

Emerging Ethics Norms in Social Media Research¹

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Defining ethical practices for research using data from digital and social media communities is an ongoing challenge. This paper argues that we should learn from practice: that researchers working with open and online datasets are converging around norms for responsible research practice that can help guide IRBs or alternative arrangements interested in regulating research ethics. It uses *descriptive* ethics to suggest *normative* ethics.

Just because a community has come to agreement around particular practices does not mean that these practices are *right*. Outside deliberation is still needed; researchers will likely never be entirely self-regulating. But growing consensus among researchers provides guidance as to what researchers feel to be reasonable practice; a first step for understanding responsible conduct of research.

This essay draws on qualitative interviews with digital and social media researchers (Shilton & Sayles, 2016), as well as a survey of 263 social science, information science, and computer science researchers who use online data (Vitak, Shilton, & Ashktorab, 2016). The interviews investigated the challenges researchers experienced when collecting, managing, and analyzing online data. Analysis of the interviews reveals a diverse set of ethical challenges that push at the boundaries of existing research ethics guidance. The interview data also describes existing practices for navigating ethical quandaries, and documents resources that help researchers meet ethical challenges. The analysis of the data points to opportunities for review boards and ethics researchers as well as new debates to undertake as a community.

Survey results demonstrate a set of emerging ethical norms in this community that go *beyond* IRB requirements, including increasing transparency with research communities, removing potentially identifiable outliers before sharing results, and engaging in deliberative ethics processes with colleagues in addition to IRBs. The results also reveal that neither discipline nor academic/industry affiliation correlate with differences in research ethics beliefs or practices. Social computing researchers in the computer, information, and social sciences think deeply

¹ Portions of this essay drawn from:

Shilton, K., & Sayles, S. (2016). "We aren't all going to be on the same page about ethics:" Ethical practices and challenges in research on digital and social media. In *Proceedings of the 49th Hawaii International Conference on System Sciences (HICSS 2016)*. Kauai, HI: IEEE.

Vitak, J., Shilton, K., & Ashktorab, Z. (2016). Beyond the Belmont principles: Ethical challenges, practices, and beliefs in the online data research community. In *Proceedings of the 19th ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW 2016)*. San Francisco, CA: ACM.

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about research ethics, and ethical disagreements are not disciplinary in nature (Vitak et al., 2016).

Both datasets reveal that research ethics require a deliberative, context-sensitive process. Ongoing reform of IRBs should focus on deliberation and context as guiding principles.

Background

In the U.S., research ethics have long been guided by the Belmont Report, which focuses on respect for persons, beneficence, and justice (Office of the Secretary of The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). Respect for persons has most widely been interpreted by ethics review boards as a mandate to obtain informed consent from participants when collecting private data. Openly-available digital and social media data may be interpreted as public, however, and collecting informed consent at scale to use this data may be difficult or impossible. But if we interpret respect for persons broadly, we must consider that much of this data documents work processes and practices that may have required informed consent for data collection in other settings. Contributors to online forums may have no idea such data could be harvested by researchers. For example, researchers who investigate sensitive issues such as values or political conflicts have struggled with whether informed consent was necessary (Koepfler, Shilton, & Fleischmann, 2013; Zhou, Fleischmann, & Wallace, 2010).

Beneficence is the second Belmont principle challenged by digital and social media data research. Generally understood as assessment of risks and benefits of the research, it is a principle that guides researchers to think through possible negative consequences of their work. One challenge of using online datasets is the difficulty of providing anonymity. Re-identification risks abound in big datasets (Lease et al., 2013; Ohm, 2010). It may also be difficult for researchers to anticipate risks and unintended consequences of online research (Zimmer, 2010). Researchers using digital and social media data must also consider whether their research presents a risk to the community they study. While anonymizing individual-level data may protect individuals from scrutiny and exposure, such research frequently identifies groups and communities. Negative results—or the attention and scrutiny such results can bring—may harm the community and complicate ongoing participation for members.

