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See no evil? Ethics in an Interventionist ICTD

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ABSTRACT

This paper considers some of the ethical questions that arise in conducting interventionist ICTD research, and examines the ethical advice and guidance that is readily available to researchers.

Recent years have seen a growing interest from technology researchers in applying their skills to address the needs and aspirations of people in developing regions. In contrast to much previous research in Information and Communication Technologies for Development (ICTD) which has sought to study and understand processes surrounding technologies, technology researchers are interested in finding ways to change the forms of these technologies in order to promote desirable social aims. These more interventionist research encounters raise distinctive ethical challenges.

This paper explores the discussions that have been presented in the major ICTD journals and conferences and major development studies journals as well as examining codes of conduct from related fields of research. Exploration of this literature shows that the quantity, quality and detail of advice that directly addresses the challenges of interventionist ICTD is actually very limited. This paper argues that the there is an urgent need for the ICTD research community to investigate and debate this subject.

Categories and Subject Descriptors

K4.1 [**public policy issues**] Ethics, Use/Abuse of Power; K7.4 [**Professional Ethics**] Codes of good practice**.**

General Terms

Design, Human Factors, Legal Aspects.

Keywords

Research Ethics, Interventionist ICTD, Codes of ethics.

1. INTRODUCTION

Professor Kant the Danish leader of the FairBanks research project was making his first visit to the project field site. One of the objectives that the project team had set themselves was to

contribute to capacity building by engaging with researchers at local universities. Professor Kant had made contact with the Vice-Chancellor of one university in the state capital, and had arranged to pay a visit before going to the field site. The meeting went very well and the Vice-Chancellor informed Professor Kant that he was particularly interested by the project because his family originated from the block where Kant's team were working. Kant was excited by the potential of this collaboration. On his first night at the local guest house, along with Arun, the district lead from the NGO that Kant was working with, they received an unexpected visitor. The town mayor arrived and invited Professor Kant to attend the celebration of a local festival that evening. The mayor was a cousin to the Vice Chancellor, who had informed him about the visit. Professor Kant was intrigued, welcomed a chance to witness a local cultural event, saw possible routes to additional project resources, and was visibly excited by the invitation. However, Arun seemed reluctant saying that he needed to sleep. It was not possible to explore the reasons for Arun's reluctance with the Mayor in the room, so Kant accepted the invitation.

When Professor Kant arrived at the event, he discovered (to his surprise) that he was to be the guest of honour, seated on stage with the mayor, and receiving gifts and garlands from his host. The next morning Professor Kant asked Arun about the reasons for his decision not to attend. Arun explained that the NGO had been working in the area for 5 years without having been drawn into local political rivalries. He was very keen to avoid being seen as associated with any particular group or politician. The potential for the NGO's work to be recruited by one faction in a way that misrepresented its activities, or to be hampered by local politics meant that he preferred to keep contacts to a minimum. He was concerned that Professor Kant's acceptance of the invitation might have jeopardized the strategy of his team.

We don't want to work with "hit and run researchers" [comment from a development practitioner].

If the community of researchers in ICT for Development can be said to share an ethic, in the sense of "a set of moral principles, especially ones relating to or affirming a specified group, field , or form of conduct:" [Oxford English Dictionary, 2nd Edition] then we may expect that ethic to include goals of 'beneficence' – a desire to act in the interests of the people and communities that they work with, and some commitment to 'non-malfeasance', i.e. to 'do no harm'. However, as the story above demonstrates, as outsiders in complex social situations it is often difficult to identify the potential harms that might arise from our actions. This problem is compounded by the extreme imbalance in financial and social power of typical ICTD researchers and the people that they (we) work with. For example, a family offering a visiting researcher a cool drink might be investing half a day's wages in

making the researcher feel welcome. The description of "hit and run researchers" above, reflects an experience where the NGO felt they had been used to achieve the researchers' objectives, but that insensitive actions in the field had damaged relationships that had taken years to build.

Because we often work with and on behalf of people who are vulnerable, we as ICTD researchers should carefully examine our research ethics. However, as a relatively new and interdisciplinary field, researchers are faced with either a lack of guidance specific to ICTD research, or with a surfeit of guidance available from different traditions. Individual researchers may find it difficult to interpret and adapt such guidance for their particular project.

This paper focuses specifically on interventionist ICTD research. Interventionist ICTD research is distinguished by the fact that projects do not simply investigate the impact of the diffusion of ICTs or programmes conducted by others (government, NGOs or private sector organizations) but seeks itself to make active interventions in the field. This could involve creating new technologies, setting up new networks or services, working with existing organizations and communities to develop new practices, or evaluating new technologies with potential users. Interventionist research may appeal to researchers' sense of beneficence and relevance. For creative technologists and designers it holds the promise of applying their skills in the interests of others. For researchers who want to see their work have 'real-world' impact, it promises more direct feedback than hoping that policy makers or NGOs will read and respond to academic publication. However, such research may carry greater potential for harm than in less directly engaged observational or evaluative studies.

