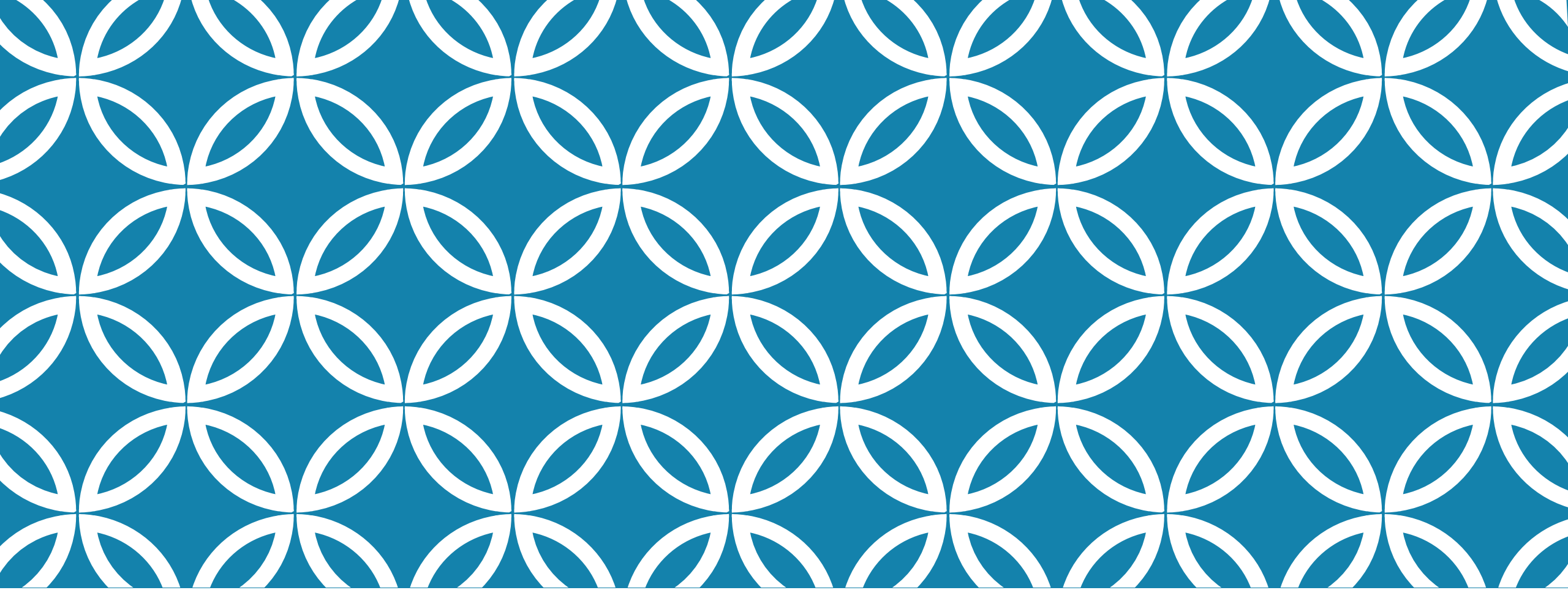


INDIVIDUAL DECISION MAKING IN CYBER SOCIETY: SOCIAL SCIENCE, NETWORKS AND COMPUTER SCIENCE

Paul Ormerod

Amsterdam, July 2019

www.paulormerod.com

OVERVIEW

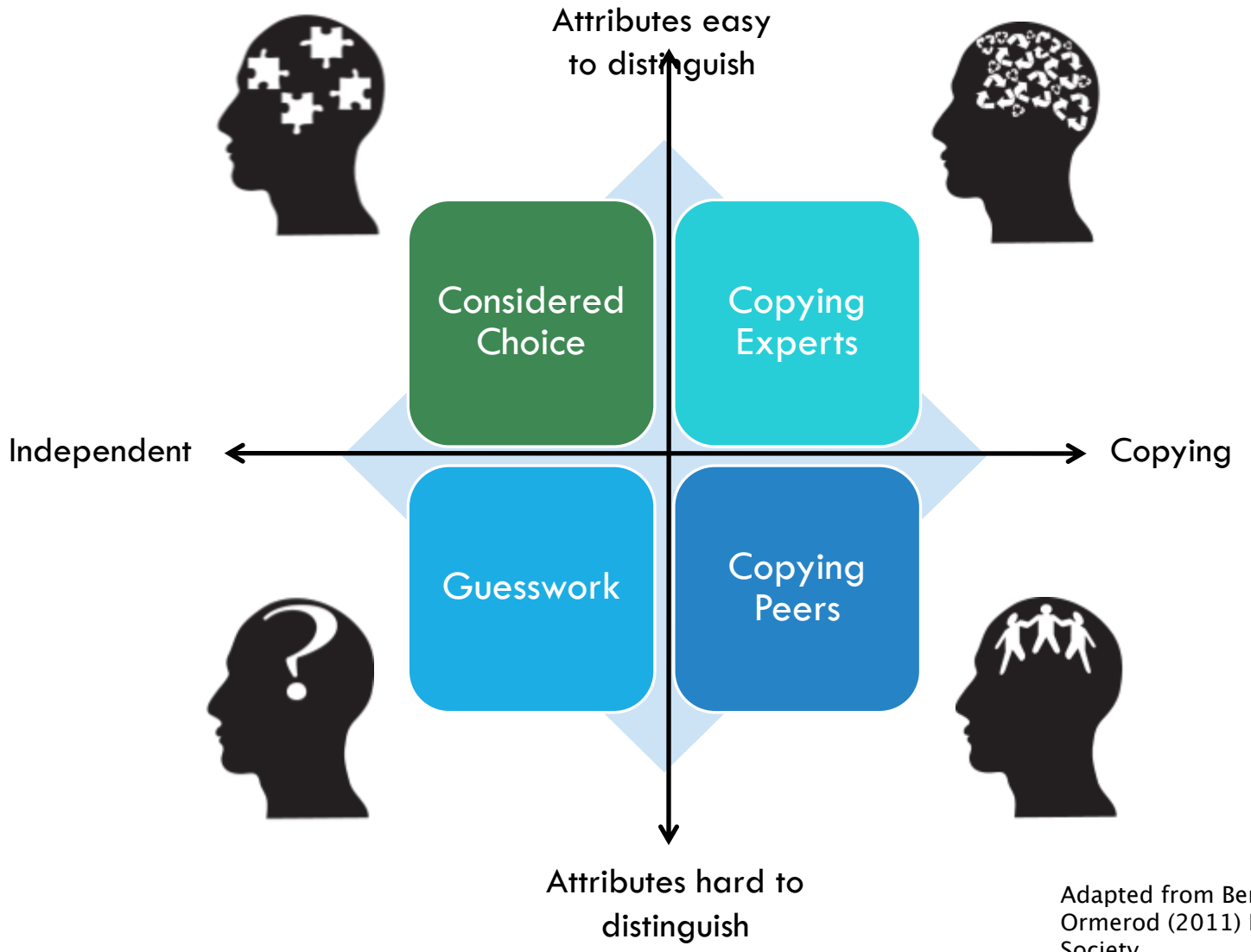
- A key theme of the presentation is the need for genuine multi-disciplinary work in order to understand both the consumer and the economy in the 2020s

- Marshall McLuhan, *Understanding Media*, 1964 (!): "After 3,000 years of explosion… the Western world is imploding... after more than a century of electronic technology, we have extended our central nervous system itself in a global embrace, abolishing both space and time as far as our planet is concerned."

"CYBER SOCIETY" POSES CHALLENGES TO RATIONAL CHOICE MODEL OF ECONOMICS

- Information gathering/processing: "mobile phone" google search gives "about 155 million results"
- Social influence
- Role of emotion in choice – even in financial markets e.g. Andrew Lo *Adaptive Markets*
- Economists are rather sceptical about stated preference (surveys). But can we even rely on revealed preference (actions) ?
- Preferences are not fixed, but evolve

A HEURISTIC CLASSIFIER OF 'RATIONALITY'

