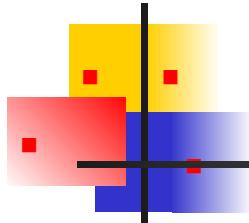


Weaponising jon's research -
ACS Transferable Skills 2021 -
Retrospective Ethics

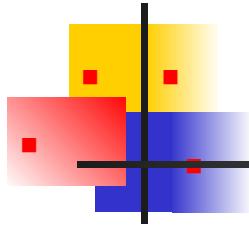
Jon Crowcroft,

<http://www.cl.cam.ac.uk/~jac22>



Do no harm...

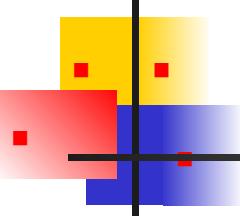




3 examples of normative ethics fail

1. DPI
2. DSI
3. CA
4. Oh, ok 4 - recombinant malware

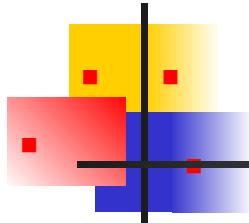
- Endace
- Measurement of ISP - Sprint Backbone:
- <https://www.cl.cam.ac.uk/~jac22/out/konstantina-papagiannaki.pdf>
- >NSA (surveillance)
- https://en.wikipedia.org/wiki/The_Snowden_Files



Could have underpowered capture

- But would have been unsuccessful business
 - Not led to innovation in protocols
 - And sunk without trace (pun intended)
- Could have controlled product via patent.
 - And had corporate ethical position...
 - If we'd thought of it

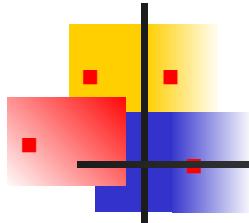
- Mbone
- Multicast&realtime multimedia
- <https://www.cl.cam.ac.uk/~jac22/otalks/ballardie-thesis.ps.Z>
- >DSI (war)
- <https://www.ncbi.nlm.nih.gov/pubmed/7643020>



Dual use is Internet #101

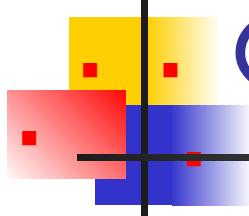
- Hard to do a lot about
 - Much comms (and crypto) has dual use origin
- Arguably, training soldiers better, might lead to less violent death
 - Personal choice...

- MyPersonality
- Facebook graphs&processes:
- <https://www.cl.cam.ac.uk/research/srg/netos/papers/p955-quercia.pdf>
- >CA (democracy)
- <https://www.theguardian.com/news/2018/mar/26/the-cambridge-analytica-files-the-story-so-far>



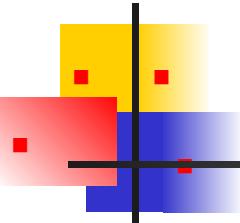
Definitely foreseeable

- Much written about re-purpose of tech
 - Author has read books on topic
 - Should have thought about control of results
 - Or at least put out a warning..



Question for you to consider

- What do you think about a Covid Vaccine Certificate (a.k.a. Immunity Passport).



malware

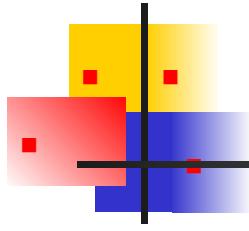
- Vigilante observes behaviour of malware & builds self-certifying alert+patch

<https://www.microsoft.com/en-us/research/publication/vigilante-end-to-end-containment-of-internet-worms/>

- So now the bad guy doesn't just have polymorphic worms:-

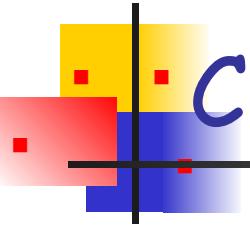
Can build recombinant malware...bad bad bad

<https://www.nature.com/articles/455290a>



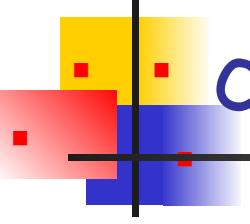
This example was mitigated

- So while potential for harm is high,
 - Solutions in place
- General solution maybe Asilomar Protocols?



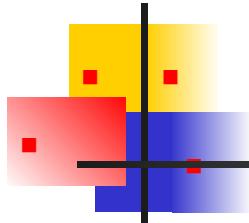
Contact Tracing Apps

- Back 15 years, we wrote FluPhone
 - Detects proximity of other people via Bluetooth
 - Uploads contacts to secure site
 - used to track infection exposure during H1N1 epidemic
 - Informed consent, data private
- What's the problem?



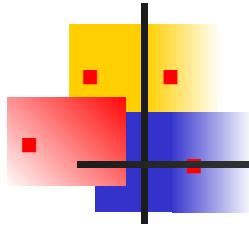
centralised data for contact trace

- could be appropriated and misused
 - e.g. compliance checking or later, commercial exploitation
 - like fb friend list only worse:)
 - Enter GAEN decentralised solution
 - Why trust google/apple more than NHS?
 - fails to deliver on epidemiology data



What to do about it?

- Not do research?
- Warn people about poor uses of ideas?
- Patent/protect tech to control?
- Something new?
- Pugwash for Computing



Who Am I?

