

# Inf 2 - Foundations of Data Science

## Workshop 1 (Week 3) – Ethics

### Student Guide

Following the workshop, here are the instructors' answers to the questions. You may have found additional points or disagree – please share your thoughts on Piazza.

#### Facebook Case Study

**1. What are the most relevant ethical challenges for data scientists that are reflected in your case study?**

Of the ethical challenges listed in Part 2 of Vallor's *Introduction to data ethics*, the following are reflected:

- Appropriate data collection and use: The data was used for a purpose that could not reasonably be anticipated by Facebook users. Users were not given any choice in participating in the experiment.
- Personal, social and business impacts: The effect of the experiment on users was not considered sufficiently; users' life interests, autonomy, dignity and mental health could have been damaged.
- Violation of privacy protection related to automated decision-making including profiling.
- What control or rights should the Facebook users involved in the experiment have had over their data? Could they withdraw from the study?

**2. What specific, significant harms to members of the public did the researchers' actions risk? List as many types of harm as you can think of.**

- The autonomy of Facebook users – i.e. the control of their life was somewhat reduced by the manipulation of their feed
- The mental wellbeing of Facebook users
- There was a harm to transparency, as users did not realise they were being experimented on, and also they were prevented from getting the information in their full feed.

**3. How should those potential harms have been evaluated alongside the prospective benefits of the research claimed by the study's authors? Could the benefits hoped for by the authors have been significant enough to justify the risks of harm you identified above?**

- The benefits of the study seem principally to be better understanding of emotional contagion (Kramer & al., 2014, *PNAS* <https://www.pnas.org/content/111/24/8788.full>). Facebook might say that the benefits would be “showing viewers the content they will find most relevant and engaging”, but it seems likely that Facebook also has its own profit motive.
- Given that this is a scientific study, the benefits and harms should have been following the usual processes for scientific research, including approval by an institutional ethics committee and consent forms.
- Although this is an interesting scientific result, it would not seem to be of the level of importance that *might* justify considering modifying normal scientific ethical practice – e.g. a challenge study of a Covid vaccine.
- Facebook said that the data could be used to improve user experience using the data for legal protection

**4. List the various stakeholders involved in each case, and for each type of stakeholder you listed. What was at stake for each of them in this episode? Be sure your list is as complete as you can make it, including all possible affected stakeholders.**

- Facebook users
- The researchers who wrote the paper
- The journal in which the paper was published
- The reviewers of the paper
- The Facebook management – with an interest to increase their profit
- Those in the academic community targeted by the papers
- Anyone in the wider public who hears about the studies. By publishing, the public gain some wider appreciation of the sorts of influence Facebook news feeds can have, feeding into a dialog of social media use and regulation.

**5. How did the lead investigators defend their position in each case, and how ethically valid is this justification?**

- The defence seems to be that (a) Facebook is continually developing its algorithm to filter content that appears in users’ news feeds; manipulating emotions is just another example of this and (b) this is an interesting scientific result (c) “no text was seen by the researchers. As such, it was consistent with Facebook’s Data Use Policy, to which all users agree prior to creating an account on Facebook, constituting informed consent for this research.” (Kramer & al, 2014). Point (a) does not seem to be valid; users might expect Facebook to try to sift relevant content on the basis of what users read, but they would not reasonably expect Facebook to try to change their emotional state. (b) and (c): the point that text was not seen by the researchers does not seem to be the relevant one here.

**6. Describe several things that the lead investigators of each study could have done differently, to acquire the benefits of the study in a less harmful, less reputationally damaging, and more ethical way.**

- Asked for explicit consent for the experiment so that only consenting users saw modified news feeds.
- Made more explicit T&Cs, stating that Facebook users agree to this type of experiment.
- Allowed participants to opt out of the study at any point in time.
- Shared results of the study with participants on FB.

Note that the journal that published the paper issued an Editorial Note of Concern, citing concerns around the issue of informed consent and lack of an opt-out:

<https://www.pnas.org/doi/10.1073/pnas.1412469111>

## OK Cupid Case study

### **1. What are the most relevant ethical challenges for data scientists that are reflected in your case study?**

Of the ethical challenges listed in Part 2 of Vallor's *Introduction to data ethics*, the following are reflected:

- Appropriate data collection and use: The data was collected (scraped) in a way that OK Cupid had not intended it to be, and which was not in line with the T&C's OK Cupid users had agreed to.
- Personal, social and business impacts: The effect of the data release on users was not considered sufficiently; users' life interests, autonomy, dignity, privacy and relationships could have been damaged.
- Data storage, security and responsible data stewardship: the privacy protection was not adequate. For example, there could have been protections against users scraping data.
- Human accountability in data practices and systems: who was accountable, the researchers or the university for which they were working? The University put the blame squarely on the researchers.

### **2. What specific, significant harms to members of the public did the researchers' actions risk? List as many types of harm as you can think of.**

- Privacy: intimate details of OK Cupid's users' lives were made public, given that there was not sufficient anonymisation.
- Autonomy: users whose data were exposed would have compromised their privacy.

### **3. How should those potential harms have been evaluated alongside the prospective benefits of the research claimed by the study's authors? Could the benefits hoped for by the authors have been significant enough to justify the risks of harm you identified above?**

- There should have been a proper ethics procedure undertaken, meeting standards such as informed consent and opt-out. Consent would have needed be obtain from any individual participating in the study.
- The harms to users could have been considerable, for example if users had been identified. Even if not identified, users could have been anxious about their data being found. It is unclear what the benefit to society is of knowing more about the relationship between cognitive ability and belief or political interest; in contrast if the research had been about developing an improved medicine, there would be a clear potential benefit, which might justify some risk of harm, as would be assessed in an ethics procedure.

**4. List the various stakeholders involved in each case, and for each type of stakeholder you listed. What was at stake for each of them in this episode? Be sure your list is as complete as you can make it, including all possible affected stakeholders.**

- The researchers, who wanted to write a paper, but who risked losing their reputation
- The OK Cupid users, whose privacy was at stake
- The OK Cupid company, whose reputation and therefore profits were at stake
- Aarhus University, whose reputation for ethical scientific research was at stake.
- The general public: data dumps like these dramatically illustrate that your data is out there, and it's quite possible for people to extract and mass process it.

**5. How did the lead investigators defend their position in each case, and how ethically valid is this justification?**

- The data was already public – but the data was not public in the sense that any internet user could see it without an account; an account was required which had terms and conditions attached that prevented the use of the data.
- That there was no legal problem – This appears not to be true (as OK Cupid were able to force the data to be taken down) but this does not constitute an evaluation of the potential ethical harms and benefits and does not imply no harm was done.
- “Don’t know, don’t ask” - ignorance is not a defence under the law.

**6. Describe several things that the lead investigators of each study could have done differently, to acquire the benefits of the study in a less harmful, less reputationally damaging, and more ethical way.**

- They could have designed a different study that did not involve personal data on a dating website to answer the same question. For example, recruiting members of the online public and asking them to participate in an online study about relationships with e-dating sites.
- If they had really wanted to use this dataset, they should have first asked OK Cupid about the possibility and come to an agreement with OK that allowed for the informed consent of the data subjects.
- Behaved more ethically and responsibly once accused.