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Research Methods: Ethics in Research

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Learning Goals

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- Understand
  - Why researchers must consider ethical implications of their work
  - Why this particularly important in the digital age
  - General principles for ethical research
- Be able to
  - Reflect on potential ethical issues in the design of research studies
  - Apply ethical principles
  - Find more information and guidance on research ethics

Ethics?

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- Branch of philosophy relating to the decisions and comprehension of “right” and “wrong”.
- A system of moral principles
- The rules of conduct recognised by a given group.
- Professional Ethics
  - Power and responsibility
  - Codes of conduct (of professional bodies, e.g. IET/BCS, ACM, IEEE, …)
- Ethics in Research
  - Principles for ethically acceptable research

Ethics in Research

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- Research does not happen in vacuum.
- Our goal with research is to extend our understanding about a given topic.
- This often involves humans (using different selection criteria):
  - Studying how they are affected by certain things (treatments, policies, technology, etc.)
  - Examining how they have perceived things in the past
  - Exploring the relation between their actions and background or context
- Many different forms of contact
  - Including secondary data

The Tuskegee Study

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- “Tuskegee Study of Untreated Syphilis in the Negro Male”: 1932-1972
- To study the natural progression of syphilis.
- 600 African-American men in rural Alabama of which 399 had syphillis
- Subjects were told they were treated for “bad blood” but in truth left untreated
- Penicillin became available in 1947 but was not offered to participants
- Led to the Belmont Report (1979) and major changes in U.S. law and regulation
- Where did it all go wrong?

Ethics in Computer & Data Sciences

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Phew! Thank God we're not doing medical experiments.

We don't have ethical stuff to deal with.

Wrong!

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- You might do!
  - Software operates within the real world.
  - Data describes the real world.
- Still, there are *so* many ways of harming others.
  - Data leaks, insecure applications, misinformation etc.
- These are arguably of a wider scale of damage (due to ubiquity).
- The web. Pervasive computing. Big data.

The Web Effect

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- Growth in user-generated content and online participation has led to more data being available and having a farther reach.
  - Often in the form of *found* data, i.e. with unknown provenance.
  - Web APIs make it easy and quick to extract data.
  - Can reach more people easier.
- This raises many ethical questions:
  - Do we need to have users' consent for using their data, or data about them?
  - Given that everything is publicly visible online anyway, do we need to protect the anonymity of participants?

Ethics in Research

- Researchers have to think carefully about their impact.
- No direct or indirect harm to participants/others.

- Moral principles must guide research.
  - Participants (and society) have rights.
  - Researcher has professional responsibilities and obligations.

Example – Emotional Contagion

Proceedings of the National Academy of Sciences of the United States of America

PNAS Celebrating 100 Years 1915-2015

PNAS

CURRENT ISSUE // ARCHIVE // NEWS & MULTIMEDIA // AUTHORS // ABOUT // COLLECTED ARTICLES // BROWSE BY TOPIC // EARLY EDITION // FRONT MATTER

> Current Issue > vol. 111 no. 24 > Adam D. I. Kramer, 8788–8790, doi: 10.1073/pnas.1320040111

CrossMark click for updates

Experimental evidence of massive-scale emotional contagion through social networks

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Author Affiliations

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

A correction has been published

A correction has been published

Abstract | Full Text | Authors & Info | Figures | Metrics | Related Content | PDF

Significance

We show, via a massive (N = 689,003) experiment on Facebook, that emotional states can be transferred to others via emotional contagion, leading people to experience the same emotions without their awareness. We provide experimental evidence that emotional contagion occurs without direct interaction between people (exposure to a friend expressing an emotion is sufficient), and in the complete absence of nonverbal cues.

This Issue

June 17, 2014
vol. 111 no. 24
Masthead (PDF)
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Don't Miss

Lens view takes advantage of the dynamic nature of the web; use it to explore PNAS articles in a new way.

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Abstract

Acknowledgments

- 700,000 Facebook users were put into an experiment that may have altered their emotions.
- The participants did not give consent and the study was not subject to third-party ethical oversight.

Emotional Contagion – What was done?

