Ethics and Technology:
An Interview with Judah Schwartz

By Daniel Cogan-Drew

As the use of technology becomes an increasingly more significant part of education, consideration of the legal and ethical issues that concurrently impact teaching, learning and research also take on greater importance. In light of avoiding the situation of the Stanley Milgram experiments of the 1960s (punishment shock therapy on subjects), we are required to evaluate the contextual nuances of each situation. The snowball effect of seemingly innocent methods requires new ways of regulation as well as new ways of approaching our work in academia.

Judah Schwartz is visiting professor of Education and research professor of Physics at Tufts. He is emeritus from the Harvard Graduate School of Education and MIT. This interview is based upon an unpublished manuscript, “Some Ethical and Philosophical Issues Arising from the Use of Technology in Education.”

Judah: Let’s distinguish between someone who undertakes a research project that says Element A of society is collecting certain kinds of data, Element B of society is collecting other kinds of data and so on. I see an opportunity to use the data already being collected in an interesting new way. And that raises one kind of issue. I think a different kind of issue is when somebody says, “I would like to answer the following sets of questions for which I have to collect the following sets of data that are not now being collected and therefore I have to incur expenses of equipment and protocols and so forth in order to get those data in order to, presumably, answer these questions”. I see these as raising two quite different kinds of ethical questions. In the second case, you know the institutional review board (IRB), will say, “Wait a minute” if you do this then you have to consider the other issue. So there are fairly defined institutional mechanisms in place to detect, as best they can, potential abuse of that sort. It seems to me the much more delicate nuance, and ultimately difficult question, is the first question. You know where there are data from the admissions office and there are data from the campus control and there are data from alumni organizations and one wouldn’t think a priori that it would be interesting to look across these three sets of data to find something. But it might be and you might find out that a child of a prominent alumnus has been arrested several times and was even known to be arrested before coming to the university but the university applied a different standard, … I don’t claim that’s the most outlandish juxtaposition that one can make but the point is that one can make outlandish juxtapositions and that this was precisely the issue that caused the downfall of the proposed total information project that was the Homeland Security Project … because they were going to collect all possible data and worry about outlandish or not outlandish juxtapositions after the fact.

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Dan: What are the safeguards against such outlandish juxtapositions? It occurs to me at the moment that in order to gain validity in an academic context, these juxtapositions need to be verified or accepted into the community through a refereed journal or acknowledged publication, because with the ubiquity of electronic communications you can publish findings and you can create your own media storm over findings that may not be valid.

Judah: Which brings us back to the issue of the fidelity of the archives that are accessible. Because the archives grow in essentially an unregulated way, the question of the believability of the computer as an archival medium is now one that has to be reinspected. It's hard to conclude that there are really ironclad ways of doing this well when all archives were on paper and available in locations known as libraries. The essential controlling mechanism was who has the resources necessary to publish, distribute and maintain these things. All questions of resource become, I don't want to say irrelevant, but certainly so dramatically changed that it's not a question of difference in degree; it's a question of difference in kind.

Dan: In thinking about the question of the use of computers as an expository medium, you had mentioned in your article the case of Channel One which is this commercial TV production delivery device into schools which I've had first-hand experience with myself as a teacher where this intrusion would happen everyday from 8 a.m. to 12 p.m. complete with candy bars and so forth. In reading your paper and thinking about the Channel One equivalent in academic research, there are many popular examples that often come into conflict with research interests. Should industry ever be trusted to support research and what are the implications of the funding sources? In talking about computers in research, do you see a Channel One scenario?

Judah: Well, it's very dicey. For example, there are elements here that are completely analogous to the K-12 situation. There was a time when Apple pushed very hard on California state legislature to go get subsidized Apples in every classroom and beyond with the full expectation that this would grow a generation of people who would be predisposed to using Apples instead of PCs. It's not always as blatant at the university level, but you can well imagine that if some hardware manufacturer came in to a college and said we would equip all of your labs with Model X and test equipment at no cost you would ... The school would a) have a hard time saying no and b) would have to be blind to the intent of the donor... Channel One was just one step removed from that. No one was asking the kids to Channel One as grown-ups but they were asking the kids to eat candy, not only as grow-ups, but after class.

