Ethics of Data Science – Part II

Randomised Controlled Trials

How many of these apply to non-clinical contexts?

1. Randomisation is one of many virtues the RCT has. Others include:
2. Pre-registering the hypotheses to be tested in a Statistical Analysis Plan
3. Formal reasoning on whether the trial has a large enough sample size
4. Obtaining informed consent from the subjects involved
5. An obligation to report negative results
6. The concept of “double blinding”
7. Inability to casually change course midway through based on partial results
8. Prospective planning of what to measure as evidence of success (“endpoint”)

3. Statistical Analysis Plan
5. Obligation to publish negative results

Pre-registering your intended analysis and testable hypotheses protects against p-hacking and related offences.

All trials registered. All results reported.

September 2013

The AllTrials campaign calls for all past and present clinical trials to be registered and their results reported.

4. Informed consent

PNAS

ARTICLES FRONT MATTER AUTHORS TOPICS +

RESEARCH ARTICLE | PSYCHOLOGICAL AND COGNITIVE SCIENCES |

Experimental evidence of massive-scale emotional contagion through social networks

Adam D. I. Kramer, Jamie E. Guillory, and Jeffrey T. Hancock Authors Info & Affiliations

Edited by Susan T. Fiske, Princeton University, Princeton, NJ, and approved March 25, 2014 (received for review October 23, 2013)

June 2, 2014 | 111 (24) 8788-8790 | https://doi.org/10.1073/pnas.1320040111

THIS ARTICLE HAS BEEN CORRECTED +

In an experiment with people who use Facebook, we test whether emotional contagion occurs outside of in-person interaction between individuals by reducing the amount of emotional content in the News Feed. When positive expressions were reduced, people produced fewer positive posts and more negative posts; when negative expressions were reduced, the opposite pattern occurred. These results indicate that emotions expressed by others on Facebook influence our own emotions, constituting experimental evidence for massive-scale contagion via social networks.

4. Informed consent

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CORRECTION |

Editorial Expression of Concern: Experimental evidence of massivescale emotional contagion through social networks

July 3, 2014 | 111 (29) 10779 | https://doi.org/10.1073/pnas.1412469111

VIEW THE ORIGINAL ARTICLE +

819 24

PSYCHOLOGICAL AND COGNITIVE SCIENCES PNAS is publishing an Editorial Expression of Concern regarding the following article: "Experimental evidence of massive-scale emotional contagion through social networks," by Adam D. I. Kramer, Jamie E. Guillory, and Jeffrey T. Hancock, which appeared in issue 24, June 17, 2014, of *Proc Natl Acad Sci USA* (111:https://doi.org/10.1073/pnas.1320040111; first published June 2, 2014; 10.1073/pnas.1320040111). This paper represents an important and emerging area of social science research that needs to be approached with sensitivity and with vigilance regarding personal privacy issues.

Questions have been raised about the principles of informed consent and opportunity to opt out in connection with the research in this paper. The authors noted in their paper, "[The work]

6. Double blinding

- The subject does not know which treatment they are taking → Placebo effect
- The clinical staff performing the trial does not know which treatment they are giving to patients → Different level of care depending on treatment
- The principal investigator does not know which patients are taking which treatment → Confirmation bias

Placebo effect outside medicine: *"You have been randomly selected to test a new social media feed algorithm. You will be asked to report on your level of satisfaction with the new algorithm in 3 months."*

Clinical staff bias outside medicine: sales reps excited about using a novel piece of software end up more motivated/enthusiastic during client calls and hence more effective, but not because of the tool itself.

Principal Investigator bias can be counteracted by best practices around pre-registration.