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- Users were put into four groups
  - ”negativity reduced”, for whom posts with negative words (e.g., sad) were randomly blocked from appearing in the News Feed
  - “positivity reduced”, for whom posts with positive words (e.g., happy) were randomly blocked
  - For each of those, there was a control group, for whom posts were randomly blocked without regard to emotional content
- People in the positivity-reduced condition used slightly fewer positive words and slightly more negative words in their own post, relative to control condition. Equivalent effect for negativity-reduced.
- This provides evidence of emotional contagion.

Emotional contagion – issues?

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- Participants did not provide any consent beyond the standard Facebook terms of use
- No opportunity to opt out
- The study had not undergone third-party ethical review
- The authors' IRB decided the study did not need ethics approval as it was conducted at Facebook
- As a private company, Facebook is not subjected to standards expected from public institutions

Emotional contagion -

- The experiment has been widely critizised
- This may have had unintended effects
- Companies probably have not stopped running these kinds of experiments
- But they stopped talking about them in public

Digital is different

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- Capabilities are changing faster than rules and laws
  - Ability to observe behaviour and collect data on unprecedented scale
  - Ability to do things to people without their consent (or even awareness)
- Researchers (often in collaboration with companies and governments) have more power over participants than in the past
  - Researchers must decide how to exercise the power this provides
  - Based on vague guidelines and evolving norms
- This does not mean that research in the digital is unethical
  - Researchers are well-meaning and show great judgement (generally)
  - But powerful capabilities and vague guidance put them in a difficult situation

Ethical principles

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Honesty & Openness	Participants must be able to make an informed decision
Integrity	Studies must be presented fairly and accurately
Confidentiality	Safeguarding participants' secrets
Privacy	Having control over personal information
Security	Protecting participants from participation repercussion
Legality	Abide by the law

Ethical principles: Honesty & Openness

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- *What is it?* Participants must be able to make an informed decision.
- Participants have the right to:
  - Understand the study taking place: motivation, rationale, time commitment.
  - Information about what is collected, potential risks and advantages.
  - Be able to accept, refuse or stop participating with no repercussions.
- Researcher has the responsibility to:
  - Get informed consent using a clear process.
  - Prevent pressure (or fake friendship) affecting participation decision.
- Problems: e.g. children/patients, public settings, social networks; studies where surprise or deceptions is essential

Are researchers allowed to lie to participants?

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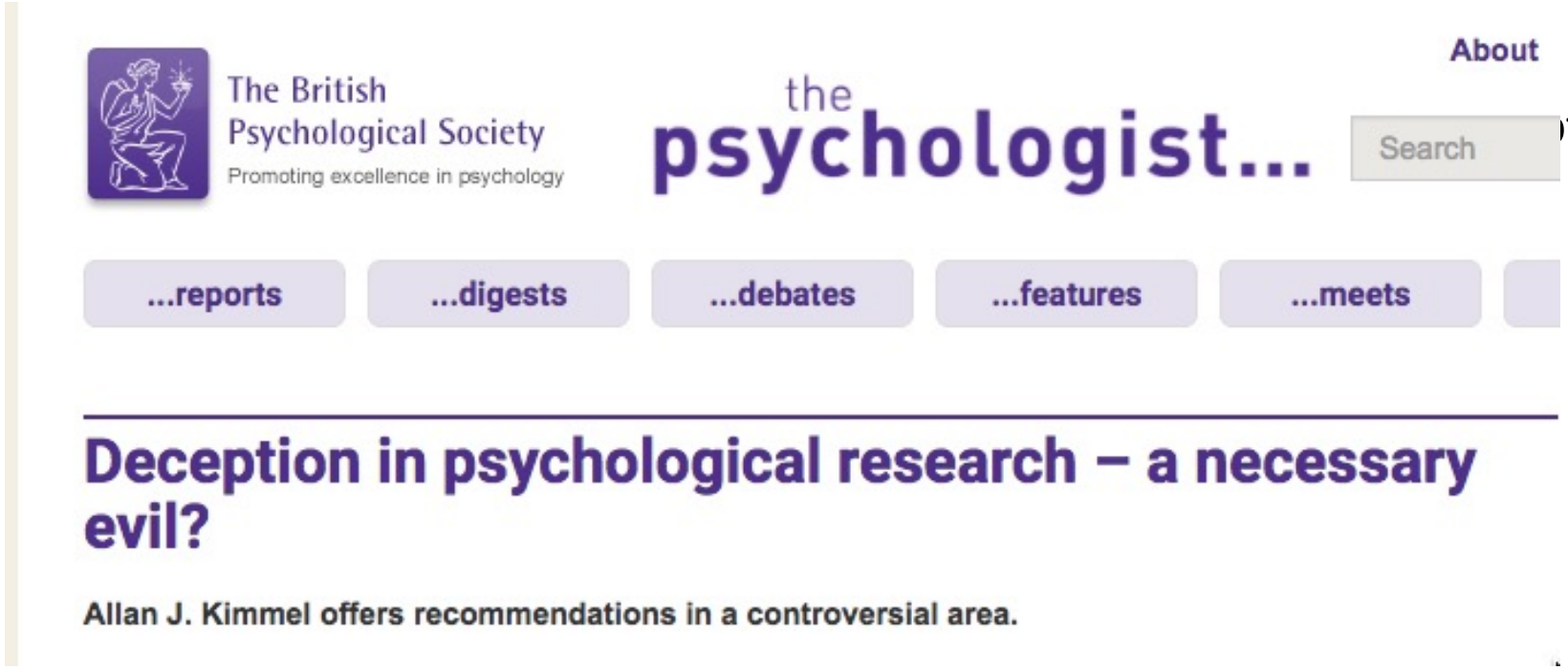