Finally, justice has widely been interpreted by ethics boards as attention to the selection of research subjects. This is an under-investigated area in digital and social media research (Hargittai, 2015). Online participants are largely self-selecting, and online community participants are generally more affluent and educated than the general population (Berinsky, Huber, & Lenz, 2012; Ross, Irani, Silberman, Zaldivar, & Tomlinson, 2010). It may also be difficult for researchers to tell if participants from vulnerable populations (such as children) are included. Reflection is needed about whether potential biases in the study of online data generate justice issues.

In 2002, the Association of Internet Research published guidance detailing questions for researchers to ask themselves when performing internet research, alongside case studies and other resources to help inform online research (Ess, 2002). These recommendations suggest that researchers consider the environment of their study, standards within their country and research community, and precedence for the type of research. The AoIR revisited its recommendations in 2012 and continues to advocate for flexible guidelines as opposed to fixed codes (Markham & Buchanan, 2012). Recent publications have focused on how flexible policies need to be in order to facilitate the wide array of current internet research (Munteanu et al., 2015; Warrell & Jacobsen, 2014).

Meanwhile, more specified codes of ethics for Internet research exist for international research contexts (e.g. (Felzmann, 2013)) and several universities have created their own guidance for researchers (e.g. (Office of the Vice President for Research, 2015; Penn State University, The Office for Research Protections, 2007)). The disparate nature of resources for ethical Internet research guidance begs the question: what are researchers using for guidance, and what are they doing in practice?

Interviews

We conducted 20 interviews with scholars in information technology, information systems, information studies, communication, business, and computer science (Shilton & Sayles, 2016). All participants were faculty at U.S. and European academic institutions, or researchers in consulting or industrial research labs. The interviews asked researchers about ethical challenges they faced and how they dealt with those challenges. Qualitative coding of interviews helped us group our findings into four main themes: ethical and regulatory challenges reported by researchers, how researchers discovered ethical challenges, researchers' practical solutions to ethical challenges, and resources requested by researchers for dealing with ethical challenges.

The ethical challenges reported by interview subjects were many and diverse. Some were predicted by the literature, including gaining consent, navigating restrictions by platforms, weighing risks versus benefits to participants, and defining sensitive information and participant privacy expectations. But concerns emerged that were largely unmentioned in related literature, as well. These included being perceived as spam, worries about judging participants, and a pervasive feeling that everyone else (commercial interests and governments) was using this data, and that academics therefore shouldn't be restricted from using it.

We also asked respondents how they had discovered ethical challenges in their research. Interestingly, none of the interview subjects reported being challenged on research ethics directly by ethics review boards. Instead, researchers reported being challenged by their peers, including peer reviewers and funding agencies, and their colleagues on interdisciplinary teams.

Practical solutions to ethical challenges demonstrated by researchers tended to group into two categories: discussion of how to make ethical decisions, and discussion of concrete actions.

Discussion of decision-making tools included consulting existing ethical guides and relying on existing social networks for advice. Discussion of concrete actions included providing transparency into research, removing non-consenting individuals from datasets, minimizing data collection, aggregating data, providing participant consent or control over data, and collecting only historical data.

Some researchers interviewed felt they had the resources they needed to deal with ethical issues, many citing the AoIR guidelines (Markham & Buchanan, 2012) as key guidance. However, most participants felt that having additional resources available would be beneficial. Request for resources fell into two categories: requests for structured codes of conduct, and requests for shared learning resources.

