “social” and “historical”? How do these explanations account for scientific objectivity? Why do some things, devices, protocols simply “work” and others not? What are the effects of difference conceptual understandings?

Readings:

Set 1: (How) is it possible to know the politics of emergent, network systems?


Set 2: How do we understand science and technology as part of the social and political world?


Week 3: Blockchain, politically

The Bitcoin whitepaper was published just as the financial crisis began to ripple across the world, eventually turning into a sovereign debt crisis. For many, then, Bitcoin came to represent the possibility of a different kind of money and a different kind of economic system. The main proposition of Nakamoto's consensus algorithm (and most blockchain projects) is to solve the problem of authority and control through a trustless, decentralized protocol. This has led to several understandings of the potential of the technology, from the possibility of communities taking control over their own economic and monetary policies, developing a plethora of different protocols with visions of plural monetary eco-systems, to a “systems primacy” in which the problem of corrupt systems is considered solved by replacing human governance with what are considered a more neutral, unbiased and objective techno-economic means. In this seminar we will look at some of the critiques of debt-based money creation and fractional reserve banking that attracted people from across the political spectrum to Bitcoin and the potential of cryptocurrencies, and discuss some of the ways in which these hopes are sought realized. “Systems primacy” as a tendency will be discussed in relation to the problem of “primacy” more generally - ways in which understandings of objectivity and subjectivity used in order to mobilize economic theory and mathematics as a deterministic and indisputable ground on which to build new techno-political systems.

In the seminar we will explore and discuss the following questions:

What were the main criticisms of fractional reserve banking and the financial system? Are “primacy” and “plurality” useful political distinctions to make sense of these critiques? How are markets and technology understood as objective and neutral? How are they not?

Readings:

Set 1: What was the political economic climate and cultures that gave rise to Bitcoin?


Set 2: What are some of the political economic assumptions encoded into blockchain and Bitcoin?


**Week 4: Money, politically**

*Visiting lecture by financial/ fintech author Brett Scott*

In this seminar we will take a closer look at the economic and monetary theories that are encoded and operationalized in cryptoeconomics – and the possibilities for and potential effects of incorporating heterodox economic theories into these systems. Author and financial activist Brett Scott will give an overview of some of the main economic and monetary assumptions that tend to be encoded in cryptocurrencies today. We will discuss their historical origin and the political and conceptual assumptions that they draw on. We will also look at projects that incorporate other economic ideas and discuss the possibilities and potential effects of these.

*In the seminar we will explore and discuss the following questions:*

How does cryptocurrencies have “value”? What are the monetary and economic assumptions encoded in blockchain? What scope is there for encoding different monetary ideas and values? Is it a mistake to understand cryptocurrencies as “money”?

**Readings:**


What, why and how Economic Space Agency

Cryptocurrency and its discontents

**Week 5: Cryptoeconomic governance – tracing how things come to matter**

In this seminar, the shifting understanding of what matters in blockchain will be discussed and explored. Encoding and enforcing a set of monetary and economic ideas through an immutable protocol was supposed to have made governance and politics obsolete. Only after deep-seated disputes about protocol changes, major hacks, exploits took place in the blockchain community did the governance of protocols come center-stage in the design of decentralized systems. We will discuss how code is written, deployed, governed and run in decentralized systems, and questions around what is considered important or not in that process.

*In the seminar we will explore and discuss the following questions:*

How are protocols governed in decentralized systems? Who gets to determine what and who is important and what matters in a decentralized system? What is considered to “not matter” and what are the effects of this?

**Readings:**

**Set 1: Forking as dissensus - how things come to matter in blockchain communities**


biggest-protocol-upgrade-became-reality/

Vollmer, Jan. 2016. The Biggest Hacker Whodunnit of the summer.

Zamfir, Vlad. 2016. The DAO Hard Fork, and the Negotiation that Couldn’t Happen

Ethereum EIP process, Github https://github.com/ethereum/EIPs
Ethereum Classic ECIP process, Github https://github.com/ethereumproject/ECIPs

Set 2: Decentralized Governance?