Ethical principles: Integrity

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- *What is it?* Studies must be presented professionally, fairly and accurately.
- Researcher has the responsibility to:
  - Capture and represent participants/peers objectively and accurately.
  - Ensure non-bias in analysis and interpretation processes.
  - Avoid misconduct: hoaxing, trimming, cooking of data.
  - Give credit where it is due:
    - Cite according to community conventions.
    - Do not misquote or misrepresent others.
    - Do not plagiarise.

Keep primary data and research evidence

- Lancaster University research ethics code of practice https://www.lancaster.ac.uk/research/research-services/research-integrity-ethics--governance/research-ethics/
- Failure to keep evidence for examination constitutes misconduct

(e) *Failure to manage and/or preserve data and primary materials*

This may include failing to ensure that relevant primary data and research evidence are preserved and accessible to others for reasonable periods after the completion of the research. Such conditions should also be applied where ownership of the data rests with third parties, for instance where there is commercial sponsorship of research.

Ethical principles: Confidentiality

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- *What is it?* Safeguarding participants' secrets.
- Participants have the right to:
  - Participate in confidence.
  - Set limits for what they decide is sensitive.
- Researcher has the responsibility to:
  - Ensure that the data does not leak beyond its limits.

Ethical principles: Privacy

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- *What is it?* Having control over personal information.
- Participants have the right to:
  - Participate without being identified.
  - Choose what is private information.
- Researcher has the responsibility to:
  - Ensure that data cannot be traced back to subjects.
  - Respect participant privacy.
- Aggregation of individual data, anonmysation v. pseudonomisation
- Problem: re-identification

Re-identification: example

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AOL Proudly Releases Massive Amounts of Private Data

Posted Aug 6, 2006 by Michael Arrington (@arrington)

61 SHARES

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Yet Another Update: AOL: "This was a screw up"

Further Update: Sometime after 7 pm the download link went down as well, but there is at least one mirror site. AOL is in damage control mode – the fact that they took the data down shows that someone there had the sense to realize how destructive this was, but it is also an admission of wrongdoing of sorts. Either way, the data is now out there for anyone that wants to use (or abuse) it.

Update: Sometime around 7 pm PST on Sunday, the AOL site referred to below was taken down. The direct link to the data is still live. A cached copy of the page is here.

AOL must have missed the uproar over the DOJ's demand for "anonymized" search data last year that caused all sorts of pain for Microsoft and Google. That's the only way to explain their release of data that includes 20 million web queries from 650,000 AOL users.

The data includes all searches from those users for a three month period this year, as well as whether they clicked on a result, what that result was and where it appeared on the result page. It's a 439 MB compressed download, expanded to just over 2 gigs. The data is available here (this link is directly to the file) and the output is in ten text files, tab delineated.

