OPENING ETHICAL VISTAS TO IT PROFESSIONALS

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Abstract:
In this paper we seek to represent the conceptual world of Information Technology professionals with respect to ethics and propose that the most effective means of impacting their practice rests in influencing professionals' conceptual world. As such, we present a Model of Ethical IT and argue, in the light of the educational Variation Theory, that for IT professionals to be enabled to become more ethical in their practice: the purpose of IT must be primarily understood to be user-oriented; the nature of professional ethics must be primarily understood to be other-centred; and the goal of ethics education must be understood as primarily promoting a change in experience, towards others.

1. Introduction

The IT discipline to date has been principally technology-centred. This influences how IT is understood and frames professionals' expectations of how IT is to be used and developed. To turn professionals’ vision outwards towards the people that technology impacts, professionals need re-orientation towards a people-centred rather than an artefact-centred experience of IT. In order to be able to practice in an ethical manner, IT professionals must see vistas beyond technology.

We seek to represent in this paper the conceptual world of Information Technology (IT) professionals with respect to ethics and propose that the most effective means of influencing their ethical practice rests in influencing professionals’ conceptions of their discipline and practice. “Powerful ways of acting originate from powerful ways of seeing” (Pang & Marton, 2003, p.181).

We first present a model of IT professional practice which turns the focus of IT from being technology-centred to being user-centred. Support for this perspective is drawn from the IT literature and from the experiences of IT practitioners as evidenced in our empirical studies.

We then add a professional practice aspect to this model which defines ethical practice as being other-centred. We find support for this in the thinking of Emmanuel Levinas, who focussed on relationships of responsibility to others as forming the essence of ethics (Levinas, 1998), in the thinking of Darryl Koehn, who has argued that a relationship based on the professional pledge to serve the public good is the only defensible ground for professional ethics (Koehn, 1994) and in the Parliament of the World’s Religions acknowledgement of humanitarian values as common ground across a wide spectrum of cultures (Schweiker, 2004). Thus, we understand an ethical perspective is distinguished by an increasingly other-centred attitude. Such an attitude is reflected in an empirical study of the experience of IT professionals and the results of that study inform the professional practice aspect of our model.

Finally, we offer a framework for professional development which promotes this viewpoint. This framework is based on the educational Variation Theory which has found that effective
learning is facilitated by exposure to variation in experience which the learner would not necessarily notice if left to their own devices. This exposure serves to change the learner’s relationship with the object of learning, in this case professional ethics. We suggest practical ways this approach to learning may be implemented.

2. Re-orienting the IT discipline

The IT discipline to date has been largely technology-centred. As such, the IT artefact assumes the focal position in IT professionals’ experience of their domain (Burnett & Subramaniam, 2004; Ellis & Lowell, 1999). This influences how IT is understood and frames professionals’ expectations of how IT is to be used and developed. Not everyone accepts this situation and we add our voice to those challenging such a technology-centred view. We further suggest that engagement in ethical practice should turn the practitioner’s attention outside the technological world, to their clientele and beyond. To turn professionals’ vision outwards, their experience of their profession needs radical re-orientation so it is other-centred rather than artefact-centred.

In a technology-centred discipline, technology drives the client’s agenda, determining how they act in its presence and dominating their plans. “The highest technology artifacts in the world have become our masters, reintroducing us to human slavery more than a century after its abolition” (Dertouzos, 2002, p.4). This is because in technology-centred practice the client fades into the background, only vaguely present on the periphery of the practitioner’s world. “Our customers are not present in the most crucial place they must be for us as professionals: in our awareness of the impression, the value, and the satisfaction that our work and actions will produce for them” (Denning & Dunham, 2003, p.20).

In order to change this, we need to reorient the discipline and the role of professionals within it. A prime place for the application of this change is in the lived experience of those who hold the key to discipline change – the discipline professionals themselves. We propose that IT practitioners with changed conceptions about their discipline and their role will evidence this change in their daily practice and influence the discipline to change with them.