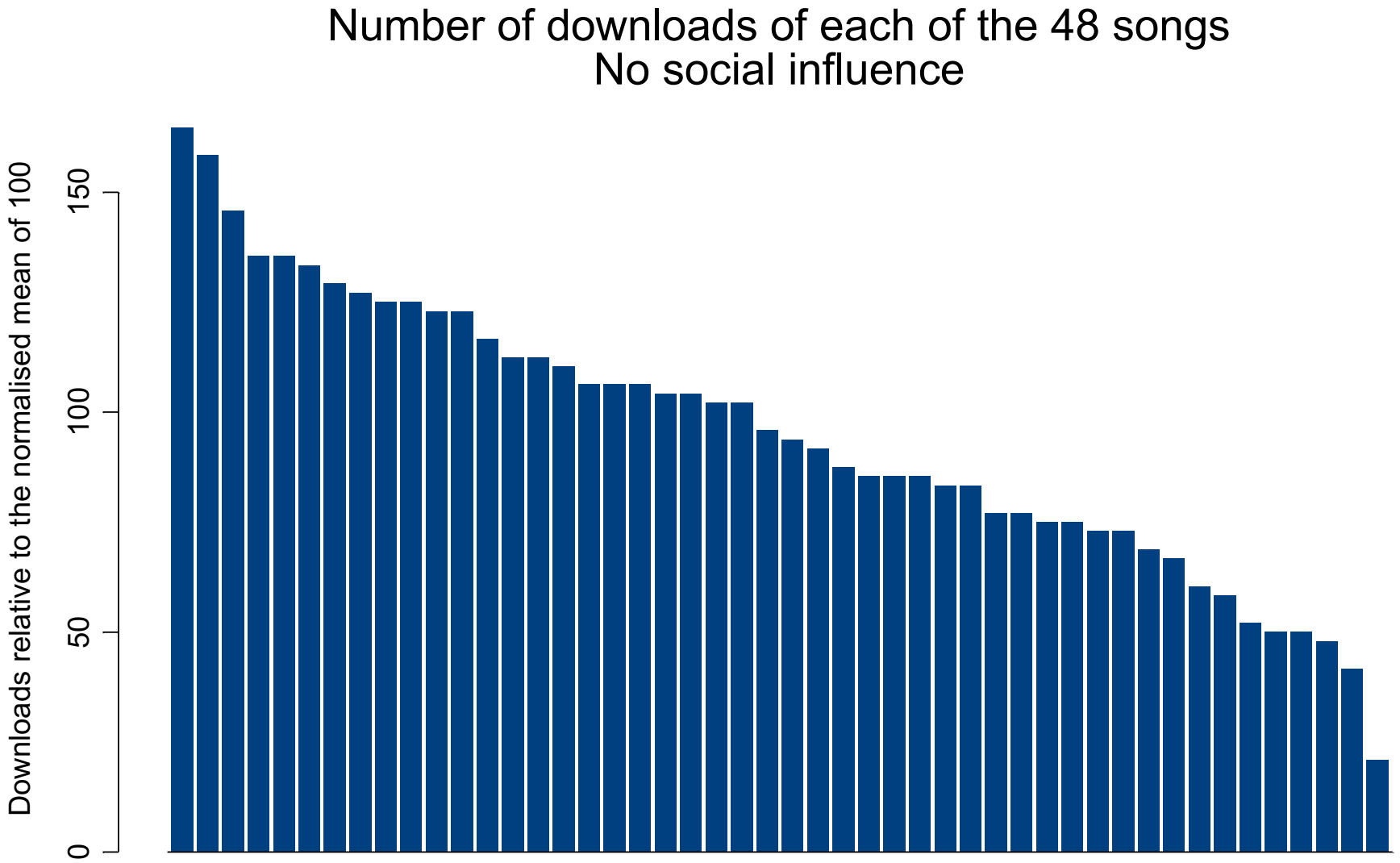


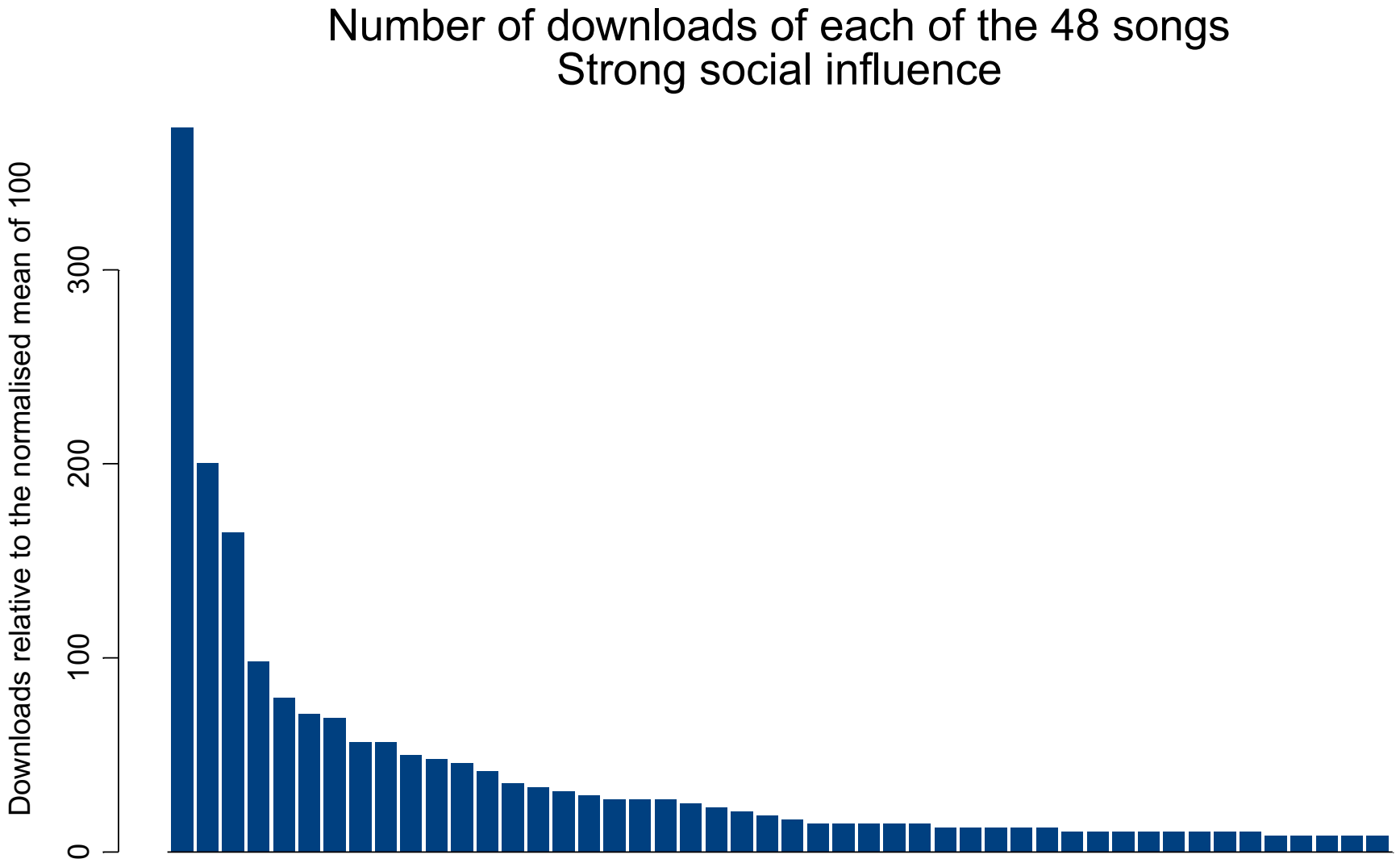
Adapted from Bentley, O'Brien Ormerod (2011) Mind and Society

TWO AREAS OF MAJOR ADVANCE IN SCIENTIFIC KNOWLEDGE IN 21ST CENTURY

Network theory: how behaviour/ideas either spread or are contained on networks

Computer science: mapping actual networks; identifying key nodes (influencers); identifying themes being discussed; emotions revealed; community structure


Number of downloads of each of the 48 songs
No social influence
Downloads relative to the normalised mean of 100
0
50
100
150


Number of downloads of each of the 48 songs
Strong social influence
Downloads relative to the normalised mean of 100
0
100
200
300

SOCIAL NETWORKS AND FINANCIAL SERVICES: P MEADOWS, P ORMEROD, W COOK, NATIONAL INSTITUTE ECONOMIC REVIEW 2004

- Almost one in ten adults in Britain did not use mainstream financial services. Most of them were not in paid employment.
- However, most people without paid work had accounts.
- Using two different data sources, we found that non-consumers of financial services are distinguishable from consumers only by belonging to social networks where financial services usage is relatively low.