The paper reviews ethics guidance in disciplines that contribute to ICTD and consider the implications for Interventionist ICTD research. The aim is to stimulate debate and development around our existing practices and guidance.

1.1 Structure of the paper

Section 2 highlights the ways in which interventionist ICTD research efforts differ from other forms of ICTD research and from ICTD practice. Section 3 examines the available codes of conduct available from professional societies concerned with ICT and demonstrates their inadequacy as a guide for research ethics. Section 4 presents a preliminary review of the major sources of research literature relating to ICTD and notes the very low number of papers that deal with this important area. Section 5 examines a range of ethical issues that researchers need to address, drawing on examples of codes for research ethics drawn from other domains. Section 6 notes the limitations of this study, and finally section 7 presents some suggestions for a way ahead.

2. IS INTERVENTIONIST ICTD RESEARCH DIFFERENT?

ICTD Research is multidisciplinary. Development studies itself draws on multiple disciplines such as geography, economics and social science. Further, development may involve particular specialist domains such as agriculture, health, education etc., with distinctive research practices. ICTs can contribute in all of these domains and ICT researchers introduce additional research practices and methods. Is there anything specifically different in Interventionist ICTD research that requires special consideration? There are two aspects of this. One is how Interventionist ICTD research is distinguished from other ICTD research. The other is whether Interventionist ICTD research is fundamentally different from the practice of developing ICT for development projects (for example works by an NGO or government agency).

Examples of 'non-interventionist' research in ICTD may include: reporting how people are appropriating and using ICTs in developing regions; examining the implications of particular technologies for communities, regions or countries, or evaluating the impact of different ICT related interventions by state, civil society, or private sector actors. The International Federation for Information Processing (IFIP) working group 9.4 frames its concern as 'Social Implications of Computers in Developing Countries'. Some research of this kind is possible based entirely on secondary data (e.g. policy documents and ICT uptake statistics), but often involves contact between researchers and participants. However, these interactions are typically limited to observation, surveys and interviews. A more recent phenomenon is researchers from technical ICT disciplines designing, implementing, testing and evaluating new technological configurations (and by implication new socio-technical arrangements) with the aim of finding configurations that could contribute positively to development. A project might devise a new technique for providing wireless connectivity in remote regions and the conduct field tests themselves or with local people. Testing in-situ without involving local people may avoid some ethical issues. However, a key research question is whether the solution is usable and sustainable in context. To answer this, researchers may need to involve local people and organizations more actively. For example, projects such as Storybank [22, 34], Rural e-Services [18, 19], MILLEE [35] and VoiKiosk [3] all involve direct intervention by a research team designing and applying technologies, in collaboration with people and organizations working in developing regions.

As Anokwa et al. [4] observe, participants expectations of what a research project might deliver in an interventionist ICTD project may be very different from those of the researchers. In this situation there is considerable potential for unintended harm, not least from raising expectations that cannot be met. For this reason, interventionist ICTD deserves careful ethical scrutiny.

Interventionist ICTD research is also different to ICTD practice. There is a healthy dialogue between practice and research in ICTD, but there are differences in the incentives that apply to professionals working in different institutions. University researchers are usually evaluated and rewarded for generating research outputs (typically publications, but also patents or spin-out companies). It is easy to imagine a scenario in which an ICT researcher's incentives to adopt a novel technology or approach conflicts with community participants desire to use solutions that have been tried and tested elsewhere. Conflicts arise from competing claims for resources. Highly trained researchers from financially wealthy countries are an expensive resource. Interventionist ICTD research must balance expenditure on researchers writing & presenting publications, with expenditure on equipment and activities in the field. This is not just a matter of personal career goals. It also reflects a researcher's sense of responsibility to funders, to the wider research community, to policy makers and to other people facing similar challenges to those at the research site. Anokwa et al. [4] reflect in depth on some of these tensions, characterizing the relationship between research and development as 'a central conflict' and a 'dichotomy' [4, p113]. In the rest of the paper, I review potential sources for ethical advice to interventionist ICTD researchers.

3. CODES OF ETHICS IN ICT

One starting point for understanding ethics is in the codes of ethics for medicine, tracing back to the Hippocratic Oath. The following elements of the oath can clearly be adapted to ICTD research:

- Beneficence – to act in the interests of the patient;

- Non-malfeasance –to avoid harm to the patient;

- Confidentiality – to keep confidential information that should not be disseminated;

- Professional probity –not to abuse the relationship with the patient "keeping myself far from all intentional ill-doing and all seduction and especially from the pleasures of love with women or with men, be they free or slaves"; and

- Recognizing the limits of professional competence.

