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The Effect Of Analytical Thought On Ethical Issues in the Information Systems Discipline

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Abstract

Professionals within the IS discipline are increasingly responsible for decisions that can have major, usually unforeseen, impacts on individuals, groups and society. This paper explores how these decisions are generally made, stating that there is a dominant decision style within the IS profession. This style of decision making may not be adequate for decisions that can lead to negative societal impacts. The paper concludes with a number of future directions which will help address the problems associated with a dominant decision style.

Introduction

Decisions made by IS professionals and those using information systems have far reaching, usually unexplored, ethical implications. Mason et al state that "we are responsible, in whole or in part, for the social consequences of the information systems in which we participate" and they suggest that "to satisfactorily discharge this responsibility, we should be able to make good ethical decisions" (Mason et al, 1995, pp. 9). They invite us to explore ethical situations and to reason through these to come to a proper ethical judgment. This paper will examine how these decisions are generally made within the IS profession and suggest that this is inadequate for proper ethical reasoning. This paper does not explicitly identify moral issues regarding the design and use of information systems, others have identified and detailed many such issues. This paper argues for the adoption of a wider range of decision styles so that ethical issues can be properly perceived and once visible properly dealt with.

Dominance of Sensing-Thinking Within the IS Profession

The Jungian typology has been used in the consideration of decision style, it consists of four functions, the irrational functions of perception and the rational functions of judgment. Individuals develop a preference for one function over another, thus one can talk of certain types who will utilize their dominant functions in general circumstances. The ways in which a decision maker perceives or obtains information from the outside world are known as the perception functions, ëSensingí and ëIntuitioní. By paying particular attention to the use of the eyes, ears and the other senses, sensing types gather hard facts about the situation usually dividing these facts into small manageable pieces. In comparison intuition types take a holistic view of the situation they tend to look for relationships, meanings and importantly possibilities. Next the judgment functions, ëThinkingí and ëFeelingí evaluate the objects of perception. Thinking types utilize logic in their search for a decision which tends to be impersonal and based on finding the elusive cause and effect. Feeling types tend to see the uniqueness of individuals seeing their values as important. A feeling type will make a decision on whether it is important or is of value, to them or others, rather than being logically consistent or correct.

The rest of this section will postulate that the dominant decision style of information system professionals is that of sensing-thinking or the ST type. "The ST type, one can easily argue, has become the epitome of the industrial revolution.... that is, the ST type emphasises precision, control, specificity, impersonal (objective) analysis, logical and orderly reasoning" (Kilmann & Mitroff, 1975, pp. 19). The link between information systems design and ST is encapsulated in this quote by Kilmann & Mitroff, each of precision, control, specificity, impersonal (objective) analysis, logical and orderly reasoning would not be alien ideas to many within the discipline of IS design. More over these ideas are regarded by ST types as the only valid ways of coming to a decision. Management science or information systems has tended to be a predominantly Thinking-sensation activity that results in information systems that reflect this view (Mason

& Mitroff, 1973). Wood and Wood-Harper (1993) also discuss the attraction of the ST view to information systems designers stating that it is obvious given the characteristics of the technology.

When Linstone speaks of "the traditional perspective of the engineer and scientist" and how "Reliance is placed on data and models, and combinations thereof, as the only legitimate modes of inquiry" (Linstone, 1989, pp. 309), then he is talking of the sensing-thinking psychological type. When he refers to this as the most successful 'religion' of modern times he is identifying sensing-thinking as the dominant mode of decision making of the Western world, a view shared by Mitroff and Kilmann, "... this is but a reflection of the fact that the dominant psychological attitude underlying science is that of ST" (Mitroff & Kilmann, 1975, pp. 167). This dominance of decision style may be due to the educational style adopted by the Western world, it is no exaggeration to state that the majority of people educated within the Western world were taught using old thinking that embodies the sensing-thinking style, and this includes the majority of IS professionals (Mitroff & Linstone 1993).