Dan: This brings to mind that the idea that need is relative, that people often talk about “cash poor” or “cash strapped” public schools, but that most universities, in one context or another, would also probably characterize themselves as that, in that they also fall prey to –

Judah: You know I don't know how you resolve this. I don't think it's an issue that inherently is linked to technology. I think that technology offers another channel, if you'll forgive the pun. It's not inherent to technological issues. Well, it's not even an inherently technological issue at K-12.

Dan: If a faculty member wanted to engage in research in the use of simulations of modeled environments, again I was thinking of a scenario in which the researcher declared rules to the environment and said that these models will obey these rules and then wanted the subject to interact with these models. I was thinking of a scenario in which some of the rules of the model's environment would pose ethical questions to the research as to their impact on the subject, the student let's say, whom they want to interact with the model. There are things that they might have to consider if they want to study how the rules of the model might impact the user of the model. How do I make this more explicit? That they are going to teach the model to behave in a certain way and then they are going to perform research on how the user reacts to the model reacting to them according to these rules.

Judah: Are you thinking of the Milgram-like experiments?

Dan: Something like that. Let's say ... that you modeled that way. You asked the user to play a simulation game in which the rules were biased in a certain way to favor certain outcomes and you wanted to get feedback at different points along the game as to what they thought was going on or how they explained this. So the incidental effect is how you want them to interact with something you have created in a technological setting.

Judah: It seems to me that becomes far less problematic if one is clear and open with the subject about the internal construction of the tool; you know the tool being the model. ... Suppose you are interested in a subject's reaction to the use of a game and the game is constructed in a biased way to result
in a certain kind of outcome. If the subject is given the opportunity to explore the internal structure of the model, then it seems to me, and assuming we’re talking about informed consent, that it would be much less of an issue. Then, for example, if the subject is asked to play a card game which in reality is played with real cards dealt, would be a fair game in the sense that you can win, but is so constructed on the computer so that the computer is biased to favor the computer by a factor of 3 to 1 or 4 to 1 or something like that. If the subject has some way of saying let me see the rules by which this is working and is encouraged to do so, then I see it as much less of an issue.

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Dan: The idea being that the subject is offered the opportunity after the trade or even before.

Judah: Or even before. It’s always useful to pull it out of a technological context. Suppose I have a pair of weighted dice and I say, “Let’s play dice,” when, in this interaction, am I ethically obliged to hand you the dice and say, “are these okay?” before or after?

Dan: Well, if your intention is to discover the point at which I throw the table up and say I’ve had enough, then you want to push me to that point or within the ethical context...

Judah: But that’s Milgram-like.

Dan: Okay.

Judah: And you know I’m using that as sort of the paradigm as unethical experimentation.

Dan: Okay. I was imagining that in this hypothetical world, it might be interesting to conduct research into how someone responds to and how someone begins to learn that a model is not as they assume it to be. That it is stacked against them.

Judah: Well, there are ethical ways of doing that. You can say, “Look, I am interested in seeing how long you can tolerate an unfair model. So we’re going to play a series of games and some of these will be fair and some of these will not be fair and are you willing to do that?”

Dan: That makes sense. I hadn’t thought it through fully.

Judah: Well, Milgram didn’t think it through fully, either.

Daniel Cogan-Drew is the Technology Coordinator for the Education Department and a former high school and post-secondary teacher.