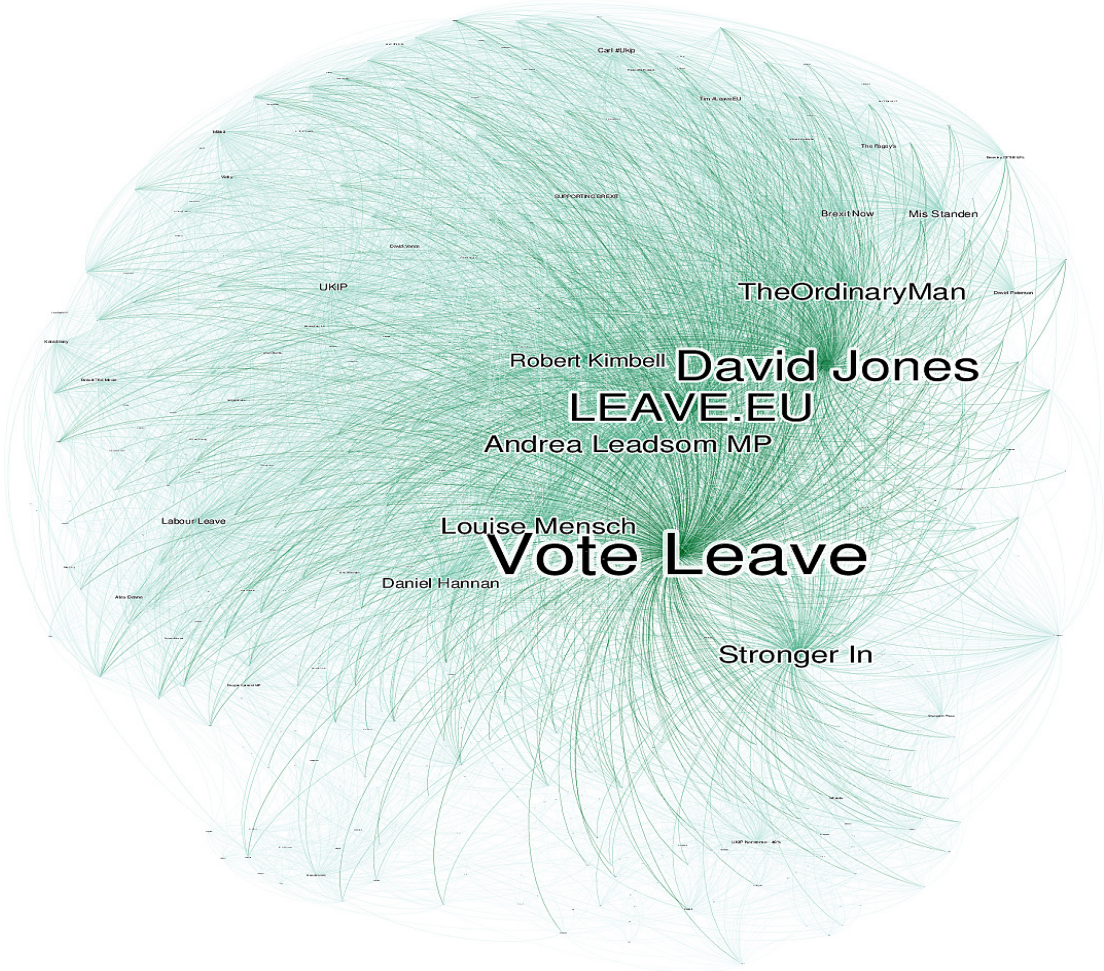
USE OF FINANCIAL SERVICES BY FRIENDS AND FAMILY

	have an account	do not have an account
All/most	87	38
Some/few	6	26
None	2	14
Don’t know	6	21