Whereas medical ethics begins with a clear duty towards a particular client (the patient), developing ICT systems involves multiple stakeholders. The major organizations of the computing profession provide a range of guidance. The code of the Institute of Electrical and Electronic Engineers' (IEEE) [30] highlights avoiding conflicts of interest; honesty; rejecting bribery; avoiding injury to others; improving public understanding of technology, acknowledging the limits of one's own competence; maintaining skills; fair treatment and avoiding discrimination; encouraging honest criticism and correcting errors; and promoting professional development and ethical behavior. The Association for Computing Machinery (ACM) code [1] has a similar tone, but adds specific duties related to computing technologies covering respect for copyrights and patents; privacy; consent over the use of personal information; and unauthorized access to computer systems. The British Computer Society [10] code phrases similar commitments in terms of duties to 'relevant authority'.

In Software Engineering, the IEEE and ACM approved a joint code of ethics in 1999 [2]. The code sets out duties to the public, the "Client and employer", the profession and to colleagues, as well as identifying various duties for "Management". It requires that software engineers should: "Moderate the interests of the software engineer, the employer, the client, and the users with the public good"; and suggests that for software engineers "The ultimate effect of the work should be to the public good"; and should be "… encouraged to volunteer professional skills to good causes" [26].

These professional codes developed for practicing software engineers set out quite limited duties of public beneficence and for non-malfeasance, focus on the potential direct harms that can arise from software products, but do not discuss harms that might arise in exploratory research. Consequently, such professional codes are inadequate as ethical guides for interventionist ICTD research.

4. ETHICS IN ICTD LITERATURE

This section reviews discussions of research ethics in the primary sources of ICTD literature. As a first investigation of this area, the scope of the review has been set quite narrowly, concentrating on material that interventionist ICTD researchers might initially turn to. The review covers the 10 most cited ICTD journals as ranked by Heeks [27] and the two major series of ICTD related conferences with proceedings available on-line, namely the ICTD conference form 2007 to 2010, and the IFIP Working Group 9.4 conferences, from 2007 to 2011. IFIP WG 9.4 conferences before 2005 were not included because the proceedings were not readily available on-line in a searchable form. The ICTD 2006 conference was covered by means of the publication of the best papers in the ITID Journal. To set the discussion in context, the review also considered the eight most cited development studies journals as ranked by Heeks[1] [28].

The search was a full text search for the following strings: Ethic, Ethical, Ethics (Ethic* where wildcard were accepted by the search interface); Research Ethic; Informed Consent; Ethic* and Research Method; Institutional Review Board (or IRB); Ethics Committee; Ethics Review Board. Where manageable numbers of results were returned (less than 10), these were studied in detail so that only full papers were included in the counts, rather than book reviews or letters, or where the mention of the term ethics or consent was merely in the title of a reference. When Research Method and Ethics were mentioned in the same paper, the paper was examined to identify whether an explicit link was being made to discuss the ethics of research methods. Similarly, when IRB or ethics committees were mentioned, the paper was studied to identify whether it contained an explicit discussion of research ethics, or simply indicated that the work had been reviewed by these bodies.

The search of the journals was conducted using their publishers' standard journal archive sites. Where conference proceedings were available as a pdf document, the document was searched using Adobe Acrobat reader. Where conference proceedings were contained in separate files, but available on-line within a known directory on a given website, they were searched using the Google search engine's advanced search. The Google search engine was also used for the archives of the African Journal of Information and Communication. All searches were conducted between 6th June 2011 & 28th June 2011. Verification of some items and results was conducted between 6th and 22nd July 2011.

Table 1 shows the findings from the ICTD journals. What is striking is the lack of references that discuss the issue of research ethics explicitly in our primary journals. The exception is one paper in Information Technology and International Development (ITID) whose authors self-identify as students [4]. In presenting their experiences, the authors also found a paucity of advice available to them. They cite a number of books [e.g. 20, 21, 41] dealing with ethical challenges of fieldwork studies but they recognize that these texts do not deal with the complexities of introducing technologies into the field. Additionally, they refer to papers reporting and reflecting on field experience and techniques used in technology design projects. However, they cite these papers primarily for the guidance they give on how to conduct research in ways that promote success of the research and sustainability of solutions designed, as opposed to being specifically about the ethics of the research encounter.

