



UNIVERSITY OF
BIRMINGHAM

Security
and
Privacy

Demystifying Online Voting

Dr David Galindo

Senior Lecturer in Computer Security

<http://sec.cs.bham.ac.uk/>



Who am I?

- +15 years experience in **applied cryptography** research
- Several research publications on **electronic voting**
- Contributed to several academic and industry **e-voting platforms**



Online voting

- **Industry** experience in e-voting
- Designed and deployed Internet voting for **governmental elections**
 - Canton of Neuchâtel, Switzerland
 - iVote in New South Wales, Australia (+285000 votes in 2015)
- **Certification** of e-voting systems



Demystifying online voting

- My aim today is to **empower you** to debate having the **option to vote online**
- This debate is **not exclusive** to security experts or politicians or electoral officers
- Need to include: political and social scientists, voters failed by the current system
- Need to **re-balance** the discourse from **risks** to **opportunities**



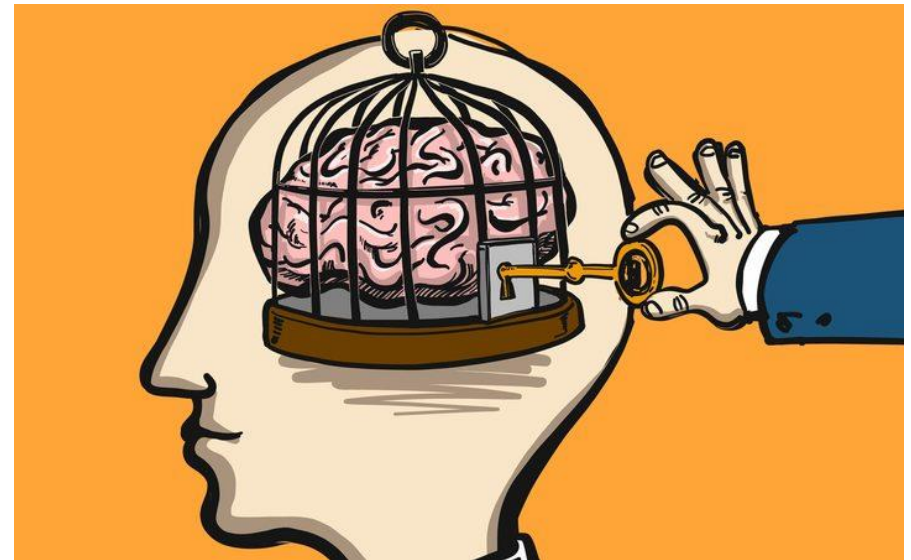
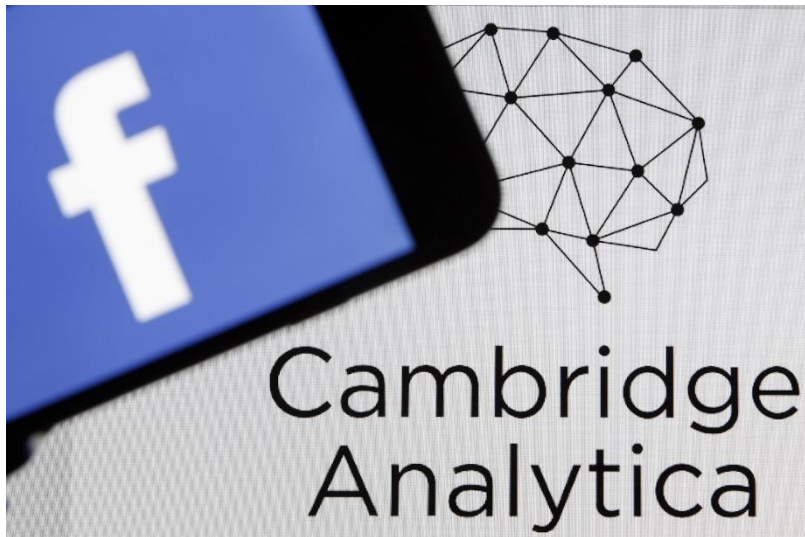
Opposition to online voting

