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What are research ethics?

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Format

1. Warm up (10 minutes)
2. Short lecture (20 minutes).
3. Group discussions (20 minutes)
4. Plenary discussion (30 minutes)
5. Feedback and consolidation of key issues (10 minutes)

Warm up

In groups of up to 5 people discuss for 5 minutes:

- ▶ Where have you seen ethical issues arise in research?
- ▶ What kinds of things go wrong?
- ▶ What are research ethics for?

We will then feed back for 5 minutes.

Think before doing research that might effect people

- ▶ Consider the ethics carefully
- ▶ Describe your considerations in any publications
- ▶ “humans” not “human participants” or “human subjects”
- ▶ Seek review as necessary (see next session)

We had questions about ethics in our research¹

- ▶ UDP honeypot DDoS sensors
- ▶ Developed statistical method for estimating coverage
- ▶ Verified using leaked booter databases...



¹Daniel R. Thomas, Richard Clayton, and Alastair R. Beresford. 2017. 1000 days of UDP amplification DDoS attacks. In *APWG Symposium on Electronic Crime Research (eCrime)*. IEEE, Scottsdale, AZ, USA.

Ethics are norms of conduct

- ▶ Distinguish between acceptable and unacceptable behaviour
- ▶ Guidance in Menlo Report²
- ▶ Enforced by REBs and Program Committees (e.g. IMC³)
- ▶ Minimise harm, maximise benefit.

²David Dittrich, Michael Bailey, and Erin Kenneally. 2013. Applying ethical principles to information and communication technology research: A companion to the Menlo Report. Tech. rep. U.S. Department of Homeland Security, (Oct. 2013).

³Mark Allman and Vern Paxson. 2007. Issues and etiquette concerning use of shared measurement data. In *Proceedings of the 7th ACM SIGCOMM conference on Internet measurement*. ACM, 135–140.

Menlo report

- ▶ Respect for persons
- ▶ Beneficence
- ▶ Justice
- ▶ Respect for law and public interest

Observation or intervention⁴

These sessions focus on ethics of observational studies. There are many more considerations for intervention based studies.

For careful reasoning on the ethics of intervention based research see:

<https://civilservant.io/>

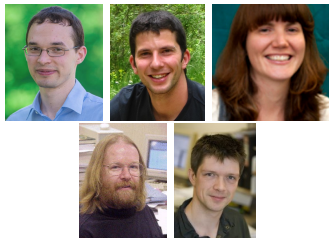


<https://www.youtube.com/watch?v=RLzRtDp7ES0>

⁴J. Nathan Matias and Merry Mou. 2018. CivilServant: Community-led experiments in platform governance. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing System*. ACM Press, 1–13. ISBN: 978-1-4503-5620-6.

We should consider these ethical issues⁵

- ▶ Identification of stakeholders
- ▶ Informed consent (where possible)
- ▶ Identify harms
- ▶ Safeguards
- ▶ Justice
- ▶ Public interest



⁵Daniel R. Thomas, Sergio Pastrana, Alice Hutchings, Richard Clayton, and Alastair R. Beresford. 2017. Ethical issues in research using datasets of illicit origin. In *Proceedings of the Internet Measurement Conference (IMC)*. ACM. London, UK, (Nov. 2017).

Legal issues may arise

- ▶ Computer misuse
- ▶ Copyright
- ▶ Data privacy (e.g. GDPR)
- ▶ Terrorism
- ▶ Indecent images
- ▶ National security
- ▶ Contracts

IANAL. Just pointers: not even the beginning of advice.

AT&T iPad users database breach

- ▶ “Researchers” from Goatse Security found vulnerability in AT&T website
- ▶ Obtained email addresses for 114 000 iPad users
- ▶ Shared vulnerability, exploit, and email addresses with third parties
- ▶ Did not report vulnerability to AT&T
- ▶ Went to jail

Unethical and illegal.

Illegal but ethical research?