Table 2 presents the findings from the ICTD conferences. Given the reviewing processes, papers presented in plenary & those presented as posters at ICTD 2010 are listed separately. Again, the number of papers is very small. The three papers identified were: a paper explicitly concerned with informed consent procedures

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[1] The 9th and 10th most cited development studies journals according to this ranking are IT for Development and ITID, which were already included in the review.

Table 1: Papers discussing research ethics in ICTD journals.

Journal	Ethic*	Research Ethic*	Informed consent	Debate of informed consent in research[1]	Ethic* & Research method	explicit debate of ethics of methods	IRB or ethics committee	Debate of role of ethical review
IT and International Development	21	0	0	**0**	3	**1**	1	**1**
e-J. of Information Systems in Developing Countries	0	0	0	**0**	0	**0**	0	**0**
IT for Development	19	0	1	**0**	6	**0**	0	**0**
African J. of Information & Communication	1	0	0	**0**	0	**0**	0	**0**
Int. J of Education & Development Using ICT	1		0	**0**	0	**0**	0	**0**
Asian J. of Communication	8	0	2	**0**	0	**0**	2	**0**
J. of Health Informatics in Developing Countries	0	0	0	**0**	0	**0**	0	**0**
Information Development	89	0	0	**0**	5	**0**	0	**0**
Int. J. on Advances in ICT for Emerging Regions	0	0	0	**0**	0	**0**	0	**0**
African Journal of ICT	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

and practices [44]; a paper that highlights and questions the implications of the low input from African scholarship to published ICTD research [24]; and a paper that includes a side comment regarding a deadlock that arose between a university institutional review board that wanted to know that some schools had agreed to participate in a piece of research, and the schools who wished to know that the work had been approved by the IRB before they would give written consent to participate [47].

Table 2: Papers on research ethics in ICTD conferences

Conference	Ethic*	Research Ethic*	Informed consent	Debate of informed consent in development research	Ethic* & Research method	explicit debate of ethics of methods	IRB or ethics committee	Debate of role of ethical review
ICTD 2010 posters	8	1	2	1	1	1	1	0
ICTD 2010	4	0	0	0	1	1	1	1
ICTD 2009	5	0	0	0	1	0	0	0
ICTD 2007	3	0	0	0	0	0	0	0
IFIP WG 9.4 2011	7	0	1	0	2	0	0	0
IFIP WG9.4 2009	6	0	0	0	1	0	0	0
IFIP WG 9.4 2007	2	0	0	0	1	0	0	0

The lack of literature examining the ethical challenges of ICTD research is somewhat alarming, but perhaps researchers could find guidance in more general development studies journals. Table 3 presents the findings from these journals.

Although there are a large number of papers that include terms such as ethic, ethics or ethical, very few of these are concerned with issues of research ethics and research practices. Large numbers of papers dealt with issues such as ethical trade, many papers included the term ethics in the title of a reference but not in the main body of the paper, and many dealt questioned the ethics of other actors such as government and private sector actors. The papers that were found to explicitly deal with research ethics examine: an agenda arguing for establishing Development Ethics as a field of study, that highlights the intertwining of theory and practice in development [14]; the an editorial reflecting on personal responsibility and behaviour development practice [13]; a discussion of the particular methodological and ethical challenges of researching gender violence in schools [38]; a reflection on the issues of using participatory methods in compiling national statistics [8]; a discussion of the epistemological tensions in combining qualitative and quantitative research, or more specifically understanding the different criteria of validity that underpin research approaches[35]; a reflexive discussion of ethical issues by a researcher conducting empirical economics studies [33]; and a discussion of the relevance of feminist epistemologies to development studies in general [32].

Overall review found surprisingly few papers. This finding is consistent with Anokwa et al.'s observations about their inability to find anything other than general guidance about field work prior to conducting their studies [4]. A total of eleven papers were identified from this entire body of research, three papers from the ICTD 2010 conference, one from the journal Information Technologies and International Development, and seven from other high ranking development studies journals. None of the papers found in the general development studies literature explicitly addressed the issues that surround interventionist ICTD.

Table 3: Research ethics in development studies journals

Journal	Ethic*	Research Ethic*	Informed consent	Debate of informed consent within development research	Ethic* & Research method	explicit debate of ethics of research methods	IRB or ethics committee	Debate of role of ethical review in research
World Development	280	1	0	0	13	2	5	1
J. of Development Studies	12	0	1	0	0	0	0	0
Oxford Development Studies	2	0	1	0	0	0	0	0
Development Policy Review	45	0	0	0	3	0	0	0
Studies in Comparative International Development	15	0	0	0	0	0	0	0
Sustainable Development	163	0	0	0	15	0	1	0
European Journal of Development Research	48	0	1	0	1	1	0	0
Development and Change	197	0	4	0	13	1	0	0

5. CODES IN OTHER DISCIPLINES

If debates of research ethics are rare in established ICTD and development studies literature, then it is valuable to examine the ethical codes of research disciplines related to ICTD. It is important to understand the distinctions between codes designed to guide the delivery of professional services, from those that are specific to guiding research activity. Research introduces extra issues that do not generally apply in day-to-day professional practice.

