FEDERAL ETHICS REGULATIONS GOVERNING
INTERNET RESEARCH: NEW EDUCATIONAL
CHALLENGES FOR UNIVERSITIES

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DIGITAL RESEARCH ENVIRONMENTS

The Internet’s continual evolution creates significant ethical challenges for online researchers. Disruptive innovation, almost by definition, is difficult to predict (Koehn, 2010). Awareness and understanding of the impact of emerging technologies upon the research endeavor sometimes lags behind the rapid pace of these advances. However, this mismatch often can result in a lack of guidance, which can lead instead to an ad hoc approach toward determining how best to address ethical considerations arising from scholarly research activities that leverage the functionality of new technologies.

Examples of such virtual research settings include:

- Blogs
- Chatrooms
- Computer-supported collaborative workspaces
- E-commerce
- E-mail
- GIS and other location-based technologies, such as Foursquare
- Instant messaging
- Listservs
- Massively multiplayer gaming environments
- Newsgroups
- Online communities
- Podcasts
- Social networking sites, such as Facebook and LinkedIn
- Twitter and other socially-mediated communication technologies
- Virtual worlds
- Webcams and video chat
• Web sites

To date, most published research regarding elements of Internet research ethics focuses on either Internet 1.0 (text-based) or Internet 2.0 (relational) environments. In contrast, my current research examines how to interpret federal research ethics regulations in the context of new ambient intelligence environments. They include settings in which information scientists, and other social scientists, conduct large-scale research projects involving dynamic sensor technologies. These pervasive and autonomous devices collect and analyze real-time data, often in public spaces. This emerging digital paradigm has been called “Internet 3.0,” the “Internet of Things,” or “everyware.” Internet 3.0 research activities implicate ethical concerns such as surveillance, privacy, and informed consent. The following table summarizes some of the ethical challenges encountered when conducting research in each of these very different venues.

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ETHICAL PRINCIPLES FOR ONLINE RESEARCH

Since the contemporary research ethics movement emerged following the Tuskegee and Nuremberg atrocities, fundamental research ethics principles tend to emphasize the obligation to avoid physical or mental harm to research participants. As a result, one of the most important ethical issues addressed in the seminal Belmont Report involved the negotiation of informed consent. When the Belmont Report was published in 1979, access to computing facilities was not yet widely available, even within the university community. Moreover, obtaining access to such technologies for scholarly research was often prohibitively complex and expensive. Accordingly, the Belmont Report’s authors paid relatively less attention to ethical concerns related to the use of online technologies in research. Today it remains an open question whether, and how effectively, ethical rules for human subjects research might transfer to a virtual environment, grounded as they are in the tangibility of the physical world.

The Association of Internet Researchers established an ethics committee which produced an early set of interdisciplinary recommendations for social science researchers in late 2002 (AOIR Ethics Working Committee, 2002). The AOIR working group has promised, but not yet delivered, an updated version of those guidelines intended to address Internet technologies developed since that period (Buchanan, Ess & Markham, 2010). The American Psychological Association also appointed a committee to explore these issues further. Their report contained suggestions for research projects such as psychological surveys or experiments (Kraut, Olson, Banaji, Bruckman, Cohen, & Couper, 2004). However, more qualitative methods, such as discourse analysis, participant observation, or social network analysis, were not included in that assessment, which reduced its utility as a source of ethical guidance.

Meanwhile, new technological tools and research environments continue to emerge, presenting unanticipated questions to be addressed in terms of the ethical foundations established by the Belmont Report. One such ethical debate followed the Library of Congress’ 2010 announcement that it would archive for research purposes all public tweets sent via Twitter since 2006 (Library of Congress, 2010a). Its stated goal was to capture and preserve for future researchers a corpus of Twitter messages that could provide a multifaceted snapshot of the human experience at any given moment—not only during high-profile
events, but also as reflected by a public chronicle of everyday lives and activities on Twitter.

However, many commentators expressed dismay that their tweets would be aggregated and searchable, even though technically that had always been true for any public Twitter stream. Those uncomfortable with the knowledge that the details of their Twitter messages might live on in perpetuity may have grasped the public nature of such messages in the abstract, but still may have believed that their tweets were directed towards a targeted audience of friends and followers, and were never intended to serve as research data—an important distinction. As a compromise, the Library of Congress subsequently clarified its Twitter acquisition and distribution policies by imposing a six-month embargo on making messages from its archive publicly available to researchers (Library of Congress, 2010b).