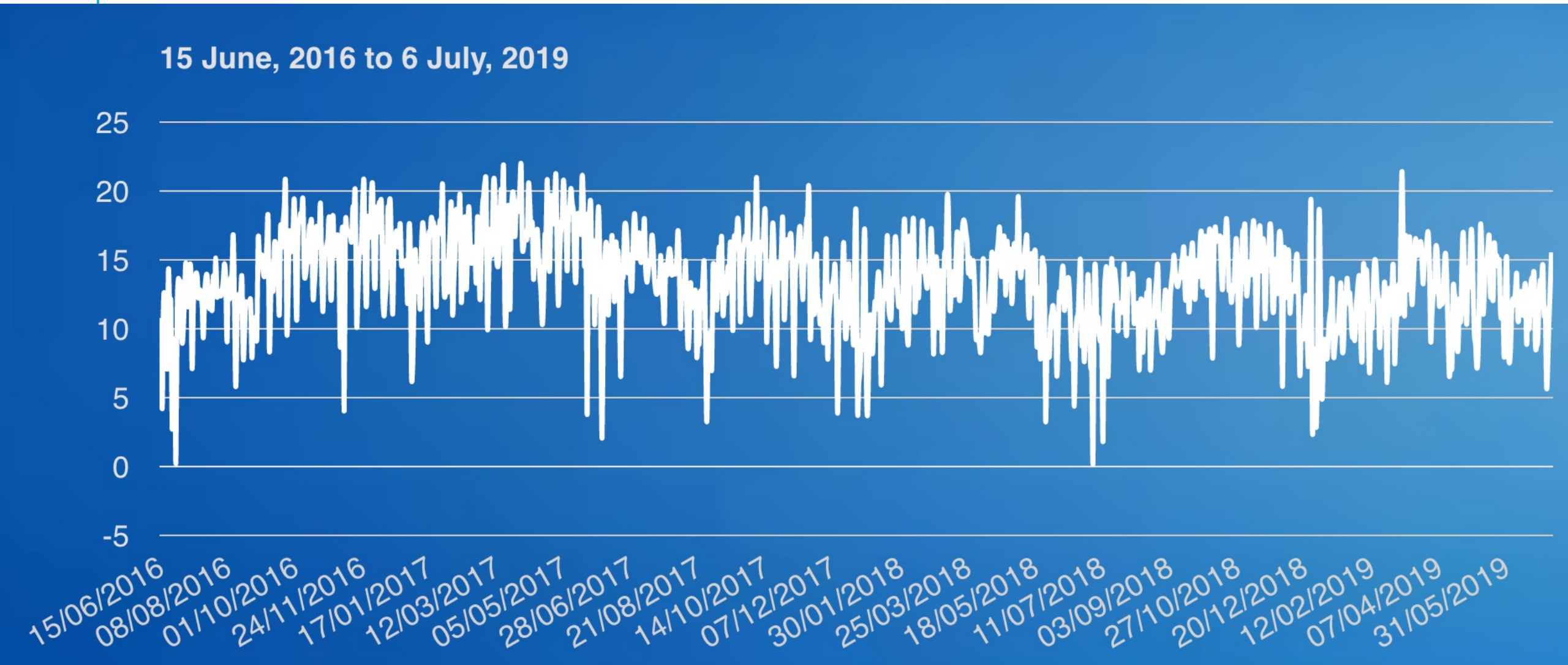
2 PLUS 2 EQUALS 5

- Social scientists have expertise
- AI/ML scientists have expertise
- The two work much better when used in conjunction