- Firstly, research activities are often not initiated at the request of the participants to address their immediate needs, in contrast to the relationship of a professional to a client.

- Secondly, the activities of research imply that some information will be shared with other stakeholders (e.g. other researchers, funders, policy makers) introducing particular risks of harm, and raising issues of autonomy and consent.

- Thirdly, the need for research implies some uncertainty regarding outcomes, which in turn demands more careful attention to identifying possible hazards.

- Last, but not least, there is the issue of conducting and reporting research in such a way as to promote the validity of findings.

Various disciplines have developed detailed codes of research ethics. Groups such as the American Sociological Association (ASA), American Psychological Association (APA), British Psychological Association (BPA), World Medical Association (WMA), American Educational Research Association (AERA) cover general principles such as ensuring participants in research are protected from harm, properly informed about the work and provide informed consent[2]. With regard to people's rights to autonomy, a key goal is that individuals should not be put in the position of being 'used' or exploited as means to research ends. Whilst people can freely choose to participate in research activities, this should be a result of their own informed choice. Of concern in many codes are the rights of people who are described as vulnerable, particularly as this might limit their freedom to choose whether or not to engage. Below I review particular areas of concern from these codes that raise questions for interventionist ICTD researchers to consider.

5.1 Sharing the Benefits of Research

Most disciplines require that research participants should have an opportunity to benefit from the findings of research. The APA requires

> "… a prompt opportunity for participants to obtain appropriate information about the nature, results and conclusions of the research" [5, Clause 8.0].

The AERA insists that

> "… researchers should communicate their findings and the practical significance of their research in clear, straightforward, and appropriate language to relevant research populations, institutional representatives, and other stakeholders." [6 Clause II:B:10].

For vulnerable groups, the Helsinki Declaration on medical research requires that:

> "Medical research involving a disadvantaged or vulnerable population or community is only justified if

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[2] The APA and BPA codes of ethics also admits the possibility of psychologists working with people who are legally incapable of providing informed consent, and discuss appropriate behaviours in these circumstances.

the research is responsive to the health needs and priorities of this population or community and if there is a reasonable likelihood that this population or community stands to benefit from the results of the research." [47, clause 17].

This is a stronger injunction than simply ensuring that the findings are shared, or that the research has potential value for people in similar circumstances to the participants. Rather, this demand is not legitimate to involve people who are vulnerable in research unless the individuals have a realistic chance of receiving the benefits of the research outcomes. The goal is to avoid exploitation of vulnerable people, in the sense of these people being used as a means towards the researchers' (or some other stakeholders') ends, and to instead emphasize an ethic promoting health and wellbeing. For interventionist ICTD, the question of whether research participants should be recognized as vulnerable may be highly significant.

This injunction has been the subject of considerable debate in research ethics [37, 42] for public health in developing regions. A key example is studies of the potential of anti-retroviral drugs to reduce the rate of mother to child transmission of HIV. Although treatments (at that time costing US$800 per patient) were known to be effective in the 1990s, this was unaffordable for most people in developing countries, and their governments. Studies aimed to discover whether a lower dosage that cost $X might be effective for some given value $X. Glantz et al. argue that such studies would only be ethical if, at the start of the study, the researchers present a clear plan of how the countries involved will be funded to purchase national scale quantities of the drugs at $X per patient.

> *"... The researchable issue arises from an economic circumstance. The only way such research could offer any benefit is by "curing" the economic problem by establishing that the less expensive form of the intervention will be affordable and available. Absent knowledge of financial resources one might well be creating a new unaffordable, and therefore useless, intervention."* [25, p41 – 42].

For interventionist ICTD, it may be that research that is conducted directly involving vulnerable groups or populations should be required to demonstrate a reasonable plan for sustainability prior to the research commencing.

Bhutta questions whether very narrow interpretations of the potential benefits of engaging in research might

> *"... effectively stop much-needed public health and epidemiological research that often generates precisely the information that might influence future public health policy."* [11, p116].

Bhutta argues for a broader understanding of the potential benefits of participating in research, for example possible improvements in local healthcare systems and building local knowledge & capacity. Bhutta calls for a more pragmatic and participatory dialogue around the goals of research, and ethical governance.

In development studies, Barahona and Levy highlight the differences between participatory information gathering when the information is to be owned and used by the participants and using such methods when the information is to be taken elsewhere.