The Effect of Analytical Thought

The use of sensing to perceive the world and thinking to make judgments about it may not be congruent with proper moral consideration. Mitroff & Linstone (1993) contend that Western scientists turned away from ethical issues because ethical issues are nor susceptible to agreement and analysis (or sensing and thinking). Bearing this in mind the sensing-thinking dominance affects ethical decisions made by IS professionals during the design process and ethical decisions made by those who utilize information systems thus designed, as below. The analyst biased toward the sensing-thinking decision style may confront ethical decisions in one of two ways; either by taking a analytical ethical stance, a deontological view; or by accepting the implicit ethical stance of a design methodology:

Analytical Ethical Stance

The dominance of ST types within IS design often leads to a rationalistic choice of ethical stance. All too often the IS professional relies too heavily on rules or codes of conduct they do not, in general, consider other ways of coming to an moral decision. This leads to a dominance of the deontological ethical stance as represented by codes of ethical conduct, "ethical codes encourage professionals to view morality in a grossly simplistic deontological way" (Hussey, pp. 4). Deontological ethical rules can be seen as parcels of logic that are particularly attractive to sensing and thinking. Such logical rules do not require other forms of perception and judgement. Furthermore, there is no need to balance the utility or the good and there is no need to consider the fairness or justice of decisions or actions taken, such balancing requires other thinking styles.

Although codes of conduct by their nature address ethical issues in a deontological manner, some do contain other normative ethical theories such as consequentialism, as within the ACM Code of Ethics. However, when codes of conduct do consider other ethical ideas they do not address the problem of conflict resolution between the different ethical theories involved (Walsham, 1996). To take this argument further Mason (1995) advises us to consider all of what he refers to as ethical lenses when making a decision, he further suggests that this is a moral *judgment*. In order to make a proper moral judgment of this type the perception of personal and group values would be most important, requiring the adoption of other perception and judgement functions than that of sensing-thinking.

Ethical codes of conduct do not assist the decision maker to look for less visible social issues (Walsham, 1996). For many who favor codes of conduct ethical issues are always known, for example Anderson et al (1993) present nine cases in order to show how the ACM Code of Ethics can be used In each of the nine cases the ethical issue is known and explained there is no need for the decision maker to gather information about the situation. It is no longer sufficient to present IS professionals with "a list of *specific* and *precise rules* [that] cannot accommodate the infinite variety of situations..." (Hussey, pp. 4). However, we must be careful not to dismiss codes of conduct, they do have a role to play within ethical information systems but they should not be considered as an excuse for not exploring and properly reasoning ethical issues. We

need to assist IS professionals, possibly using codes of conduct, by giving them proper mental tools to gather appropriate information from the social realm and to form a properly considered moral judgment. These *moral* judgments should take into account the views and values of others. The view taken here is that each ethical theory can offer insight into moral issues and that it is the dominance of deontological ideas used in IS that needs addressing.

Implicit Ethical Stance of Methodology

Wood-Harper et al (1996) state that traditional systems development methodologies pursue an analytical good of high efficiency and effectiveness, taking the view that this is embedded within the development methodology. The view taken in this paper is that because of the dominance of ST within IS design, individuals applying these methodologies will not question the analytical good, as the individuals involved may not challenge the assumptions of the ethical stance embedded within the methodologies. Indeed individuals biased toward the ST decision style may not see as valid any other form of perception (gathering of information) or recognize other forms of information, "The reason is that different cognitive styles have fundamentally different concepts of what is regarded as information" (Mitroff & Mason, 1983, pp. 197). Methodologies portray the sensing-thinking decision style which is not sympathetic with ethical consideration. If IS professionals follow the methodological lead and pursue sensing-thinking, they will not pursue the proper analysis of the values held by the other parties involved.