Most training in Internet research ethics currently occurs during stand-alone workshop sessions organized by Internet researchers themselves, at annual conferences within social science disciplines that conduct online research. Additional research ethics resources are available for those engaged in Internet research, as well as for those who review and approve such research at educational institutions. Recommended works include Readings in Virtual Research Ethics: Issues and Controversies (Buchanan, 2004); and The Ethics of Internet Research: A Rhetorical, Case-Based Process (McKee & Porter, 2009). Scholarly articles published in the International Journal of Internet Research Ethics also can provide guidance for students, principal investigators (PIs), and institutional review board (IRB) members.

A recent call to create a new manifesto of research ethics for e-research and the computational social sciences is a welcome step towards encouraging debate within the profession regarding ethical implications of emerging research environments (eResearch Ethics, 2010). This collaboration among European educational institutions invited comments regarding ethical concerns associated with the use of digital research tools, such as confidentiality, anonymity, and the sharing and re-use of linked datasets. The Center for Information Policy Research at the University of Wisconsin-Milwaukee’s School of Information Studies also received a National Science Foundation (NSF) grant to develop an online Internet Research Ethics Digital Library, Resource Center, and Commons (CIPR, 2010).
IRB ROLES AND RESPONSIBILITIES

CIPR affiliates Buchanan and Ess (2009) conducted an extensive NSF-funded survey of IRB members at U.S. educational institutions. Preliminary findings indicated that IRB members often feel underprepared to evaluate study protocols involving online research methods. Buchanan and Ess’ review of the 334 IRBs investigated in their study revealed that many board members remained unfamiliar with the process of identifying and analyzing specific ethical issues associated with designing and conducting Internet research studies. Less than 8% of IRBs have developed formal Internet research guidelines, while another 17% indicated that they were in the process of developing such materials. IRB members indicated that they were less comfortable approving online research studies which they did not fully understand, such as online surveys (Buchanan & Hvizdak, 2009).

Buchanan and Ess previously had participated in the 2002 working group sponsored by the Association of Internet Researchers that developed a set of ethical guidelines for conducting online research. They were disappointed to discover, however, that most IRB members in their 2009 study reported that they were unaware that such useful guidance existed. This finding was particularly problematic in light of the fact that an increasing number of researchers have conducted Internet-based research during the past fifteen years. In response, Buchanan organized a workshop on Internet research ethics for IRB members and staff in December 2010 (PRIM&R, 2010). For this reason, IRB members should be viewed as a potential audience for university training in Internet research ethics as well.

Online researchers have become more outspoken regarding the critical role of IRBs in approving Internet-based research projects, and the perception that the IRB risk assessment process may be outdated. For example, in November 2009, the annual meeting of the American Society for Information Science & Technology included a session entitled “Institutional Review Boards: Ethics, Regulations and the Research Agenda” (ASIST, 2009). Panelists discussed the difficulty of educating IRB members at their universities who may be unfamiliar with the types of technologies used in Internet 2.0 research. They noted that the rapid advance of online technologies may conflict with the more measured pace of IRB review.

But rather than perceiving the IRB as a roadblock in the process of implementing an online research study, one panelist suggested viewing the IRB process as a dialogue between the digital researcher and the
board (see also Sales & Folkman, 2000). In this model, the final study design would emerge collaboratively and iteratively, as the IRB progressively learns more about online technologies with the researcher's assistance. Another panelist urged Internet researchers to serve on IRBs themselves, in order to help bridge the experiential gap between conducting virtual research and approving it. A final recommendation was to emphasize Internet research ethics considerations within doctoral courses, and during students' work as research assistants, so that the next generation of Internet researchers will view IRBs as a resource to engage, rather than as an impediment to overcome, when developing new online study designs.

**FEDERAL RESEARCH ETHICS TRAINING**

Effective for grant proposals submitted on or after January 4, 2010, all undergraduates, graduate students, and postdoctoral researchers supported by NSF research project funds must complete an educational module in research ethics at their institution (NSF, 2010). The NSF has a long history of sponsoring research ethics training. For example, during 1995-2006, the Association for Practical and Professional Ethics hosted an annual series of week-long seminars for graduate students in the physical sciences and social sciences nationwide (Schrag, 2008). Called Graduate Research Ethics Education (GREE), the project produced a set of monographs and case studies for teaching research ethics. I participated in GREE during summer 2005 (Ryan, 2008).