> *"In our view, we should not ask people to spend time on research if we do not believe that the policy makers will take the findings seriously."* [8, p337].

Barahona & Levy discuss some of the issues of confidentiality, sharing of information, consent and transparency in situations where participatory research engagements are organized with the primary intention of informing external stakeholders, rather than directly empowering community members. Their suggested resolutions involve allocating additional research resources to ensuring that participants are able to benefit from their own research work, as well as the external stakeholders.

For the ethics in interventionist ICTD research, some issues arise around the degree to which technologies developed will be sustainable in context. The steadily falling price of ICTs may provide encouragement for researching how 'cutting edge' tools can be applied, but Bhutta's [11] argument questions the extent to which vulnerable groups should be encouraged to participate in research on this topic if they are not in a position to afford these technologies immediately from their own resources. Lower cost, lower tech solutions might lead to more 'appropriate' technological responses. In assessing this, we should consider who might be 'subjects' or 'participants' in our research. Working with established and funded NGOs, established private sector business and government agencies to enhance their technical capability could involve less risk to vulnerable people than working directly with smaller community based groups or directly with individuals. Established institutions may be better able to assess whether the suggested technologies are relevant.

5.2 The risk of coercion

The ASA's code of conduct discusses compensating participants for engaging in research activities stating:

> *"Sociologists do not offer excessive or inappropriate financial or other inducements to obtain the participation of research participants, particularly when it might coerce participation."* [7, clause 13.03].

One way of ensuring that participants in the research will directly benefit from some ICTD research might be to arrange some guarantee of sustained funding of ICT after the research project has ended. However, as Bhutta [11] points out, such a guarantee might become a coercive inducement to participate in research.

Given the huge financial disparities between researchers and communities in developing regions, and the high value associated with ICTs, ICTD research presents particular risks of introducing incentives that might be perceived as so great as to become coercive. In ICTD research, Sambasivan et al. report that

> *"A seemingly innocuous gift of a school bag for an informant's child proved disproportionately valuable in relation to the family and the community's income standards. While everything was fine when we were in the field, the local NGO reported ill feelings among those who did not get a bag."* [39, p.23].

Jackson [33] reflects in depth upon the relationship between herself as a white professional researcher and members of the community where she was conducting empirical economic research. She highlights the impossibility of a neutral research context or relationship with her participants, emphasizing the way that her participants approached the encounter conscious of the potential benefits for themselves.

"Foreigners, usually white men, are seen as development experts associated with projects and in command of budgets, and as worthwhile patrons. … Researchers are seen as fair game for attempts to guilt trip them into paying for something." [33, pp 777-8]

"Expecting a two-way process in which respondents also evaluate and 'research' researchers is a more realistic starting point than assuming ignorance, innocence and passivity…"(ibid. p788).

In such an environment, ICTD researchers must consider not only the promises and rewards that they explicitly offer and give, but also the kinds of rewards and inducements that participants might (incorrectly) project onto them. As Anokwa et al. report

"The prospect of new technology can raise the expectations of research partners, also heightening the chances of disappointment." [4, p105].

In examining the nature of informed consent in ICTD, Sterling & Rangaswamy [44] recommend that ICTD researchers should (prior to starting research) "complete a framework" (ibid. p7) of the socioeconomic, political and external factors that are in play in the community where they are intending to work. This process may at least help to frame a discussion of what are appropriate levels of reward, but the individual project may not predict these matters with certainty prior to experience in the field.

5.3 Governance

Sterling & Rangaswamy's [44] discussion of informed consent brings into focus a concern with processes and mechanisms of research governance. Given a situation where ICTD research is financed by organizations that are geographically, socially, and culturally very different from the communities participating in the research, we might question whether academic committees in 'developed' countries are properly equipped to reason about the consequences that might flow from actions in a remote developing region, or to oversee the actions of researchers in the field. The paucity of debate of ethics in our literature suggests that such ethics committees or institutional review boards may be challenged in this area.

Sterling & Rangaswamy highlight the difficulty of translating key ideas around informed consent. For example, the terms 'research', 'investigation' and 'project' (even when translated into a local language) may be understood by participants against a background composed almost exclusively of aid and development projects rather than research. Similarly, the practice of personal informed consent is rooted in a notion of individual decision making and may require effort to translate to situations where decisions are treated more socially and collectively.

The Canadian Government's Tri-Council Panel on Research Ethics developed specific guidelines for research with Aboriginal communities, which could be informative for some ICTD settings. The initial guidelines encouraged researchers "To conceptualize and conduct research with Aboriginal group as a partnership" [45, section 6]. The second edition of the guidelines extends these principles. The new code expects that "researchers shall offer the option of engagement" [46, article 9.10] and suggests: "In geographic and organizational communities that have local governments or formal leadership, engagement prior to the recruitment of participants would normally take the form of review and approval of a research proposal by a designated body."