Information Systems Designed with Analytical Thought

Analysts and designers tend to project their psychological type into the information systems they produce, thus the information system itself embodies the decision style of sensing-thinking (Mason and Mitroff, 1973). This results in managers purveying over impersonal and rational information that presents one view of the world, more over it contains information that meets the stringent rules and structure of the analytical mind. As IS professionals we should make all attempts to provide information devoid of bias toward one worldview. Information orchestrators should handle information with fidelity (Mason et al 1995). If information is to be handled with fidelity it should not be corrupted by the decision style of IS professionals. Mason & Mitroff state that, "managers need information that is geared to their psychology not to that of their designers" (Mason & Mitroff, 1973, pp. 485). We should present the decision maker with complementary information to assist him/her in making a judgment based on all possible views of the world and taking into account the values held by *all* those concerned. It is this papers view that the inclusion of different modes of presentation could lead to a more holistic look at a given situation and that this might lead to decisions, made using information systems, that do not overlook the rights and values of others.

Future direction

In order to make an impact on the effect of analytical thought in ethical judgment making there is a need to approach it from three directions as below:

Teaching Decision Making Principles

Walsham, drawing on Maclaren et al, suggests that "the emphasis on technical training of IS analysts [professionals] coupled with their own view of themselves as technologists," might lead to a "system expert role" (Walsham, 1993). The teaching of different methods of perception and judgment will allow individuals to recognize ethical issues and to select multiple ways of dealing with them We must include in any curriculum for IS professionals: the use of ethical codes of conduct; general ethical theories and ideas, to give grounding for ethical codes of conduct; and perception and judgment styles, the principles of decision making to assist students in the application of these ethical ideas. "we have trained business students [IS professionals] in *ST* and NT methods and techniques, we *need* to train them for SF and NF skills as well - perhaps even more" (Kilmann & Mitroff, 1976, pp. 24).

Perception and Judgment Within Ethical Analysis Tools

Ethical issues within the IS profession are now being considered by many within and outside the academic world, this has lead to the introduction of ethical analysis tools or methods, such as the one espoused by Wood-Harper et al (1996). Thinking in terms of decision style we must consider the use of ethical analysis tools, to see if they can bridge the gap between rational thought and complete ethical thinking. For instance, there are a number of areas within the method espoused by Wood-Harper et al (1996) that require further exploration of perception and judgment style, one of these areas is the use of SSM:

Atkinson (1989) provides us with ideas that call into question the use of SSM without proper regard to a decision making process. Atkinson (1989) states that moral judgments are implicit in a number of areas within SSM, these include: the decision to use SSM; the continued exploration of a root definition; the moral nature of particular worldviews; the choice of metaphor; the comparison between the models and the real world. Therefore, moral judgments are required at various stages before, during and after the use of the methodology, furthermore the methodology does not assist the analyst in any of these moral judgments.

Presentation Methods

"Managers need information that is geared to their psychology not to that of their designers." This statement by Mason & Mitroff was made in 1973 and yet we still see today information systems developed without regard to decision style or the need of managers to be able to see multiple views of the world that include personal as well as group values. This results in managers making decisions taken using impassive and impersonal information contained within a logically cohesive data set that portrays one view of the world, which surely cannot assist managers to make properly considered ethical decisions. We must try to provide decision makers, those who utilize information systems, with computer based tools that present information that is personal, that suggests values and that does not rely on one view of the world, viewing the world from multiple perspectives and using different modes of inquiry (Mitroff & Linstone, 1993).

Conclusion

Wood-Harper et al suggest that "the analyst should attempt to recognize various ethical viewpoints present in a situation to allow a better understanding of the human context" (Wood-Harper et al, 1996, pp. 70). In order to assist analysts in this endeavor we must make the decision making process an issue in the teaching of IS professionals; recognize the importance of perception and judgment within ethical analysis frameworks or IS development methodologies; and provide information systems that convey multiple viewpoints and multiple values, to allow for proper ethical reasoning by those who use the *products* of the IS profession.

References available upon request from Brian Byrne.