Hence, we suggest here an alternative approach to thinking about the IT discipline. This is mapped along two axes which have emerged through the literature and our research as representing significant aspects defining the ethical nature of the discipline. These axes are an artefact-developer-to-artefact-user axis, and a technology-to-information axis.

In order to envisage what this might mean to the IT discipline, we have modelled the transformation from IT’s traditional approach to the approach we believe it is evolving towards (Figure 1. A Model of Evolving IT).
2.1 Moving from an artefact-developer focus to an artefact-user focus

The traditional approach to IT (represented on the left-hand side of this diagram) privileges the technological artefact as constituting the core of IT. Thus, the prominence of technology – its needs, development, demands and possibilities – defines the field and determines our interaction with it. The technology user, in contrast, is expected to adapt their practices and define their roles in response to the demands placed upon them by the artefact.

In contrast, some IT professionals question such a definition of the field and argue for a user focus (represented on the right-hand side of this diagram), whereby the user’s needs, expectations and plans determine the way technology is developed. In this way, the technology is adapted to the user, who controls how the artefact changes. The artefact’s value is thus determined by its ability to meet user needs. (Denning, 2004; Denning & Dunham, 2003; Dertouzos, 2002)

2.2 Moving from a technology focus to an information focus

The traditional approach to IT emphasises the centrality of the technological tools (hardware and software) which make up an information system. In this way, goals such as the greater refinement of processing ability and efficient interface of elements of the system assume prominence regardless of whether they meet a human need. The focus is on technology without necessarily referring to an end user.

In contrast, some IT professionals doubt the value of technology if the purpose for its development, that is enabling users to meet their information needs, is not considered (Bruce, Pham, & Stoodley, 2004; Finkelstein & Hafner, 2002). Here the information needs of end users is focussed on and determines what technology is developed. The information needs of the users assume prominence and meeting those needs becomes the central goal of technological development. Thus, the core business of IT becomes the provision of information services, rather than the development of technological tools.

When IT is seen in this broader way, the IT profession enlarges. It moves from the left-hand side of our model to the right, encompassing a wider circle of occupations. “(T)he IT
ecosystem is characterised by a large number of participants who depend on each other for their mutual effectiveness and survival... The boundary of the IT ecosystem is difficult to define” (Iansiti & Richards, 2006, p.79). This movement is already happening, evidenced by the fact that occupations which were once relegated to ‘user’ status are now increasingly involved in activities associated with artefact development. “(S)ome so-called ‘user’ jobs involve systems and web development using powerful desktop tools. This begs the question of where the cut-off line should be drawn on a definition of the IT workforce” (Kaarst-Brown & Guzman, 2005, p.4).

In Figure 1, A Model of Evolving IT we have attempted to situate specific activities within the IT space (in the dotted rectangles). In order to define the limits of IT, we have also attempted to identify reference disciplines (Mathematics, Engineering...) which contribute to the discipline but remain separate from it (McGuffee, 2000).

Any specific IT activity will lie somewhere along the two continua of artefact developer-artefact user and technology-information, and represents an interaction between them. The IT discipline is already evolving from a technology developer focus to an information user focus, and our understanding is that this trend needs to be encouraged and accelerated in order to progress the field to an expanding vision of ethical responsibility and practice.

3. Expanding visions of responsibility

An understanding of the evolving nature of the IT field towards a user focus begins to turn IT professionals’ attention outwards beyond the boundaries of the discipline as it has been traditionally defined. The traditional techno-centric conception of IT leaves user needs and social factors largely unexplored (Finkelstein & Hafner, 2002; Orlikowski & Iacono, 2001). “Often, IT professionals focus on the technology rather than how the technology can help IT users perform their work” (Alter, 2003, p.381).

If the IT professionals’ practice is focussed on artefacts, then they may see their responsibility as being quite limited, however if the IT professionals’ practice is focussed on people, then their responsibility (as we will argue later in this paper) is considerably expanded. For IT professionals to grow ethically they need to turn their attention increasingly outwards, beyond technology. We argue here that the more outward-looking they become, the more ethical they can claim to be.