[ibid. Article 9.2]. The policy explicitly recommends building the community's capacity to engage in research for themselves [ibid. article 9.13].

In interpreting this type of guidance into interventionist ICTD research, there are questions to ask about what types of institutions might be recognized as legitimate representatives of community interests that should be consulted. For Professor Kant (above) could it be argued that the Mayor, as the elected head of the local government should have automatically been consulted to gain approval for the research? In many situations, researchers might judge that this is against the interests of some of the most marginalized people in the community. It is difficult to resolve these issues without making some (explicit or implicit) decisions about the moral legitimacy and scope of authority of different institutions.

For many interventionist ICTD projects, local NGOs have been treated as key gatekeepers [4, 29, 44]. Interventionist ICTD needs to assess the degree to which particular NGOs or institutions have the legitimacy and / or the organizational capabilities to defend participants' interests during research. A pragmatic and participatory dialogue might suggest that governance should be explicitly configured as a partnership between research team, institutional review boards (or equivalent structures), and locally based institutions such as NGOs or CBOs. Sterling and Rangaswamy suggest that the process of obtaining informed consent can be improved by stimulating an open discussion, mediated by local actors, in which potential participants are encouraged to actively identify and explore the benefits and potential risks of the research.

5.4 Reflexivity

It is not surprising that development studies papers that do discuss research ethics, not only emphasize the importance of reflexive practice and open dialogue with participants, but also call for more open dialogue in the community of practitioners and researchers. For example, both Leach [38] and Jackson [33] reflect on their personal roles and behaviours and how these interact with the reliability and truth criteria of their reports. Anokwa et al's [4] paper is underpinned by a structured reflexive survey of the authors' own experiences. Sterling and Rangaswamy's [44] paper draws on a survey of other practitioners, and on the authors' own reflections. Barahona & Levy [8] call for more debate about research ethics. Chambers [13] emphasizes the importance of personal values and commitments in development practice, and calls on development professionals to be more reflective of their values and how these work out in practice. In discussing participatory methods he lays emphasis on personal behaviour and attitudes suggesting that these have more significance in the effectiveness of development practice than do particular methods, but he observes that exploration of these personal orientations "have been absent from most professional training and from most agendas of development" (ibid., p1748).

5.5 The accuracy and relevance of findings

A key concern for Kanbur and Shaffer [36] is understanding the senses in which research related to poverty can be regarded as reliable. Their discussion has parallels with that of Burrell & Toyoma [12] regarding good ICTD research. Kanbur & Shaffer draw attention to the different normative theoretical commitments that are typical of (although not inextricably mapped to) quantitative and qualitative research. They argue that quantitative methods are usually grounded by a commitment to 'brute data',

which may lead to certain dimensions or qualities of poverty being prioritized over other dimensions. Hence, quantitative research is typical of what they call the 'consumption' approach to poverty. On the other hand, qualitative and participatory studies emphasize the importance of dialogue between interested stakeholders in establishing the meaning of categories under discussion. To illustrate the consequences of this tension they refer to a study in which women can be shown not to suffer from greater consumption poverty based on national household survey data, but participatory and qualitative data gathering in a village context suggests that women as a group are understood by the participants as worse off than men as a group. The choices made about the way these alternate findings are interpreted, understood and emphasized may have significant implications for the policies that might then be promoted. One of the principal questions raised by the advocates of participatory and qualitative methods is 'Whose reality counts?' [13].

Crocker contests the notion of value neutrality in science and development, whether it be quantitative or qualitative. Instead he draws attention to development activity as a continuum of 'theory-practice'.

> *"Relatively pure theory is possible. Relatively pure practice is possible. But it is typical and, more importantly often desirable to have a "practice-theory" or a "theory practice" in which more or less abstract thought, site specific experience, and practical conduct are dialectically related"* [14, p469].

Both Crocker [14] and Jackson [32, 33] suggest that feminist perspectives provide useful insights that could underpin research ethics in development. A similar observation has recently been made in relation to human computer interaction for social development [9].