Main argument is that it will be used to
rig elections



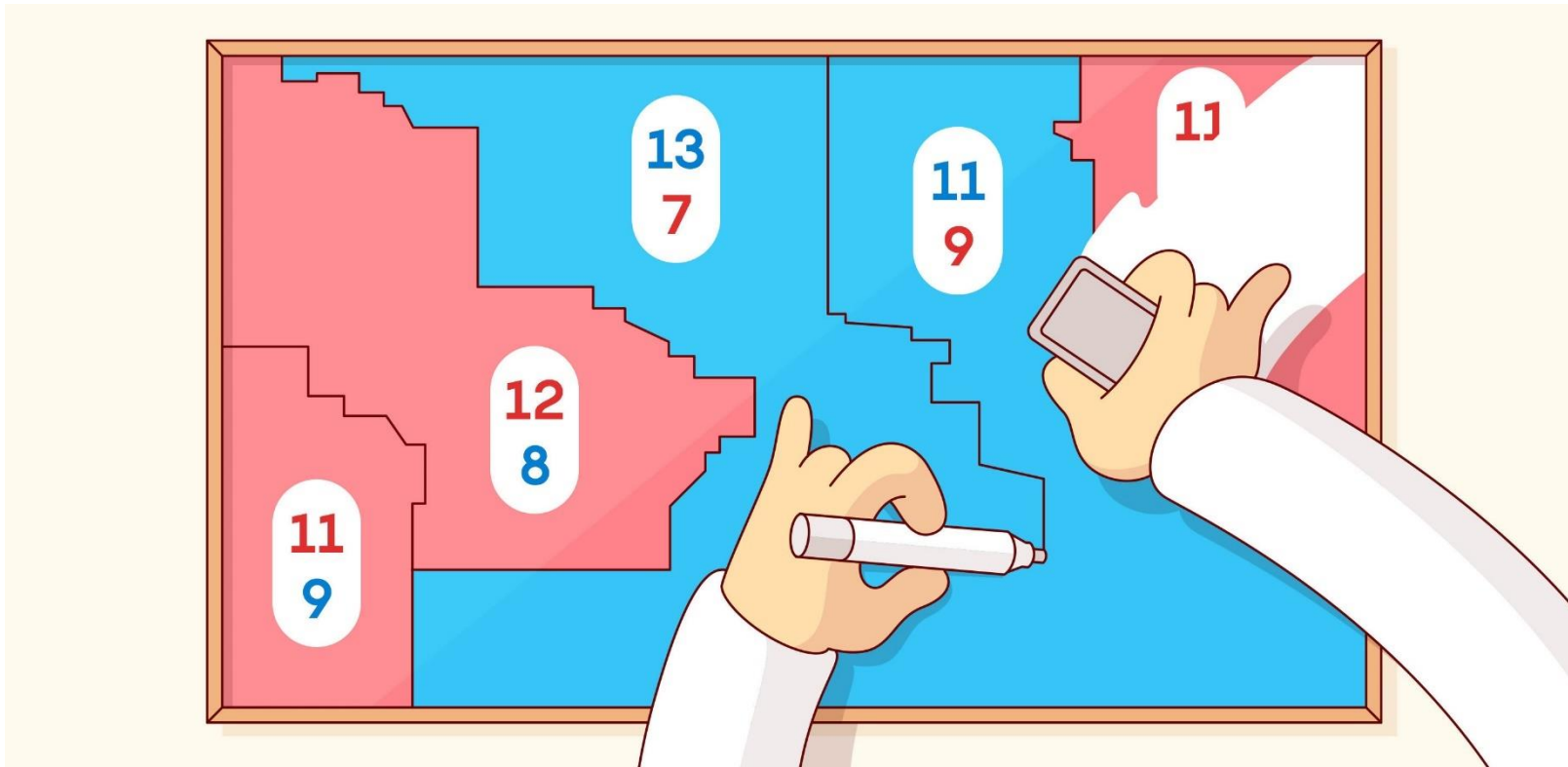
How to rig an election today

Misinformation and/or Propaganda



How to rig an election today

Gerrymandering



How to rig an election today

Voter suppression

Mass purging of black Democrats from voter rolls and African Americans' low early voting turnout raises concerns for Hillary Clinton supporters in swing states

Guardian US briefing

Purging of black Democrats from voter rolls raises election concerns

Barack Obama tries to increase voter turnout; North Carolina emerges as key state; 'The FBI is Trumpland,' sources say; Canada to investigate Arctic ping
by Edward Helmore in New York



Online voting: a remedy against voter suppression

An **election result** can be **radically different** if you manage to **suppress/encourage** certain voter groups

Demographics failed by the current voting system:

- voters with disabilities:
 - vision impairments, reduced mobility, mental illness
- expatriates voters
- overseas military voters

Recap: we are voting using a **19th century** system!