3.1 Expanding visions supported by empirical findings

This outward-looking attitude was found in a recent investigation into IT professionals’ experience of ethics (Stoodley, In progress). These professionals’ attention ranged from themselves and their inner circle of family and friends, through relationships formed in their work, to third parties who they did not know. This created a relationship continuum, moving from beneficiaries who are closely related to the professional to beneficiaries who are otherwise unknown to the professional. At the same time, the professionals’ attention extended from considering themselves as being free to choose how to act, through being answerable to formal supervisors, to submitting to their convictions about what it means to ‘do the right thing’. This created an accountability continuum, moving from unlimited freedom to a commitment to upholding personal convictions. This dual focus on relationship and accountability defined their ethical identity, their sense of belonging in the ethical landscape.
Five qualitatively distinct experiences of ethics were expressed by the interview participants in this project:

1. citizenship of my world;
2. citizenship of the corporate world;
3. citizenship of a shared world;
4. citizenship of the client’s world; and
5. citizenship of the wider world.

When experiencing ethics as *citizenship of my world* the IT professional is concentrating on guarding their rights and the rights of those who belong to their inner circle of family and friends. Their intention is to maintain self-preservation. This is a defensive position, with the professional choosing typically to uphold the status quo.

I Yes, whatever decision you take will produce harm in some way or another. Is there a way to see your way through that and figure out what to do?  
P I’d like to say I had the answer to that one but… in situations like that I think what I would do is probably do the minimum amount of harm to me! As I said, there’s always self-preservation... (Participant 8)

When experiencing ethics as *citizenship of the corporate world* the IT professional is concentrating on upholding the rights of the organisation that employs them. Their intention is to pursue the success of the corporation. This is a dutiful position, with the professional devolving ultimate responsibility to those higher in the organisational hierarchy.

if you identify risks to the organisation or to a process then you have a duty of care... to your managers to... bring it to their attention... (Participant 28)

When experiencing ethics as *citizenship of a shared world* the IT professional is concentrating on upholding both their rights and the rights of their clients. Their intention is to achieve a win-win result. This is a partnering position, with the professional sharing responsibility with the client.

I’d say that’s my clearest picture of ethics in IT and again it’s more of the win-win. I think we have an obligation to let the customer win and you win. Don’t harm yourself but don’t harm the customer.  
(Participant 6)

When experiencing ethics as *citizenship of the client’s world* the IT professional is concentrating on upholding the rights of the client. Their intention is to enable client success. This is a representative position, with the professional bearing responsibility for the client’s welfare.

... our clients... will have an expectation that we will cover bases that they don’t even think of... They may not know how to specify everything, so it’s up to us to … fill in the gaps. So that, if we’re building them a system... we try and build it according to what they actually need to do. (Participant 2)

When experiencing ethics as *citizenship of the wider world* the IT professional is concentrating on upholding the rights of humanity in general. Their intention is to uphold personally held convictions about what it means to do the right thing. This is a surrendered position, with the professional serving humanity and accepting any resultant negative consequences to themselves.

The reason I work in education and research is because it’s something that I value highly, something that I believe I’m contributing to the well good of man... it’s not like making a bank more profitable is a bad thing or an unethical thing to do by any stretch of imagination... But it’s about what I want to achieve and what I think that I should be doing to contribute to society and mankind and whatever and I would rather have my skills used in an area which I think is… better... (Participant 13)
All of these citizenship experiences are ethical in and of themselves, however we argue that the more ethically mature an IT professional is, the more of these experiences will be represented in their portfolio. This is supported by the research approach employed to collect and analyse the data, phenomenography, which observes across many phenomenon that the more categories a person is able to experience the more comprehensive is their experience of that phenomenon (Marton & Booth, 1997). In this case, the more ethically mature the professional is, the more they will look outwards from themselves, seeking to meet others’ needs and being willing to accept negative consequences for themselves in the process. This represents an increasingly other-centred attitude.

