



Oxford Internet Institute
University of Oxford



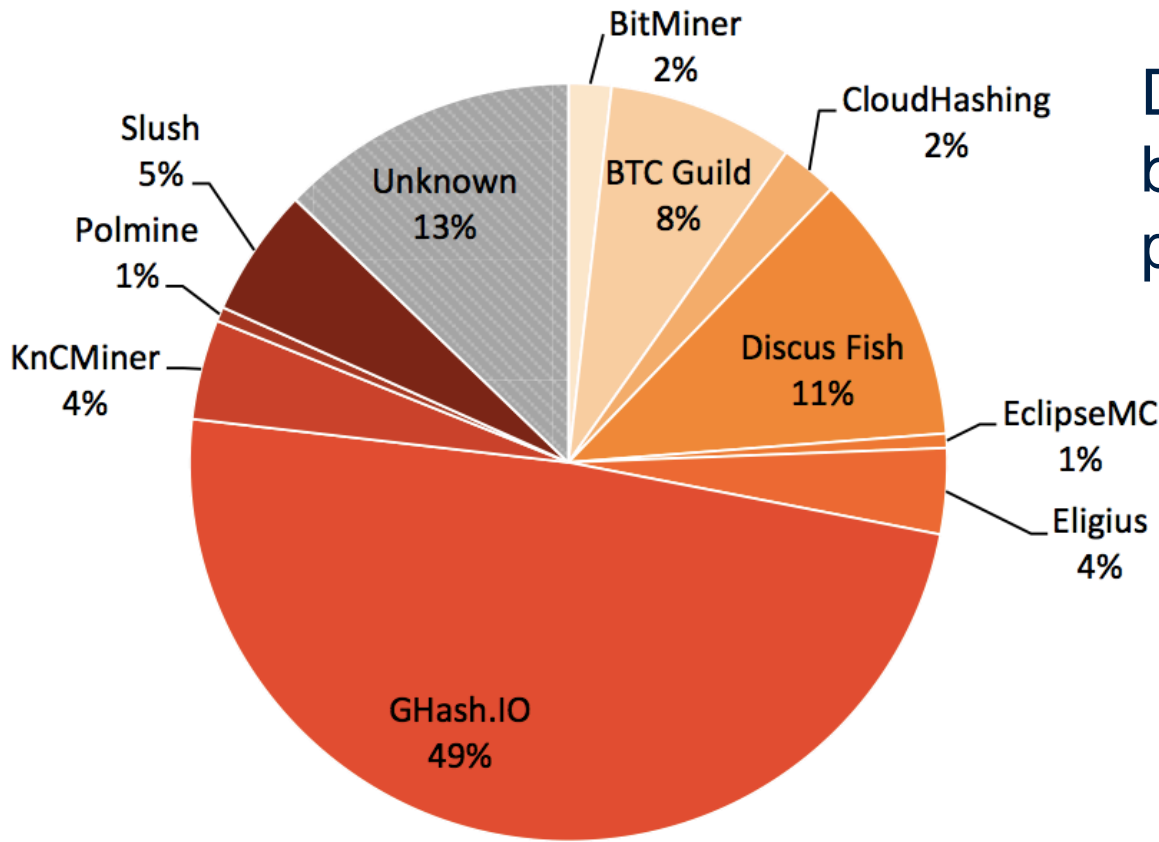
Who controls Bitcoin? Observing power structures through 'breaking points'

