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IT professionals' experience of ethical decision-making and its implications for IT education

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Abstract

The rapidly changing information technology environment presents IT professionals with significant ethical decision-making challenges. This research will contribute to understanding how to best equip professionals to take ethical decisions in such a milieu. The research will supplement existing studies, which are predominantly quantitative, focussed on students and theory-based, by an investigation of practicing IT professionals' lived experience using the phenomenographic approach. Implications will be drawn for IT professional development.

THE RESEARCH TOPIC

Information technology is a relatively new discipline and in a continuous state of innovation. This discipline infancy and state of change have resulted in "policy vacuums" and a "conceptual muddle" (Moor 1998) which leave IT professionals in a vulnerable position when taking ethical decisions. Gotterbarn (cited in Rogerson et al. 2000, ¶2) recommends "professionals must be aware of their professional responsibilities, have available methods for resolving non-technical ethics questions and develop proactive skills to reduce the likelihood of ethical problems occurring".

One response to this need has been to guide IT professionals by means of codes of ethics, through professional bodies such as the Australian Computer Society (ACS 2003). The influential role of codes has been recognised (Munro 2004), however they have also been criticised for being insufficiently comprehensive, internally inconsistent, dependant on pre-existing ethical attitudes, reactive in their approach to ethics and influential over only a limited percentage of practitioners (Tavani 2004; Taylor and Moynihan 2002; Wheeler 2002; Spinello 2001; Grodzinsky 2000; Johnson and Nissenbaum 1995). A complimentary response appears to be necessary.

Another response has been to focus on pre-vocational formation (Gotterbarn and Miller 2004; Greening et al. 2004; Turner and Lowry 1999). As important as this is, practitioners draw on wider experience which influences their approach to ethics (Prior et al. 2002; Cappel and Windsor 1998). A response tailored to their needs and insights seems necessary.

To date, most studies into IT ethical decision-making have theorised about the behavioural aspects of the decision-making process and how these may be influenced. I am proposing to complement these studies with an investigation of the lived relation of the IT professional decision-maker to their decision-making. This has potential to open the way to a new approach to professional development in ethical decision-making.

My proposed research objectives, therefore, are:

1. To understand variation in what IT professionals experience as IT ethics and how IT professionals experience the use of ethics in IT (i.e. ethical decision-making);
2. To represent IT professionals' experience of ethics and ethical decision-making in a relational model;
3. To explore the relationship between this relational model and existing models with respect to ethics and ethical decision-making; and
4. To consider the implications for the professional development and continuing education of IT professionals.

WHY AND TO WHOM THE RESEARCH IS IMPORTANT

The significance of ethics for IT professionals is recognised by IT professionals themselves, employers, academics and students. A recent Australian survey of Information Systems (IS) professionals and educators

(Snoke and Underwood 2006) revealed that they considered ethics to be an important capability for graduating students. Another Australian study which compared student expectations of IS graduates with those of employers found that both groups considered Business Ethics, a typical IS elective, to be important (Turner and Lowry 1999).

Preston (2001, 6) considers that the expansion of technology has taken us to a point where "the human capacity to determine what we *can* do, has outstripped our ability to decide what we *ought* to do" (emphasis mine). In the light of this, the need for in-depth examination of IT ethical decision-making is greater than ever.

It is anticipated that this project will contribute to:

a. the research field, through adding an Australian, qualitative, experience-based perspective;

b. professional bodies, through insight into IT professionals' lived experience; and

c. professional development, through examining and developing tools for post-tertiary formation.

There has been little or no empirical research to date into each of these aspects of IT ethical decision-making.

Specifically, IT educators should benefit by the tools for and model of IT education developed. IT professionals should benefit from being more competent when approaching ethical decisions. Society should benefit by being more ethically served by IT professionals.

LITERATURE REVIEW

The literature surveyed to date reveals a code-oriented, theory-based approach to researching IT ethics.

Aids to ethical decision-making proposed by researchers to date have been predominantly oriented towards enabling professionals to apply codes of ethics to specific situations (Harris et al. 2001, 2002; Rogerson et al. 2000). The conceptual relationship of the decision-maker to the decision they are facing warrants greater attention - social psychology and ethical decision-making theories, for example, recognise the significance of attitude in influencing behaviour (Ajzen and Fishbein 1969; Cronan and Douglas 2006).

The development of models of the experience of IT ethical decision-making to date also typically start with a theory of ethical decision-making which is tested against experience using a quantitative methodology (O'Boyle 2002; Robbins et al. 2004). On this basis, various IT ethical models have been developed (Cronan and Douglas 2006; Robbins 2005; Leonard et al. 2004; Peace et al. 2003; O'Boyle 2002). No research has been found that starts from an in-depth qualitative analysis of the practitioner's experience and develops a model based on that.