CrunchBase

AOL

FOUNDED 1985

OVERVIEW AOL provides various digital brands, products, and services to consumers, advertisers, publishers, and subscribers worldwide. The company's brand group segment offers original content produced by journalists, politicians, celebrities, academics, policy experts, freelance writers, and bloggers; curated content; curated and aggregated content from third parties; and user-generated content through ...

LOCATION New York, NY

CATEGORIES News, Digital Media, Content Creators, Advertising Platforms

WEBSITE

- 20 million web queries from 650,000 users
- AOL user name changed to random number
- Re-identification trivial based on query content

Ethical principles: Security

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- *What is it?* Protecting participants from participation repercussions.
- Participants have the right to:
  - Participate without consequent harm:
    - Physiological (physical harm)
    - Psychological (emotional)
    - Social (reputation)
- Researchers must also consider their own safety
  - Does the research expose the researcher to risk?
  - Consider: unsafe places; discomfort; disturbing data; …

Ethical principles: Legality

- *What is it?* Abide by the law.
- Participants have the right to:
  - Participate without conflict with the law.
- Researcher has the responsibility to:
  - Ensure compliance to the laws of the country and university/institution.
  - Ensure legality in:
    - Methods used
    - Direct consequences (e.g. influencing someone to commit a crime)

Covert Hooligan: Studying Football Violence

- Geoff Pearson, PhD at Lancaster on Legal Responses to Football Hooliganism
- Ethnographic approach: embedded amongst fans of Blackpool FC

During this period of research, Pearson was put under pressure to commit criminal offences as part of the group, which would crucially gain him the acceptance required to continue his research. To his surprise, the committing of minor offences such as pitch invasions and confronting rival supporters seemed to do the trick.

"My justification for this action at the time was that it enhanced my position in the field and I was accepted for the remainder of the season as one of the 'hardcore' despite my continual 'opting out' of more serious offences.

http://www.theterrestrial.com/sport/covert-hooligan-studying-football-violence-from-the-inside-dr-geoff-pearson/

Ethics and Law

- Frameworks for electronic privacy and ethical regulation:
  - EU General Data Protection Regulation (GDPR)
  - UK Data Protection Act 2018
- University resources:
  - https://www.lancaster.ac.uk/research/research-services/research-integrity-ethics--governance/
  - Research integrity
  - Data Protection
  - etc.

Ethics in Research – Key Points

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- Research involves human participation in many forms
  - Empirical research
  - Secondary data
  - Indirect involvement (read about Encore)
- Participants have rights, and researchers have responsibilities
- Ethical principles provide general guidance (but not complete answers)
- “Put yourself in everyone else’s shoes”: how will participants, stakeholders, journalists, the wider public react to your study?
- Think of research ethics as continuum, not as binary