Zamfir, Vlad. Against on chain governance.
https://medium.com/@Vlad_Zamfir/against-on-chain-governance-a4ceacd040ca

https://github.com/bitcoin/bips/blob/master/bip-0001.mediawiki

https://github.com/bitcoin/bips/blob/master/bip-0002.mediawiki#Rationale-3

Vitalik Buterin tweet storm about proof-of-stake, Ethereum Casper debates:
https://twitter.com/VitalikButerin/status/1029900695925706753

General readings:
Satoshi Oath
http://ipfs.b9lab.com:8080/ipfs/QmXysWEAexXQqYZhTGpECvksnaBkSEWHdGhM7vNeHxue2g/

Bitcoin developers mailing list https://lists.linuxfoundation.org/mailman/listinfo/bitcoin-dev
Week 6: Consensus algorithms politics and design

Visiting lecture - Rachel Rose O'Leary, writer for CoinDesk

The Bitcoin proof-of-work algorithm inspired the emerging interdisciplinary field of cryptoeconomics along with a plethora of new blockchain applications and consensus protocols. In this seminar, Rachel O'Leary will give an overview of consensus algorithms and the forms of disputes, governance issues and concerns that have given rise to them. We will discuss how different protocol designs give clues about what matters to the communities that have developed them – for example energy consumption, centralizing tendencies in mining, distribution of wealth, and how these implicitly point towards emerging political and ethical perspectives. And most importantly we will map out what matters in consensus algorithm design and the major implications of deciding what is or is not part of the design space.

The seminar will address and discuss the following questions:
What are the main consensus protocols? What main issues do they seek to address? What does this tell us about what matters to the communities that developed them? What is consensus protocol design? What are the limits to the design space?

Readings:


Cynthia Dwork and Moni Naor, Pricing via Processing or Combatting Junk Mail, 1992 http://www.wisdom.weizmann.ac.il/~naor/PAPERS/pvp.pdf


Week 7: Reconfiguring the digital, the physical, scarcity and abundance

Network culture, piracy, hacker ethics, cypherpunk, open source and the political history of peer-to-peer promoted ideas of digital space as making possible a politics of abundance, sharing and fluid identities. Blockchain technology, having emerged from these cultures, nevertheless seeks to establish scarcity in the digital realm, determine and secure private property, define identities, in many ways seeking to reproduce techniques of the state in new technical forms. In this seminar we will trace back the main principles in blockchain through the history of peer-to-peer, and look closer at concepts like decentralization, trustlessness, disintermediation, autonomy, privacy and transparency as they have shifted through the history of peer-to-peer and in particular in their interaction with economic theory in which property and the individual is the basis of a system and systems interactions.

In the seminar we will explore and discuss the following questions:

How and why did peer-to-peer culture and practice develop from a critique of digital scarcity and property to the creation of scarcity and security of property? And what are the effects of this? What are some of the design challenges and political contradictions in the field?

Readings:


Week 8: Emerging political ideas

In this final seminar we will look at some of the emerging political and economic fractions in the space, seeking out contradictions and commonalities and strategic positioning. From futarchy to holocracy, open source/ commons based ideas these political economies will be explored in practice, as they are strategically deployed as function, promise, or strategy across different layers of “the stack”. We will seek to disentangle political cryptoeconomics as it is practiced in three ways, namely the operationalization of political economic ideas for computational purposes; the political economic promises that are made about the function and applications of cryptoeconomic projects; and finally the maneuvering of existing political economic contexts in order to achieve strategic and practical goals. The aim of the final seminar will be to collectively articulate a field of political cryptoeconomics and articulate its main questions and scope.

In the seminar we will explore and discuss the following questions:
What are some of the new political economic ideas emerging in the space? What are the main political economic aims of cryptoeconomics? What should the field of political cryptoeconomics look like?

Readings:

Set 1: “Futarchy" and new configurations of democracy and markets

Hanson, Robin. “Shall We Vote on Values, But Bet on Beliefs ? *.
http://mason.gmu.edu/~rhanson/futarchy.pdf


Set 2: “Current sees” and the sensibility of the political


Interview with Arthur Brock from metacurrency project and Holo
https://www.patreon.com/posts/19911963
Thank you to all the students who participated and engaged with the seminar and the New Centre for Research and Practice, in particular Patrick Schabus and Mohammad Salemy for facilitation and the invitation to run the series.

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