6. LIMITATIONS

The literature survey conducted in this paper has a number of weaknesses that must be acknowledged. Firstly, the initial coverage of the review (a small number of journals and conferences and a limited set of search strings) has been quite narrow. A detailed study of the hundreds of articles in development studies journals that include the string *ethic*(but do not mention ICT or other synonyms), might find some relevant material, for example discussions of research ethics related to other technological interventions. It may be that highly relevant debates are being conducted through ethics journals such as: the Journal of Global Ethics; Research Ethics (formerly Research Ethics Review); Science, Technology and Human Values, etc. On the other hand, an initial keyword search of these journals found no references to the typical acronyms ICT4D or ICTD and only one reference to ICT in the Journal of Global Ethics [49]. The International Review of Information Ethics makes no specific reference to ICTD. However, this journal has published the proceedings of the first African Information Ethics Conference [31]. The journal Ethics and Information Technology recently published a special issue on ICT and the capabilities approach containing papers relating to ICTD [39], but not specifically to research ethics and interventionist ICTD. The field of Development Ethics [23] may also offer some valuable insights. Much might be learned from a systematic enquiry into this broader ethics literature.

Secondly, any set of specific search terms cannot guarantee to capture the full space of debate. For example, Crocker's [14]

identification of 'theory-practice' is closely related to notions of action research and papers on action research and other participatory approaches may provide valuable insights relevant to this discussion.

Hence, this paper is far from a final word on the ethics of interventionist ICTD, but I hope that it helps to broaden a dialogue that a few of the works cited here have begun.

7. A WAY FORWARDS

Interventionist ICTD research has some significant differences from its non-interventionist partner, and ICTD *research* also differs from activities that are lead primarily by pragmatic development goals. The review of literature conducted for this paper reveals a disturbing lack of debate in the formal exchanges of our community. One risk of a situation such as this is that, lacking a clear debate of ethics, a research field may become subject to research ethics governance and standards drawn from elsewhere, that are poorly matched to the specific situation and needs of the discipline [43]. Given the need for interventionist ICTD research to respond dynamically to complex and changing situations in the field, this might represent a significant risk.

Dahlbom & Mathiassen [16] argue that codes of ethics may be developed serve multiple purposes, not simply as a means of regulating a practice or seeking to underpin and legitimate professional self-regulation. They highlight the possibility of using such codes as a means of articulating a shared ethical position; or as a methodological framework to promote effective practices.

I opened this paper with the premise that perhaps ICTD researchers share an ethic that includes beneficence and non-malfeasance. In thinking through the findings and implications of this review, it may be useful to reflect on this premise. Dahlbom and Mathiassen [15, 16] distinguish computer professionals who aim to act primarily as engineers (with a focus on technical efficiency), as facilitators striving to promote understanding of technology, or as emancipators concerned with issues of justice. In interventionist ICTD research we might similarly look for parallel positions emphasizing: dispassionate rigour or technical efficiency; improved understandings and use of ICT in society; or the recognition that development as fundamentally about social change that includes changes in the social and power relationships between people and institutions. As Dahlbom & Mathiassen observe, such choices of orientation make it difficult to sustain a simple division between what Aristotle would have labeled separately as ethics and politics. Explorations of these distinctions may help to clarify how different approaches and methods in interventionist ICTD research relate to development outcomes. They might also uncover areas where interventionist ICTD researchers do not share the same ethic or ethics.

In considering ethics for interventionist ICTD research as contributing to methodology it may be helpful to examine other areas of study where relations between ethical, political and epistemological positions have been debated in depth. I have argued elsewhere for approaches based in participatory (and) action research traditions [18, 19]. Bardzell & Bardzell [9] argue that feminist epistemologies and research ethics are highly relevant for ICTD. Drawing on a range of sources, they argue for research approaches in which the experiences and understandings of marginal rather than dominant groups should be the focus, and marginal groups should be actively engaged in setting the scientific agenda, a position that aligns easily with participatory research traditions. As an example of an important

epistemological contribution from feminism, they highlight standpoint theory which clarifies and declares the researcher's position in the world leading to "limited knowledges that make explicit their positioning, their construction of power, and that seek to make visible the claims of the less powerful" [p680]. Given the substantial literature dealing with development issues from feminist perspectives, this may represent a fruitful avenue for further exploration.

Meanwhile we should be attentive and grateful to those few voices such as Anokwa et al. [4], Sterling & Rangaswamy [44] and Gitau et al. [24] who have begun to surface the ethical challenges faced in interventionist ICTD research, but we should also be promoting more detailed analysis and debate of these issues in our core literature.

Finally, in seeking to promote ethical interventionist ICTD research, we might also consider how our collective behaviours as a research community might impact on the actions of individual researchers in the field. One aspect of our current behaviour is that, unlike the medical profession, for example, we do not currently require that papers submitted for publication also provide evidence that the researchers have reflected on the ethical issues, and that the work has been subjected to any discussion or review with appropriate stakeholders. As our field matures, it may be time to consider whether such processes should be required.

8. ACKNOWLEDGEMENTS

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