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Ethics, Logs and Videotape: Ethics in Large Scale User Trials and User Generated Content

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Abstract

As new technologies are appropriated by researchers, the community must come to terms with the evolving ethical responsibilities we have towards participants. This workshop brings together researchers to discuss the ethical issues of running large-scale user trials, and to provide guidance for future research. Trials of the scale of 10s or 100s of thousands of participants offer great potential benefits in terms of attracting users from vastly different geographical and social contexts, but raise significant ethical challenges. The inability to ensure user understanding of the information required to provide informed consent and problems involved in making users aware of the implications of the information being collected all beg the question: how can researchers ethically take advantage of the opportunities these new technologies afford?

Keywords

Ethics, user trials, App Stores, mass participation

ACM Classification Keywords

H.5.2 User Interfaces:
Evaluation/methodology

General Terms

Experimentation, human factors, theory.

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Introduction

Large-scale user trials have been growing in popularity in recent years, mirroring the relative ease with which participants can be recruited, software distributed and data collected via the Internet. 'Mass participation' trials [3] are at the forefront of this trend, taking advantage of the explosion in smart phone usage and the swift rise of mobile 'App Store'-style distribution methods. Hundreds of thousands of users from all over the world can be recruited, thereby potentially avoiding the effects of small sample sizes that might occur in studies using more traditional, locally based deployments. Researchers in ubiquitous computing have only begun to release research applications through 'app store' public software repositories in the last couple of years. For example, CenceMe [11] released at the launch of the Apple App Store in July 2008, uses data on each user's location, physical motion and ambient audio to automatically update social networking sites with his/her current activity. Hungry Yoshi [10], in addition to gathering log data on user interactions and location, also contains a questionnaire section to gather qualitative data. The game mechanism was designed to encourage users to submit this data, and to allow researchers to directly contact users for interview. Other research engages members of the public in new forms of 'citizen science' projects, e.g. atmospheric monitoring [1] and measuring noise pollution (www.noisetube.net), that aim to involve large numbers of people in collecting data about their environment. These large trials not only offer huge opportunities for the community, but also world-scale challenges of validity and ethics.

At the same time, new concerns are arising among the general public. There has been a recent backlash

against mobile applications' logging of data irrelevant to the functionality of the application, with applications such as TaintDroid [4] displaying the information transmitted by other Android applications. There have also been negative reactions to the Facebook iPhone application update sharing phone numbers [14] and researchers at U. Bath covertly tracking the Bluetooth devices of thousands of people—and then publicly releasing the software so that it has been deployed in more than 1,000 locations worldwide [15]. Researchers have a responsibility to the community not to 'poison the well' by fuelling such mistrust.

The following sections describe a number of specific areas in which we believe existing ethical guidelines fail to scale up to the new methodologies and how the community would benefit from a new set of principles.

Consent

An important point is the nature of the consent researchers can obtain via the Internet or a downloaded app. The standard procedure of presenting a briefing page of terms and conditions (T&Cs), and asking for confirmation of understanding and acceptance before use, has been seen to fail to produce truly informed consent. The percentage of people who read T&C pages on installation of desktop software was reported in [5] as being only 28%. Only 30% of respondents to a survey in an application [10] indicated understanding that they were part of a university trial: of those interviewed directly none had read the T&Cs.

Briefings at a distance over the Internet exacerbate a problem that may exist in traditional trials: it may be impossible to verify that a user understands the T&Cs of participation to give informed consent, and is of an

age and condition to give it—even though he or she explicitly states these points to be true. Nor is it clear that such T&Cs and the ultimate goals of a study are considered valid, legal and appropriate in the multitude of countries and cultures that may be involved in a trial [7]. A new method must be found to discharge our ethical responsibilities as researchers in this regard. The variation in ethical clearance procedures is also noteworthy; for example, in various European countries/institutes there are no formal approvals for HCI research studies, while other countries often have quite strong constraints and official procedures to follow for any trial with participants.

Data Control

It may be hard to control who becomes a participant when publicly releasing an application, as software will be made freely available for anyone with the requisite hardware to download and install without specific screening from trial organisers. It might be easier to anonymise data in a mass participation trial by aggregating data across subjects than in a trial with smaller numbers, yet identification of participants is increasingly difficult to define or avoid due to the variety of data that could potentially be specific to one person, e.g. GPS traces, patterns of web page access, social networks and even accelerometer traces from holding a device [12]. To what extent do researchers have the duty to anonymise data, and to what practical lengths should they be obliged to go to in order to carry this out? Additionally, although pre-experiment briefings generally inform participants as to what data will be collected, how it will be secured and stored, and what may be published, such trial data may well be copied, commented on and published by participants, without researchers' knowledge, e.g. on YouTube, on

their own blogs, and on Facebook. What responsibility do researchers have for such self-published data, and is it valid to collect and analyse it in trials?

If users declare they no longer wish to be part of the study, standard practice dictates that researchers would delete data collected on them. However, information that has been used within an application or community, configurations or forum posts, or information that has been combined into the products of other users, such as mash-ups or derived configurations raise significant problems. Beyond the purely practical challenges in deleting this data, the seemed ethical commitment to purge all data from one participant could be seen to cause harm to another.

Current Guidelines for Researchers

Perhaps the best-known guidelines specific to mobile and ubiquitous computing are those in Greenfield's *Everyware* book [6]. High-level guidelines such as *do no harm* and *default to harmlessness* were discussed, and are still generally applicable, but have yet to be contextualised to suit new ubicomp research practices. New technologies support not only new research practices that challenge the old, but also new user practices. The widespread use of web sites such as YouTube and Facebook, and the near-ubiquity of cameras on phones make some established guidelines, e.g. in Mackay's CHI95 *Ethics, Lies and Videotape* paper [9], seem rather quaint. People are increasingly accustomed to the dissolution of social barriers of privacy driven by the traditionally poor privacy controls provided by such online social networking sites [13].

The British Psychological Society (bps.org.uk) offers guidelines for those conducting research over the

Internet [2]. On the issues of identity and consent the BPS recognise the problems of communicating via the Internet and suggest that the study be conducted in a manner acceptable to those unable to give informed consent. This would involve not exposing participants to sensitive, emotive or disturbing information. On the issues of withdrawal, it is accepted that users may stop participating at any time, but that withdrawal should be intercepted and a debriefing text presented to the participants. Unfortunately this is not always possible with mobile applications, and such presentations of text being ignored is part of the problem. On the issue of being unable to monitor and respond to the reaction of a participant, the researcher is advised not to “create more extreme reactions than those normally encountered in the participants’ everyday lives” [2].

Conclusion

We propose that the time is ripe for reconsideration of established research norms and practices, and researchers’ understanding of public practices and sensitivities, so as to strike a new balance between invasiveness and utility. There are many ethical challenges being faced by researchers in many different fields involving human trials as a result of the fast pace of technological advancement and incorporation into our everyday lives. With these challenges comes a number of exciting opportunities to use these new technologies to inform not only the design of the novel, but the understanding of the mundane. During the course of this workshop we aim to provide guidelines and understanding for the community. In understanding how we, as researchers, can use this technology in ways which allow us to answer new and old questions with new levels of validity without harming the moral integrity of the community we can

help inform, direct and reassure research for years to come.

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