A techno-political question

- **Online voting** is intertwined with **voter suppression**
- Hence **online voting** is at the same time of:
 - **technical** nature
 - **political** nature



A techno-political question

Beware of:

- whoever opposes online voting on **purely technical** grounds... it is **also political!**
- whoever **dismisses convenience** of casting your vote is important... it is **political!**

Promoting online voting is also **political:**

- it is to believe that **all demographics should have equal opportunities** to cast their vote

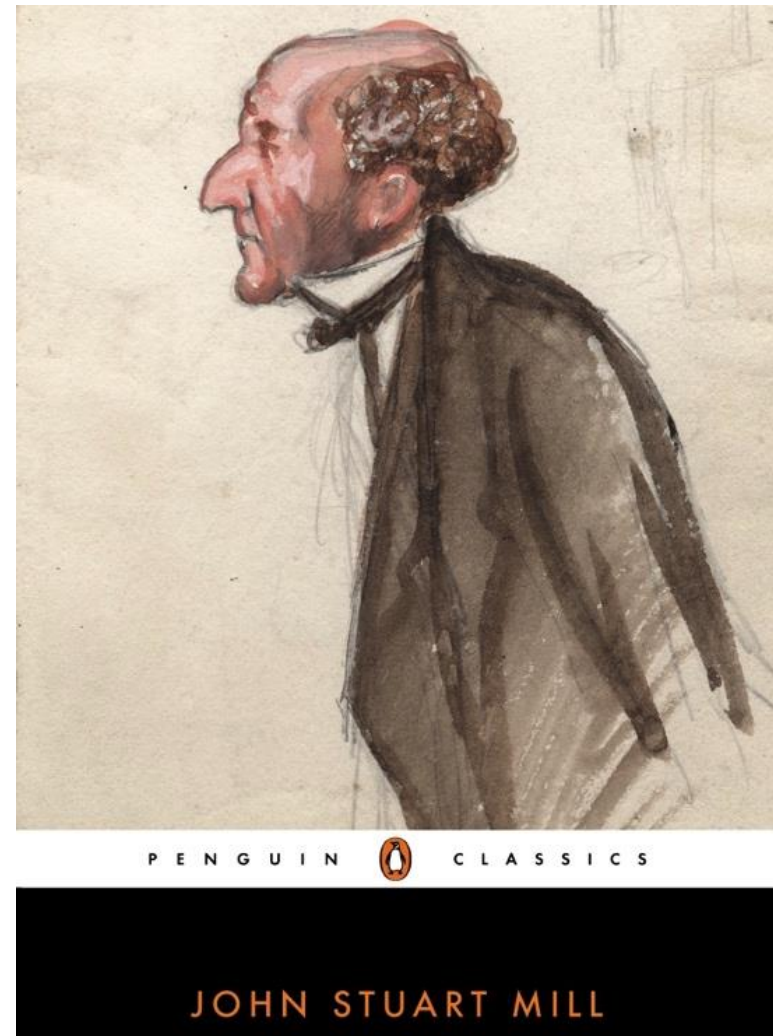


Resistance to change

The proposal which has been thrown out of allowing the **voting papers to be** filled up at the voter's own residence, and **sent by the post**, I should regard as **fatal**.

John Stuart Mill (1860)

Considerations on Representative Government



Let's resist the luddite in us!



Arvind Narayanan  @random_walker · Apr 16

7 simple steps to control your privacy:

- Quit Facebook
- Install an ad/tracker blocker
- Destroy your smartphone
- Paint your face before going outside
- Write opt-out letters to each of the 4,000 data brokers
- Avoid other humans (FB gets your data from them)
- Move to a remote forest



324



6.7K



15K



Online voting **demystified**

- Please **participate** in the debate having the **option to vote online... it is political!**
- This debate is **not exclusive** to security experts or politicians or electoral officers
- Need to **include**: political and social scientists, voters failed by the current system, ...
- Need to **re-balance** the discourse from **risks to opportunities**



Online Voting