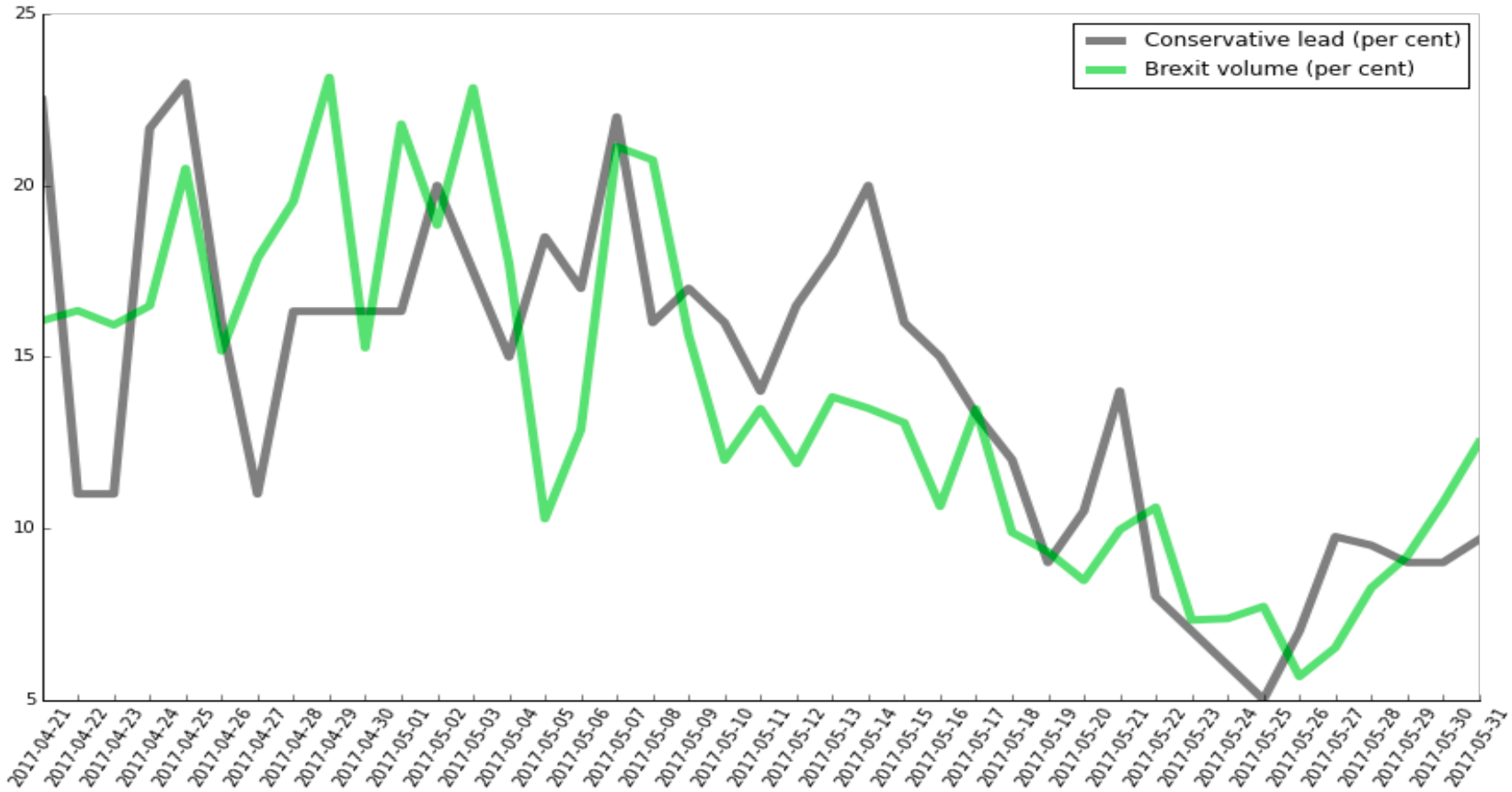
TWITTER NETWORK DURING BREXIT CAMPAIGN



LONDON FEELGOOD FACTOR 15 JUNE 2016 TO 6 JULY 2019



UK GENERAL ELECTION 2017: CONSERVATIVE OPINION POLL LEAD AND IMPORTANCE OF BREXIT AS A TOPIC: UNTIL 7 DAYS BEFORE POLLING



CONCLUSION

- The rational choice theory of economics still works well in many contexts
- But it faces increasing challenges when networks, social influence and emotion are playing an increasing role in decision making
- To best understand this, we need genuine multi-disciplinary work
- Social science/economics/network theory/AI and ML
- The tools are there. We need to learn to use them to best effect