Survey

Based on the interview data, we developed a survey to elicit more generalizable data on the ethical challenges online researchers face, their current practices to respond to those challenges, and their ethical beliefs about what should be done in response to those challenges. We employed purposive sampling to identify individuals who were employed in research (as a doctoral student, postdoc, research scientist, faculty member, industry researcher, or otherwise in a field/organization/position that involves research with online data) and self-identified as conducting research with online user data. We identified eight conferences where research using online data is common and, when possible, authors come from multiple disciplines: CSCW, CHI, ICWSM, iConference, WWW, Ubicomp, CKIM, and KDD. We compiled a list of authors on papers published since 2011 that included “trace ethnography,” “big data,” “twitter,” “forums,” “text mining,” “logs,” “activity traces,” and/or “social network.” This resulted in approximately 2800 unique names. These participants received emails with custom links plus one reminder. The direct email component was complemented by distribution of the survey link via social media and mailing lists targeting researchers in AoIR, AIS, CITASA, AIS ICA, STS, and NCA. This strategy increased the pool of potential researchers beyond those submitting to the identified conferences. We received 263 completed surveys.

We evaluated the variation in responses to thirty Agree/Disagree statements about research attitudes and practices to establish where our sample found common ground and where they expressed significant differences. Four items were cohesive across respondents, suggesting a set of foundational research practices for conducting research using online user data. These included *removing a subject from a dataset* when the individual formally requests it; *talking to colleagues and review boards* about ethical considerations in one’s research; *making research results (not raw data) available to participants* upon study completion; and *being careful about reporting on edge cases and outliers*.

When looking at the corpus of responses with significant variance, we expected these differences to be attributed to disciplinary backgrounds; however, only deception differed significantly

across disciplines, with CS and IS scholars expressing significantly lower agreement than communication scholars (but not all social scientists).

Another analysis evaluated whether individual characteristics are associated with a more codified set of ethical beliefs, attitudes and practices by reporting agreement with items more closely aligned with formal ethical codes such as the Belmont Report or rules specified by ethics review boards. In the survey, we asked participants a series of questions about their attitudes toward, and engagement with, various research practices. Through exploratory factor analysis of 35 items, we created a reliable nine-item measure ($\alpha=.71$, $M=4.00$, $SD=.49$) that captured attitudes toward a variety of behaviors drawn from IRB codes of conduct, AoIR recommendations, and earlier interview data about emerging online research practices. Participants with a higher score on this scale also report spending more time reflecting on and talking with others about ethical aspects of their research. We characterize respondents who agree with items in this scale to have a more *codified* set of ethics practices. Participant responses on the codification of ethical attitudes measure can be grouped into four categories. One attitude echoes the current guidance of the Belmont Report: researchers with a codified set of ethical attitudes believe they should only collect online data when the benefits outweigh the potential harms. But there are three categories of emerging beliefs and practices that go beyond the Belmont Report's recommendations: (1) transparency with participants, (2) ethical deliberation with colleagues, and (3) caution in sharing results.

Transparency with research communities is an important part of ethical practice for online research. Agreement with statements that researchers should “notify participants about why they’re collecting online data,” (66% agreement) “share research results with research subjects,” (69.2% agreement) and “remove individuals from datasets upon their request” (91.5% agreement) all highlight the importance of transparency in online data research. These practices require either a consent mechanism or a degree of transparency with data subjects.

Transparency entails a range of practices, from notification before data collection to debriefing after, and can take many contextually-appropriate forms. We suggest that transparency focus both on *intent* (what you are doing with data and why) and *practice* (how you’re getting the data). Transparency is a flexible principle that enables subjects to both understand their participation in research and request removal from datasets if necessary. Achieving transparency, however, may be more difficult for some kinds of data collection (e.g., large-scale collection of Tweets) or for data analyzed by platform hosts. Creativity in modes of transparency is an open area for research ethics innovation, and will ideally involve collaboration across disciplines and work environments.