Dr Vili Lehdonvirta
Oxford Internet Institute, University of Oxford

Gili Vidan
Department of the History of Science, Harvard University

Breaking point example 1: The 51% problem

Distribution of Bitcoin blocks mined per mining pool on 13 June 2014



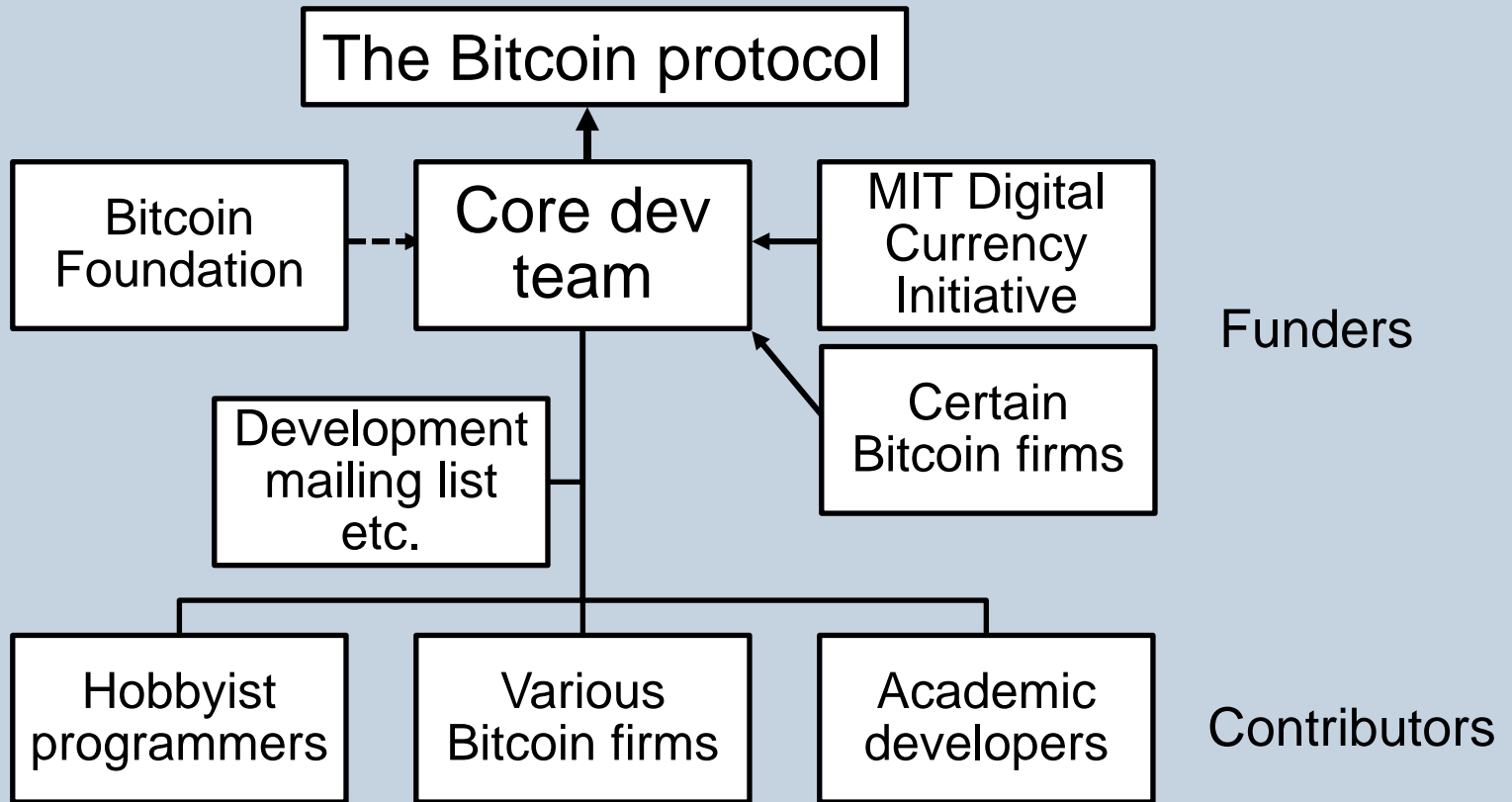
Breaking point example 2: The transaction rate limit

```
static const unsigned int MAX_BLOCK_SIZE = 1000000;
```