3.2 Expanding visions supported in the literature

Our claim that the ethical maturity of professionals can be discerned in terms of the extent to which other-centred experiences are represented in their portfolio is further supported in the literature, in the light of the ground of ethics in the professions, the demands of ethics in general and an identified common ethic across cultures.

With respect to ethics in the professions, professional ethics has in the past been founded on expertise and contracts, however each of these may, to the contrary, give customers reason to suspect the professional of being unethical. Expertise may be abused, as professionals take decisions based on knowledge the client does not have, offering an opportunity for the professional to exploit their client. Contracts may limit professionals’ responsibility towards their client rather than protect the client, offering an opportunity for legal neglect. Both expertise and contracts, if they are to provide grounds for clients to expect ethical action on the part of the professional, must be based on a prior condition. That condition is the public promise of the professional to serve the public good and this alone adequately grounds professional ethics. Thus, promise-keeping to clients is central in professional ethics (Koehn, 1994).

With respect to ethics in general, our interaction with others is understood to be the experience which calls forth an ethical response from us. We cannot deny that others exist who are different from us and who cannot be assimilated into our private world. We must respond to these ‘others’ and it is such response which reveals our ethics. We are therefore all ethical beings, in the sense that to be human is to be confronted with ethics. As such, our existence is defined by others, each moment of awareness calls forth a response from us towards others. Thus, ethics is central to being human and is defined as responsibility towards others (Davis, 1996; Levinas, 1998).

With respect to ethics across cultures, religion has been historically understood as a cultural institution which upholds high ethical standards. The Parliament of the World’s Religions, in formulating Towards a global ethic: An initial declaration, recognised the ubiquity of the Golden Rule: Do to others as you would have them do to you. In 1993 over 200 representatives of more than 40 faith traditions signed this declaration as common ground, and this has been confirmed by others since. Thus, ethics is understood as acknowledging the needs and concerns of other members of a common humanity with whom we share the world. Contrary to popular opinion regarding a perceived relativism of ethical standards across cultures, this humanitarian value appears to be quite stable (Schweiker, 2004).
All of the above affirm the importance in ethical conduct of focussing on others. An ethical attitude is a client-, other-, humanity-centred attitude. An ethical professional will exhibit such other-centredness.

3.3 Modelling expanding visions

Movement towards an other-centred view of professional practice is reflected in a movement through the five citizenships identified in our empirical research. As such, we are now in a position to add a professional ethics aspect to our Model of Evolving IT. This results in a Preliminary Model of Ethical IT (Figure 2. A Preliminary Model of Ethical IT).

The two-dimensional Model of Evolving IT (Figure 1. A Model of Evolving IT) is incorporated in the top left-hand corner of this new model. The other-centred nature of professional ethics is represented along the third dimension of the outward-looking axis of the new model. This represents a professional whose practice is defined by their sense of responsibility towards others and their willingness to forego their own interests in order to meet those people’s needs.

Our Model of Ethical IT can be extended to incorporate the more detailed information about the citizenships outlined earlier in this paper, as in Figure 3. A Model of Ethical IT. In this model the professional’s relationships with the beneficiaries are included in the top right-hand corners of the rectangles representing each citizenship, the actions associated with the experiences are on the right-hand edges and the associated intentions are on the bottom edges of each citizenship.

This detailed model serves to illustrate more clearly the expanding nature of these experiences.
4. Moving professionals towards expanded ethical practice

Given the increasingly other-centred nature of ethics and ethical professional practice, ethical education should aim to expand professionals’ experience of other-centredness. This is more than about learning facts or ways of reasoning. It is about how professionals see themselves, their discipline and ethics.