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**For Further Reading**

**Ethical and Legal Issues of Human Subjects Research on the Internet**
By Mark S. Frankel & Sanyin Siang
American Association for the Advancement of Science Workshop Report – June 1999

**Ethics of Computing; Codes, Spaces for Discussion and Law.**
By Berleur, J. and Brunnstein, K. (Eds.)
This book was discussed in the November 1997 SIGCHI Bulletin. The book compares 30 different codes of ethics.

**Ethics, Lies and Videotape...**
By Wendy E. Mackay (Chair)
CHI’95 Proceedings – 1995
Videotape has become one of the CHI community’s most useful technologies: it allows us to analyze users’ interactions with computers, prototype new interfaces, and present the results of our research and technical innovations to others. But video is a double-edged sword. It is often misused, however unintentionally. How can we use it well, without compromising our integrity? This paper presents actual examples of questionable videotaping practices. Next, it explains why we cannot simply borrow ethical guidelines from other professions. It concludes with a proposal for developing usable ethical guidelines for the capture, analysis and presentation of video.

**National Education Association Webpage on Intellectual Property Rights** – September 2002
http://www.nea.org/he/abouthe/intelprop.html

**Software Engineering Code of Ethics and Professional Practice**
By Association for Computing Machinery/IEEE
ACM online – September 1998

**Privacy-related Issues in Computer-Mediated Spaces**
By Liam J. Bannon
CSCW94 Workshop: Critical considerations in the creation and control of personal/collective communications spaces – 1994
Bannon describes some of his personal experiences with privacy on computer-mediated workplaces. Ethical issues involved in videotape, ubiquitous computing, collaborative environments, and audio taping of phone calls (legal issues in many states). http://www.ul.ie/~idc/library/papersreports/LiamBannon/25/CSCW94.html
What is the IRB?

Research plans that propose the use of living human subjects, tissues or materials from living humans, or data on humans must be reviewed and approved or granted an exemption by the Institutional Review Board before the research begins. This includes all research at Tufts University regardless of funding source, whether conducted by members of the faculty, students, fellows, administrators or others, across all departments and campuses.

The IRB is a panel of Tufts’ faculty and staff that reviews all human subject research proposals to determine if they are assuring adequate protection of human participants. The Code of Federal Regulations establishes the composition and authority of this committee. The IRB must conduct most of its business (with the exception of exemptions and expedited reviews) in convened meetings with a quorum present. Only the IRB has the authority to approve human subject research.

Researchers are responsible not only for obtaining the required approval from the IRB but also for doing their best to protect the rights and welfare of human subjects. This includes complying with all provisions of the Tufts FWA and the Code of Federal Regulations, following the prescribed protocol, requesting IRB approval for any changes to the approved protocol, using only the approved version of a consent form, keeping accurate and complete records (including a complete, original, signed consent form for every subject), protecting subject privacy, making a good faith effort to present the consent form in a manner and setting that is conducive to the subject’s understanding of it, reporting at least annually to the IRB on the progress of the research, and informing the IRB in a timely manner of any adverse or unexpected events that occur in the course of the research. Proposed changes to an approved protocol will not be initiated without IRB review and approval, except where necessary to eliminate apparent immediate hazards to the subjects.

For more information, see: www.tufts.edu/central/research/HumanCare.htm

Ethical Issues Concerning the Use of Geographic Information Systems Technology with Indigenous Communities

This paper explores the ethical issue involved in using geographic information systems (GIS) technology with indigenous people. The authors, Andrew Turk and Kathryn Trees from Murdoch University in Australia, argue that:

“Information systems developed for indigenous communities are examples of complex socio-technical systems. Interventions by researchers, or systems analysts, in such systems must take into account the moral issues arising from the social context.”

Although they admit that GIS has the “potential to facilitate the production of multifaceted, culturally appropriate systems”, they believe that “GIS is a very strong example of technological determinism” and developers of these systems need to be concerned with social and ethical questions in its use.

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by Paula Vincini

Have a Great Summer!

Please note: the second part of Innovative Roles of Technology in Research will be printed in the fall.