

# MACS 3000: Perspectives on Computational Analysis

## Problem Set 8

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### 1 Identification risk in anonymized data

- (a) The structure of the re-identification attacks for health insurance records and credit card transaction data is very similar. Both data sets include information that forms a unique fingerprint of a person even without apparent identifiers. In the health insurance, records there are variables such as the visit date, diagnosis and zip code that can uniquely identify someone, likewise transaction dates, places and amounts in the credit card transactions data. The base of the re-identification attacks is having a combination of variables that make an individual unique in the dataset. This uniqueness could be transformed easily on identification from a second dataset with names and other identifiers.
- (b) We can think of several examples where health insurance and credit card transactions information could reveal sensitive information. The health insurance records could disclose information about specific diagnosis or diseases that people can use to discriminate. For example, in the labor market knowing that someone is HIV positive can generate discrimination against this person, regardless of whether the condition is relevant for the job he or she is applying. The credit card transaction could reveal information on people's wealth that other people can use to rob or extort them. The dates and places of credit card transaction could give information on people's routine, that can be used to follow them. In summary, the sensitivity of the data is not always evident, regardless of the good intentions and benefits that the analysis of sensitive data can give us, there are still risks that must we must take into account after releasing data, even if the data is already "anonymized".

### 2 Describing ethical thinking

- Upon the public announcement of this initial discovery, and general criticism of the research teams attempts to protect the privacy of the subjects, Jason Kaufman, the principle investigator

of the T3 research project, was quick to react, noting that, perhaps in justification for the amount of details released in the dataset, ‘Were sociologists, not technologists, so a lot of this is new to us and ‘Sociologists generally want to know as much as possible about research subjects.’” [Zimmer(2010) citing Kauffman (Sep. 30, 2008b)]

In this statement, Jason Kauffman is talking about the principle of Beneficence. For him, as a sociologist, he was not harming the participants, and he was maximizing benefits on having more information about the research subject. Nonetheless, not being a technologist made him underestimate the possible risks on having the variety of information that was on his dataset.

- **Kauffman then attempts to diffuse some of the implicit privacy concerns with the following comment: What might hackers want to do with this information, assuming they could crack the data and ‘see’ these peoples Facebook info? Couldnt they do this just as easily via Facebook itself? Our dataset contains almost no information that isnt on Facebook. (Privacy filters obviously arent much of an obstacle to those who want to get around them.) [Zimmer (2010) citing Kauffman (Sep. 30, 2008b)]**

In this statement, Kauffman is talking about the principle of Respect for Persons. In his point of view, the information that people upload to their profiles is public, and anyone can access that information. People, by signing in on Facebook, were exposing themselves and giving the consent to use all this information. He argues that there is no difference between the information that was already on Facebook and the one they had in the dataset.

- **We have not accessed any information not otherwise available on Facebook. We have not interviewed anyone, nor asked them for any information, nor made information about them public (unless, as you all point out, someone goes to the extreme effort of cracking our dataset, which we hope it will be hard to do).” [Kauffman (Sep. 30, 2008c)]**

In this statement, Kauffman is talking about the principle of Respect for Persons and also about the principle Beneficence, more specifically the “do not harm” part. The first part, says that all the information they use, was already public on Facebook, they didn’t do a new intervention that requires the participants’ consent. The second part, says that their objective was not to harm the research subjects and that they make an effort to ensure that damaging the participants was difficult for an outsider.

### 3 Ethics of Encore

In the paper “No Encore for Encore? Ethical questions for web-based censorship measurement”, Narayanan Zevengergen (2015) made an ethical analysis of the Encore study. The first big question they try to assess is whether Encore is

human subject research. Their conclusion is that is not about the individual behavior but the functioning of the censorship system. However, not being the target is not a unique condition, they point out that according to the Menlo Report is also essential to take into account subjects that can experience harm, that in the Encore study are the IP addresses owners.

The second issue that Narayanan Zevengergen (2015) analyze is the principle of Beneficence or the risk and benefit balance of the study. The authors highlight the difficulty of measuring the harm on this study. Nonetheless, they find several caveats to the argument of Burnett and Feamster (2015) “that normal web browsing exposes users to the same risks that Encore does” (Narayanan Zevengergen (2015) p.17) and on their efforts on mitigating harm. This argument has three principal flaws, first, although advertisers third-party tracking tools are similar to the ones use by researchers, their ethics obligations need not be. Second, the type of the censored website plays a vital role in the risk exposure for users. Third, the authors only focus on individual harm and didn’t take into account possible aggregate harm to the system.

Finally, under the consequentialism framework, an essential part of the ethical analysis is the ethics of the purpose. Narayanan Zevengergen (2015) argues that the benefits of studying censorship are not necessarily universal, more specifically “an unequivocally negative view of censorship is not universally held” (Narayanan Zevengergen (2015) p.16). Then, the ethics of the final goal are also questionable.

In my opinion, the Burnett and Feamster (2015) encore study two most significant flaws in ethics were their lack of effort in minimizing the harm on the participants and not asking for any consent. The minimization of harm was as simple, as choosing carefully the censored to mitigate the risk for most vulnerable participants, specifically the ones that live in countries where risks were higher. The argument of not having consent for the difficulty of making one applicable worldwide is not convincing. They could have made a consent that explains the risks in the worst case scenario. In sum, the ethics of the Encore study can improve by designing them base on the risk-benefit balance for the most vulnerable of the participants.