Reading assignment and Quiz

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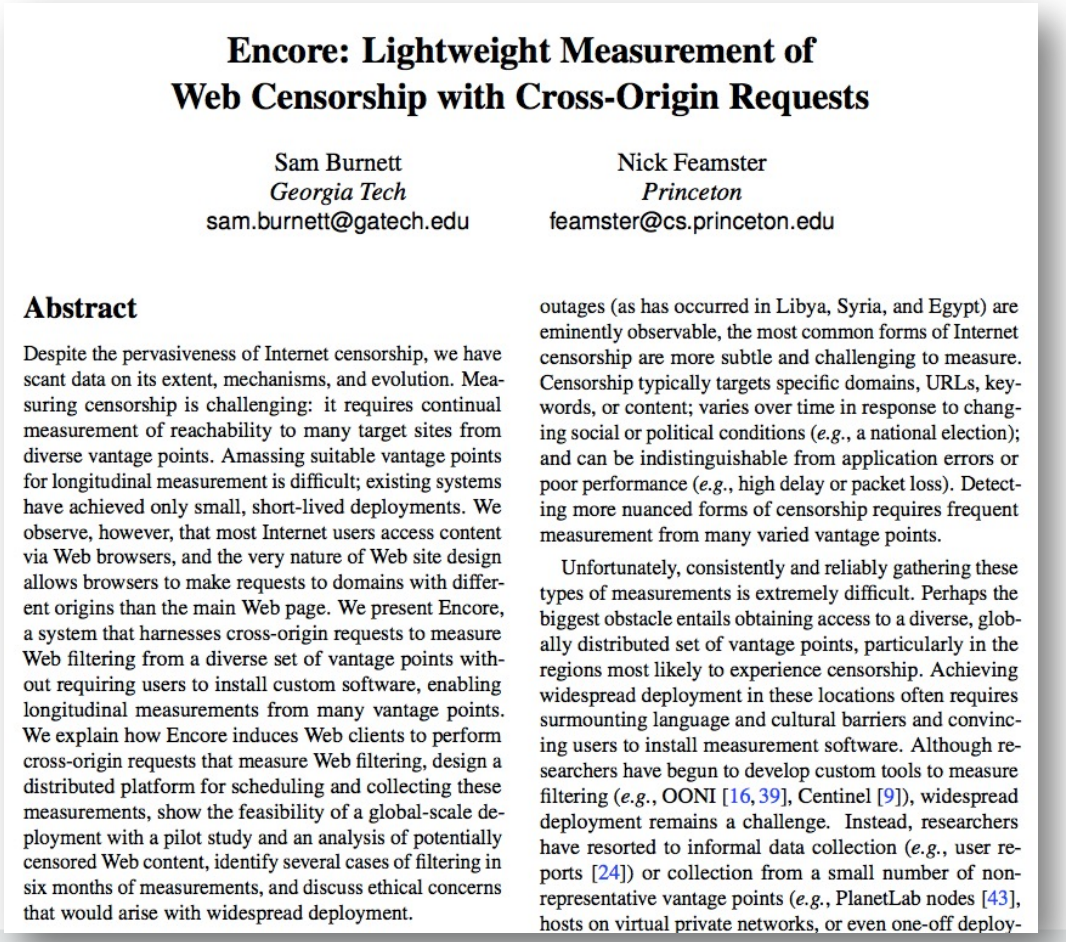

Encore: Lightweight Measurement of Web Censorship with Cross-Origin Requests

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Abstract

Despite the pervasiveness of Internet censorship, we have scant data on its extent, mechanisms, and evolution. Measuring censorship is challenging: it requires continual measurement of reachability to many target sites from diverse vantage points. Amassing suitable vantage points for longitudinal measurement is difficult; existing systems have achieved only small, short-lived deployments. We observe, however, that most Internet users access content via Web browsers, and the very nature of Web site design allows browsers to make requests to domains with different origins than the main Web page. We present Encore, a system that harnesses cross-origin requests to measure Web filtering from a diverse set of vantage points without requiring users to install custom software, enabling longitudinal measurements from many vantage points. We explain how Encore induces Web clients to perform cross-origin requests that measure Web filtering, design a distributed platform for scheduling and collecting these measurements, show the feasibility of a global-scale deployment with a pilot study and an analysis of potentially censored Web content, identify several cases of filtering in six months of measurements, and discuss ethical concerns that would arise with widespread deployment.

outages (as has occurred in Libya, Syria, and Egypt) are eminently observable, the most common forms of Internet censorship are more subtle and challenging to measure. Censorship typically targets specific domains, URLs, keywords, or content; varies over time in response to changing social or political conditions (*e.g.*, a national election); and can be indistinguishable from application errors or poor performance (*e.g.*, high delay or packet loss). Detecting more nuanced forms of censorship requires frequent measurement from many varied vantage points.

Unfortunately, consistently and reliably gathering these types of measurements is extremely difficult. Perhaps the biggest obstacle entails obtaining access to a diverse, globally distributed set of vantage points, particularly in the regions most likely to experience censorship. Achieving widespread deployment in these locations often requires surmounting language and cultural barriers and convincing users to install measurement software. Although researchers have begun to develop custom tools to measure filtering (*e.g.*, OONI [16, 39], Centinel [9]), widespread deployment remains a challenge. Instead, researchers have resorted to informal data collection (*e.g.*, user reports [24]) or collection from a small number of non-representative vantage points (*e.g.*, PlanetLab nodes [43], hosts on virtual private networks, or even one-off deploy-

- Encore is a system that researchers developed for measurement of censorship
- Read a one-page summary of how it works (on moodle)
- Think about ethical issues in the project BEFORE you do the quiz