Additionally, ethicists and social commentators offer a breadth of possible approaches to ethics (traditionally: deontological, teleological and virtue ethics) and offer an interpretation of their application in professional practice (for example, Koehn (1994) on professional ethics, and Australians Preston (2001) and Mackay (2004) on general ethics).

THEORETICAL BASIS

My research will pass through three stages: data collection and analysis, model comparison and educational implication-building.

Data collection and analysis

A phenomenographic research approach will be used to collect and analyse the data. Phenomenography was developed in the context of education and has been used widely, including in information literacy (Lupton 2004; Bruce 1997), information retrieval (Edwards 2004) and learning to program (Booth 1990; Bruce et al. 2004). Phenomenography seeks to elicit variation in the experience of a group of people and present an interpretation of that experience in a way that makes their experience accessible to all.

Rather than focussing on the person or on the object of their experience, phenomenography concentrates on the relationship between the person and the object. This relationship is described in terms of its structure and meaning, with two elements constituting the structural aspect – the external relationship of the phenomenon to its context and the internal relationship of its parts to each other. The results of a phenomenographic analysis describe the ways of experiencing for the group studied and indicate how those different ways of experiencing relate together. Typically, some ways of experiencing are more comprehensive or insightful than others and therefore a hierarchy of ways of experiencing emerges (Marton and Booth 1997).

The sampling of participants will aim at a high degree of representativeness of the breadth of experience in the IT professional community. Additionally, the typically hierarchical nature of phenomenographic results tends to reveal possible gaps in the chosen sample's experience.

Model comparison

The model comparison will draw on existing theories of IT ethical decision-making. Various IT ethical decision-making models have been proposed (for example, Harris et al. 2001; O'Boyle 2002), a number of which aim to account for diverse influences on ethical decision-making (Leonard et al. 2004; Cronan and Douglas 2006). In particular, the Theory of Reasoned Action (TRA) and its successor, the Theory of Planned Behaviour (TPB), have been applied widely to IT ethics (see Cronan and Douglas 2006). Additionally, IT ethics research has been significantly influenced by Leonard Kohlberg's theory of moral development (Kohlberg, 1981), though Carol Gilligan (1982) has argued for a care orientation which contrasts with Kohlberg's justice orientation.

Educational implication-building

Conclusions for IT ethics education will be guided by variation theory (Marton and Booth 1997), which applies the results of phenomenographic analysis to learning. A central tenet is that learning occurs when we are introduced to new ways of perceiving the world (Marton and Booth 1997; Runesson 1999; Pang 2003). This approach to learning is applicable, because of its power to equip practitioners for an evolving future through a change of perspective.

> If you want to prepare people for handling novel situations in powerful ways, the best thing you can do is to try to develop the eyes through which they are going to see novel situations in the future. … Powerful ways of acting originate from powerful ways of seeing (Pang and Marton 2003, 181).

This analysis will result in insights and tools relevant to professional development in IT ethics.

RESEARCH DESIGN

I plan to interview 30 IT professionals who are representative of a breadth of experience in the IT profession. The participants will be chosen to give the maximum potential for variation in experience - across age, gender, race, educational background and IT sub-discipline.

The semi-structured interview will include four common core questions (see Table 1). The participants' responses to the core questions will determine the subsequent interaction, with prompting questions introduced by the interviewer to enable them to understand the participants' experience from the participants' point of view. Questions will be open-ended, to limit the introduction of the interviewer's personal ideas into the conversation and to allow the participant maximum control over the direction of the interview. The prompting questions will explore the dual aspects of the participants' experience of ethics and their experience of ethical decision-making.

Table 1. Interview Schedule

Question	Purpose
1. Explain what IT work you do now. Can you remember a situation where you had to make an ethical decision relating to IT? Describe the situation and how you went about the decision-making.	Orients the participant to the phenomenon, through their own experience.
2. In reference to these examples [3 scenarios supplied pre-interview], are there IT ethical issues involved? If so, what are they and how will you go about deciding what to do?	Broadens the conversation to other contexts.
3. When you were looking at these examples, what helped you decide what the IT ethical issues were and how you will resolve them?	Prompts reflection on a more general level.
4. In general, what makes a decision an IT ethical decision and how do you resolve it?	Requests an abstract statement.

Data analysis, based on the interview transcripts, will follow an iterative cycle of careful reading of the transcripts, organisation into categories of the experiences revealed and return to the transcripts to assess these categories against the interview data. The primary goal will be to represent the variety of experiences described by the participants as a group in terms of their distinctive meanings and limits, and their relationships with each other. Software such as Nvivo will be used to administer the data.

A comparison of the theoretical models of ethics and ethical decision-making found in the literature (both traditional and more recent, as mentioned earlier) and the relational model of professionals' experience will explore how each informs the other.

The implications for professional development and continuing education will suggest how this model comparison reveals critical educational elements, as indicated by variation theory, and develop tools of use in IT professional ethics education.

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