Ethical deliberation with colleagues in addition to ethics review boards is another important part of ethical practice for online research that goes beyond the Belmont principles. In the codification of ethical attitudes measure, this is captured in agreement with statements that researchers should ask colleagues about their research ethics practices (87.1% agree), and ask

their IRB/internal reviewers for advice about research ethics (73.3% agree). This principle maps to AoIR's broader emphasis on a deliberative process, including to "consult as many people and resources as possible" (Markham & Buchanan, 2012). We agree with this best practice and emphasize that expanding the pool of resources *beyond* direct colleagues is an important step for researchers. Colleagues may struggle to be honest in their assessment of projects; relative isolation from social pressures is an advantage of review bodies such as IRBs. Researchers should discuss projects with review boards before performing any online data collections. Even if not strictly required by current IRB standards, such discussion will help both researchers and review boards to clarify best practices and enhance the review process for future projects. In turn, we are hopeful these discussions will help review boards better understand changing technological research practices, and become better resources for evaluating online research ethics.

Finally, the codification of ethical attitudes measure suggests that researchers should be *cautious about sharing results that include (potentially identifiable) outliers*, with 88.6% of respondents agreeing with this principle. However, such guidance does not specify what constitutes "careful." Best practice for taking care with outliers is hard to define and likely varies on a case-by-case basis. We believe researchers can address ethical concerns surrounding outliers (e.g., their identifiability within a dataset) by seeking outside advice and feedback as part of a deliberative ethical process. Ethical considerations for *reporting* data highlights AoIR's guidance that ethical challenges can occur throughout the research process (Markham & Buchanan, 2012), and that researchers should consider consulting with colleagues and review boards at later points in the research process than is traditional. For example, issues with the release of the T3 dataset might have been avoided had outside parties with deeper knowledge of the site and anonymization pitfalls been consulted (Zimmer, 2010).

Our paper also points to areas of significant disagreement in the online data research community: use of non-representative samples; removal of unique individuals from datasets; the tension between obtaining consent and collecting data from some sources (and whether it is possible to obtain informed consent for large scale studies at all); the ethics of ignoring Terms of Service; the ethics of deceiving participants; and the necessity of sharing data with research subjects. These are critical areas of disagreement on which to focus consensus-building efforts. That said, ethics is not just a process of consensus-building around best practices; ethical principles are not made by majority rule. Researchers may disagree on practices that ethicists, policymakers, or the public feel are important. Further, context-dependent factors will prevent full consensus on *all* practices.

Finally, our study illustrates that researchers in a variety of social computing fields are thinking deeply about research ethics in their work. Perhaps as a result of recent media attention to research ethics, or because ongoing educational efforts, it is clear that considering responsible conduct of research is a part of many researchers' practice.

Discussion

Social computing researchers are both grappling with difficult ethical issues and coming to new consensus about best practices for responsible conduct of research. IRBs, or alternative regulatory structures, can learn from the ethics practice already occurring in this community.

This work also suggests that ethics review boards, or alternative institutional structures, might best be positioned as consultants to research design, rather than post-hoc enforcement mechanisms. Industrial research labs are already exploring models that consult on research design rather than review according to a narrow set of rules (Bowser & Tsai, 2015); academic institutions might learn from their experiences.

The data also suggests that peer reviewers sometime serve as post-hoc ethics enforcement mechanisms. Challenges by reviewers and peers were the most frequently-cited methods of discovering new ethical challenges. It is not surprising that some internet research communities are regulating themselves: this is an important function of anonymous peer review. Positioning peer reviewers as ethical referees takes advantage of existing work practices, as academics place great importance on reviewing each other's work. However, such review frequently happens once research is completed, meaning it potentially wastes researchers' time, and worse, doesn't mitigate harm. There is also likely great variability among reviewers of their comfort and expertise flagging ethical concerns. Further research is needed to understand how and why reviewers flag ethical concerns in digital and social media research, and whether this varies across disciplines.

Finally, there is a clear opportunity for platforms for shared learning in the internet research ethics space. Publications focused on ethical research exemplars; knowledge bases for consent, de-identification, or data aggregation techniques; or language for expressing risks and benefits to participants would all be welcomed by the internet research community.

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