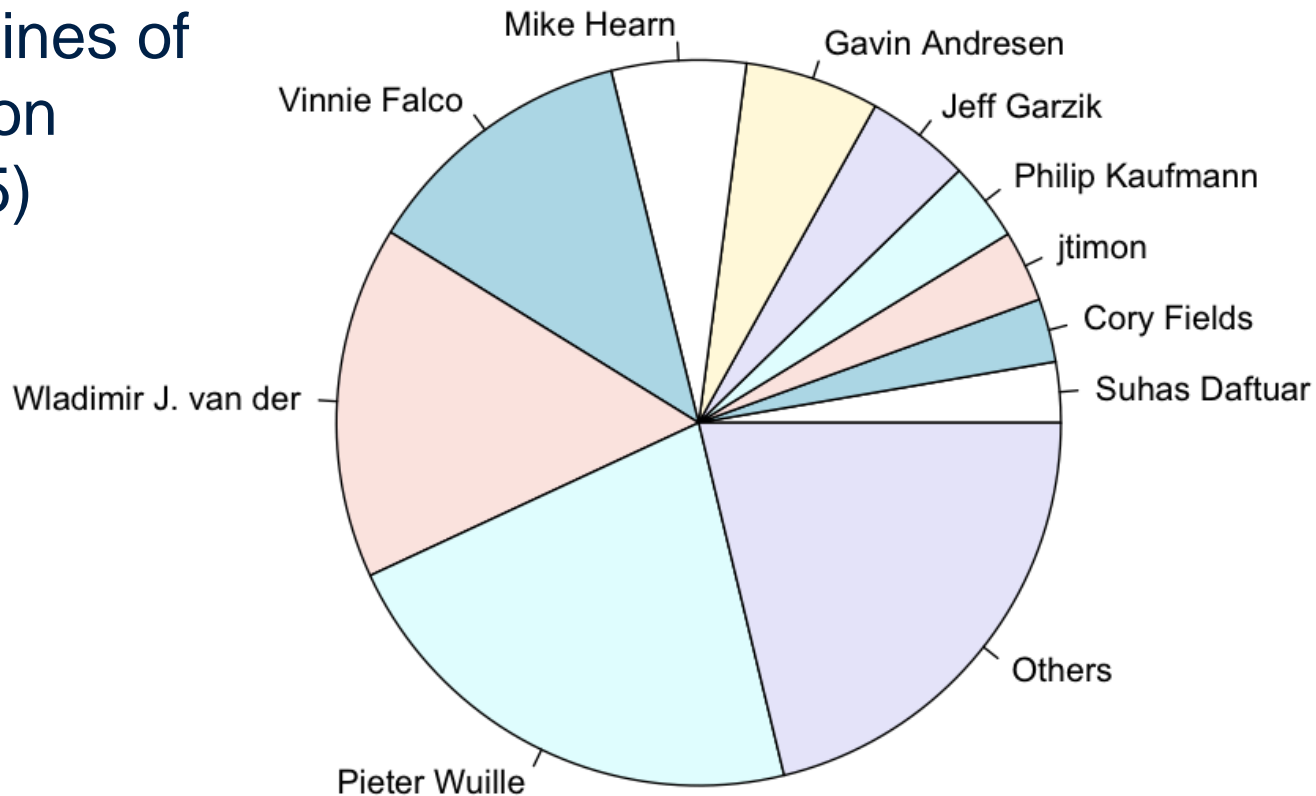
The Bitcoin protocol
static const unsigned int
MAX_BLOCK_SIZE = 1000000;



Core dev
team



Bitcoin Core lines of code by person (14 May 2015)



Summary

- It is not possible to entirely replace human agency with software
 - Key political decisions need to be made by humans
- Who/what institutions is this power entrusted to?
- Where do they derive their legitimacy from?
- Bitcoin's key institutions developed in an ad-hoc manner
 - Current institutions are centralized, multipolar, technocratic
 - If/when Bitcoin's economic importance grows, more robust and inclusive institutions are likely needed