Some approach ethical education as the presentation of standards of conduct. This is primarily done in order to exercise control over a professional’s behaviour. Codes of ethics are acknowledged as being useful tools for this purpose (Munro & Cohen, 2004). However, the use of codes as motivators of ethical conduct have also been questioned on the basis of their inability to cover all possible scenarios, their engenderment of a checklist approach to ethical responsibility, their dependence on ethical awareness to know when they apply, their misuse to legitimise the profession and the difficulty of enforcing them. (Bynum & Rogerson, 2004; Coady & Bloch, 1996; Grodzinsky, 2000; Tavani, 2004; Taylor & Moynihan, 2002)

Others approach ethical education as training in decision-making. This is pursued in order to enable independent thought on the part of the professional. Ethical philosophy and decision-making techniques are often employed to this end. However, ethics here is typically understood to be a highly rationalistic activity, consistent with Kohlberg’s stages of moral development which are intimately linked with cognitive development (Kohlberg, 1981). This is criticised as not being representative of how many of us approach ethics (Gilligan, 1982), of how an expert typically takes decisions (Dreyfus & Dreyfus, 1990) and of effective guidance for ethical conduct (Volkman, 2004).
If ethics is essentially the adoption of an other-centred attitude, as argued earlier, we suggest that approaches to ethical education which emphasise ethical standards or ethical decision-making depend on a prior de-centring of the professional. The relationships established through an other-centred attitude help ensure that ethical standards and decision-making methods will in fact be applied for the good of others. As such, a de-centred professional provides an appropriate foundation upon which the other approaches may build.

Empirical evidence is growing to suggest that such a personal re-orientation towards others may be achieved through the application of Variation Theory (Edwards & Bruce, 2004; Marton & Pang, 2006; Marton & Tsui, 2004). This theory understands learning in terms of a change of relationship between the learner and the phenomenon they are learning about. Effective learning develops the learner-phenomenon relationship, making it more comprehensive, more sophisticated, more inclusive of a variety of views. Such learning is enabled by exposing the learner to ways of experiencing the object of their attention, which they would otherwise not be aware of. This variation in experience, however, must be in qualitatively different and educationally significant aspects of the phenomenon.

Research into IT ethics formation has emphasised the importance of attitude and intention (Cronan & Douglas, 2006). As such, Variation Theory and its association with phenomenography, which offers access to intentions, presents a useful tool for ethical formation. It is expected that the application of Variation Theory to broaden IT professionals’ experience of ethical practice would serve to open up their understanding of what it means to be an ethical IT professional to new vistas, influencing their conception of their professional practice. From this change in conception it is anticipated that professionals’ ways of relating to the wider world would change.

Educational interactions which prompt such change through Variation Theory need to emphasise both variation and experience. They do not operate simply on the cognitive or behavioural level. They need to orient the learner towards educationally significant variation that they normally would not notice and lead them to encounter difference at an experiential level.

Activities which could engender such encounters include (with reference to our Model of Ethical IT):

- clarification of the nature of learning as experiential;
- presentation and discussion of the range of citizenships;
- self-assessment of the learner’s practice against the citizenships;
- examination of case studies of IT professionals representing the range of citizenships;
- involvement in practical projects which expose learners to the range of citizenships; and
- journaling of personal engagement with the citizenships.

These activities are suggested ways of drawing the learner’s attention to their experience, to alternative experiences and to the differences between these.

We suggest that an emphasis on interaction with a diverse range of people and personal reflection in the light of that interaction are core to this process. Similar approaches to IT ethics education have been advanced by others, for example through the collaborative construction of a code of ethics (Stahl, Wood, & Howley, 2004) and through engagement in an industry-academia joint project (Vartiainen, 2005). The central goal for us is to
intentionally focus on variation of experience. The role of the instructor in Variation Theory is to ensure that the learner’s experience is being expanded in ways that are potentially educationally meaningful.

5. Conclusion

Changes are proposed here, to our understanding of the IT discipline, to our understanding of the nature of professional ethics and to our approach to IT ethics education.

As such, we have argued that for IT professionals to be enabled to become more ethical in their practice:
1. The purpose of IT must be primarily understood to be user-oriented;
2. The nature of professional ethics must be primarily understood to be other-centred; and
3. The goal of ethics education must be understood as primarily promoting a change in experience, towards others.

This presents a new approach to IT professional ethics formation which we believe offers a foundation upon which other approaches may build. It is in broadening professionals’ vision to new, ethical vistas that they may be inspired to orient their practice, beyond technology, towards the good of the wider world.

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