Starting in 2005, the NSF also sponsored a multi-year collaborative project among eleven universities called Land Grant Universities in Research Ethics (LANGURE, n.d.). LANGURE produced a model research ethics curriculum called the Open Seminar in Research Ethics. The Open Seminar was created to train doctoral students in engineering and the physical and behavioral sciences in the responsible conduct of research. In addition, the LANGURE consortium hosted a workshop in North Carolina during July 2010 that prepared faculty to use the Open Seminar curriculum, which is freely available online.

However, the Open Seminar represented a missed opportunity, in that it lacked any sustained discussion of Internet research ethics. The model curriculum referred only briefly to human subjects research in online environments, while addressing the ethical obligations of computer scientists. Those duties were described in terms of their professional responsibility to develop hardware and software that
performs safely and reliably (Wright, 2007). (The training module does note that many computer science students either were unaware of requirements to meet ethical standards for human subjects research with respect to human-computer interaction, or believed that those precepts were irrelevant for their field.) Yet given the increasing amount of human subjects research conducted in virtual contexts, any mandate to understand the basic elements of research integrity should include an occasion to learn more about circumstances in which online research environments pose unique ethical challenges for researchers across a wide spectrum of academic disciplines.

RESEARCH ETHICS PEDAGOGY AT MICHIGAN

University of Michigan faculty members serving on my dissertation committee include the director of a new undergraduate program in informatics, who teaches a capstone course in information technology ethics. Another member directs the campus-wide Center for Ethics in Public Life, while a third formerly co-chaired Michigan’s IRB for the behavioral sciences. My analysis regarding how best to train students, PIs, and IRB members to recognize and evaluate potential ethical dilemmas encountered during Internet research activities has benefited from their uniquely informed perspectives.

Individual departments at Michigan traditionally have been responsible for providing research ethics education to each graduate student cohort. For example, during my first semester as a doctoral student, I received basic research ethics training during a required research methods seminar. I also delivered three mandatory presentations to fellow doctoral students in 2005, 2007, and 2008 on the specific topic of research ethics for online researchers.

In addition, all Michigan PIs conducting human subjects research must demonstrate mastery of a research ethics tutorial called Program for Education and Evaluation in Responsible Research and Scholarship (PEERRS). It is integrated into an online regulatory management system called eResearch that is used to oversee research protocols requiring IRB approval. However, this brief training module emphasizes compliance with federal regulations, rather than presenting a theoretical framework upon which researchers can base future ethical judgments.

During academic year 2010-11 the Rackham Graduate School, which oversees graduate education at Michigan, implemented a series of
campus-wide workshops offering research integrity training for all
graduate students. Topics included:

- Authorship and publication
- Collaborative research
- Contemporary ethical issues
- Copyrights, citations, acknowledgements and publishing essentials
- Data management
- Research and the mentoring relationship
- Research misconduct
- Understanding and avoiding plagiarism
- Whose ideas, whose words? Advanced research methods

These two-hour events were advertised as intended to help meet
new federal requirements that students funded by NSF grants receive
training in the responsible conduct of research. However, preliminary
informal feedback indicated that these workshop themes may be too
generic to capture the nuances of students’ respective fields. Moreover,
attendance at these sessions is not mandated by Rackham, which reduces
any incentive to participate. Making campus-wide research ethics training
mandatory for all graduate students (not simply those receiving federal
funds), augmented with disciplinary-specific workshops offered by
individual departments, might provide the breadth and depth needed to
provide real value for graduate students.

SUMMARY OF RECOMMENDATIONS

I propose creating a new federally-funded model curriculum in
Internet research ethics. Interactive online training programs could be
regularly updated in response to ethical challenges generated by
subsequent technological advances. Students, faculty, and IRB members
who engage in, facilitate, or evaluate research conducted within digital
environments would benefit from such materials. Free public access also
might help deter unintentional violations of fundamental research
integrity principles online.

The NSF-supported Internet Research Ethics website currently
solicits crowdsourced case studies and related informal resources that aid
in identifying best practices for conducting digital research within several
different scholarly disciplines. However, my plan specifically endorses a
formal commitment to develop national standards for Internet research
ethics education. A searchable, dynamic data repository of regulatory
knowledge and ethical guidelines could contribute to the establishment of a uniform set of professional norms for the responsible conduct of Internet-based research. I would be pleased to participate in such an initiative.

REFERENCES