- ▶ *Mens rea*: lack of criminal intent
- ▶ Not in the public interest to prosecute (perhaps ask the prosecutor first)
- ▶ REB approval! REB protection?
- ▶ Get the law fixed

Bad and good justifications

Bad:

- ▶ Not the first
- ▶ Public data

Good:

- ▶ No additional harm
- ▶ Fight malicious use
- ▶ Necessary data

Patreon database leak⁶

- ▶ Researching crowdfunding on Patreon by scraping the website (complete scrape?)
- ▶ Patreon is compromised and full database + source code leaked
- ▶ Authors decided there would be additional harm
 - ▶ Private vs. public data
 - ▶ Legitimize criminal activity
 - ▶ Violate privacy

⁶Nathaniel Poor and Roei Davidson. 2016. The ethics of using hacked data: Patreon's data hack and academic data standards. Data and Society. Tech. rep. Council for big data, ethics and society, (Mar. 2016), 1–7. Retrieved Sept. 28, 2017 from <http://bdes.datasociety.net/council-output/case-study-the-ethics-of-using-hacked-data-patreons-data-hack-and-academic-data-standards/>.

Safeguards against potential harm

- ▶ Secure storage
- ▶ Privacy
- ▶ Controlled sharing

Potential harms

- ▶ Illicit measurement
- ▶ Potential Abuse
- ▶ DeAnonymisation
- ▶ Sensitive Information
- ▶ Behavioural Change
- ▶ Researcher Harm

Researcher Harm

- ▶ Researchers are participants
- ▶ Ethics also protects researchers
- ▶ Maltese journalist Daphne Caruana Galizia killed by car bomb used Panama Papers data also used by researchers⁷
- ▶ Kenichiro Okamoto cybersecurity expert was killed by an Internet troll⁸

⁷Joseph Borg. 2017. Daphne Caruana Galizia obituary. *The Guardian*, (Nov. 21, 2017). Retrieved July 10, 2018 from <http://www.theguardian.com/media/2017/nov/21/daphne-caruana-galizia-obituary>.

⁸Jake Adelstein. 2018. A cyber-security expert trolled the trolls. Then one killed him. *The Daily Beast. world*, (June 29, 2018). Retrieved June 29, 2018 from <https://www.thedailybeast.com/a-cyber-security-expert-trolled-the-trolls-then-one-killed-him>.

Benefits provided

- ▶ Reproducibility
- ▶ Uniqueness
- ▶ Defence Mechanisms
- ▶ Anthropology & Transparency

Safeguards, harms, and benefits⁹

Safeguards:

Privacy: No individuals identified

Controlled Sharing: Under legal agreement

Potential harms:

Sensitive Information: Names, email addresses, criminal activity

Behavioural Change: Don't advertise (working) booters

Benefits:

Uniqueness: Ground truth on booter activity

Anthropology & Transparency: Real behaviour of booters

⁹Daniel R. Thomas, Richard Clayton, and Alastair R. Beresford. 2017. 1000 days of UDP amplification DDoS attacks. In *APWG Symposium on Electronic Crime Research (eCrime)*. IEEE, Scottsdale, AZ, USA.

Lets do ethical research

- ▶ Think about the ethics at an early stage
- ▶ Take appropriate safeguards
- ▶ Write about it in publications

Group discussions

- ▶ Groups of up to 5 people
- ▶ Make notes on your case study:
 1. key ethical issues
 2. the harms that resulted
 3. could harms have been prevented?

Plenary discussion

Feedback from each group on the case studies they looked at.

Thank you! Questions?

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- [7] Nathaniel Poor and Roei Davidson. 2016. The ethics of using hacked data: Patreon's data hack and academic data standards. *Data and Society*. Tech. rep. Council for big data, ethics and society, (Mar. 2016), 1–7. Retrieved Sept. 28, 2017 from <http://bdes.datasociety.net/council-output/case-study-the-ethics-of-using-hacked-data-patreons-data-hack-and-academic-data-standards/>.
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- [9] Daniel R. Thomas, Sergio Pastrana, Alice Hutchings, Richard Clayton, and Alastair R. Beresford. 2017. Ethical issues in research using datasets of illicit origin. In *Proceedings of the Internet Measurement Conference (IMC)*. ACM, London, UK, (Nov. 2017).