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THE THEORY AND PRACTICE OF TEACHING RESEARCH ETHICS

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ABSTRACT

There is general agreement that research involving human participants is important to the development of new knowledge in several areas. However, the interface between science and society has historically been beset with conflict. Positivist research paradigms, in particular, have been perceived to potentially impinge on group and individual rights. Nevertheless, utilitarian judgements dominate the practice of research, raising the question of whether researchers are likely to give adequate consideration to questions such as the autonomy of research participants. More pertinently, given the functionalist approach to teaching in Human Movement Studies and allied disciplines, are young researchers and students being provided with the means to identify and attempt to resolve ethical dilemmas in research contexts? It is contended that ethical awareness, and improving the capability of ethical decision-making, should be approached through a process of education. In practice, students learn first by doing and then by extrapolating principles from what they have done. In order to teach the abstract notion of research ethics successfully, teaching must start with what is known, and progress in a systematic way until students develop the necessary skills to critically evaluate and apply the relevant principles. This can be achieved by training in research methodology, introduction to ethical theory, familiarisation with relevant reading material, discussion of seminal research as case studies, critical examination of current research, and evaluation of personal research projects. This method raises consciousness of the issues involved, encourages young researchers to take certain questions seriously and generates discussion about them. The crucial element in addressing problems of scientific misconduct involves education, rather than sanction after the fact.

Key words: Ethics; Research; Education.

ETHICS, RESEARCH AND SOCIETY

As a philosophical endeavour ethics "... is an investigation into the fundamental principles and basic concepts that are or ought to be found in a given field of thought and activity" (Flew, 1984:12). Veatch (1989:6) provides a more comprehensive definition:

> Ethics is the enterprise of disciplined reflection on moral intuitions and moral choices. It often begins with intuitions and long-held convictions. It attempts to compare them for consistency, to formulate rules of conduct accounting for our considered judgements, and to articulate general principles that might

> underlie these judgements and rules. It confronts questions such as how these more general rules and principles relate to each other and to our judgements. Finally it deals with basic questions of what we mean when we say something is ethical or unethical, and how we can know what is right or wrong.

Normative ethics is the subject which deals with substantive issues such as what ends are "good", what acts are "right", what policies are "just" and for what acts a person should be held "responsible" (Hospers, 1990). The emphasis here is on the content of moral principles and virtues, and their justification in terms of the human condition (Flew, 1984). This involves making practical judgements and adopting particular moral standpoints. These judgements tell us what we ought or ought not to do, and this has obvious implications for researchers utilising human research participants.

Our judgements are derived from defensible ethical theories, which need to be applied to practical moral puzzles that are encountered daily in the lived world. Accordingly, moral philosophers are increasingly directing their attention to applied ethics, to bring ethical theories to bear on specific real world problems. Bok (1978) states that free scientific inquiry and social stability are often at odds. Indeed, this is so, and the interface between scientists and the public has historically been beset with conflict. For confirmation, one has only to turn to the example of Galileo, and many other social and political concerns have consistently produced, and continue to produce, friction between scientific inquiry and society (Kroll, 1993). Particularly when research (and the freedom to conduct it) impinges on the perceived rights of individuals or groups, a sense of alarm grows even in societies that have traditionally given free rein to such activities (Bok, 1978).

In Human Movement Studies (HMS) and allied disciplines, progress has demanded that subjects be increasingly subjected to manipulative and sometimes even invasive procedures. The very nature of research of course means that while procedures may be carefully implemented and controlled, the specific effects cannot be predetermined (Brodie & Stopani, 1990; Olivier, 1995). Nevertheless, in Western society, science plays a revered role, and scientific development has long been regarded as an undisputed good for everyone. For example, Western medicine, a fundamentally rational and experimental science, holds research in high esteem, and bases much of its power on it.

Higgins (1996) feels that there is little convincing evidence that the institution of science is in danger in the USA. Macilwain (1996:355) supports this when he states that: "The American public continues to hold science in respect, with three-quarters of the population believing that the benefits of research outweigh its harmful results". As pointed out, research in these contexts is not without risks, and particularly as a result of problems arising in the medical arena, ethical issues have recently exploded into the public consciousness. This explosion has led to some doubt as to whether research, particularly research involving human subjects, is based on shared interest between researcher and object, between society and researcher, and between society and the individual, or whether certain areas of research contain different or even antagonistic interests (Scocozza, 1989).

This raises the issue of whether or not current research practices are geared towards utilitarian or deontological ethics. Put simply, utilitarian ethics are characterised by the importance they attach to the ultimate usefulness of the acts that one performs. In a research context this means that ethical acceptability is assessed on the basis of the consequences, specifically the applicability of

the results (Scocozza, 1989). In short, utilitarians contend that the ethically defensible is that which can be useful to most people. In contrast, deontologists maintain that ends do not justify means, and that an individual's interests, freedom and possibility of choice must be central. In this approach morality is founded in a dialogue in which the partners recognise each other as equals, a point of view that has important implications for investigators and research participants.

Which approach holds sway in our current research environment? Brodie & Stopani (1990) have little doubt that the utilitarian view tends to predominate in experiments in Human Movement Studies and the allied disciplines. This supports the view held by Scocozza (1989) who states that the predominant ethics within the health sector are utilitarian. Utilitarian ethics are an inevitable result of a positivist approach to science, an approach criticised by French (1987:18), who states: "In the positivist programme, research is something that is done to people, perhaps for people, but the stance of objectivity prevents it from being done together with people or by them". Nevertheless Bok (1978:124) believes that "if total harmlessness were a prerequisite, little progress would be made in areas where urgent needs must be met".

There have been, and continue to be, numerous demands for the regulation of research with injurious or invasive potential. Bok (1978:115) argues that "the freedom of scientists to pursue research unchecked must ... be weighed against the freedom of those affected by the research". Following on from this, the risk of retarding progress and hampering researchers through regulation must, in turn, be weighed against the risk of harm in the absence of regulation. Many in the scientific community, and Human Movement Studies is no exception, would probably be disturbed that the question even arises. They probably contend that, generally speaking, the risks are relatively small or non-existent, and further, when there are significant risks, the researcher's integrity and the existing avenues of regulation are sufficient to provide adequate protection for research participants. Some of these claims are of course legitimate.

A great many researchers in Human Movement Studies and the allied disciplines pursue tasks so benign that they are not even remotely capable of threatening anything or anyone. Just one example might be questionnaire administration to examine attitudes toward Physical Education in schools. In such a case, particularly if coercion is absent and anonymity guaranteed, consent is implied by mere participation, as refusal to reply is a viable option. Further broad categories might include case histories, analyses of injuries, research concerned with technical or biochemical information, work with purely statistical data, and surveys in general.

It is difficult however to classify certain types of research as potentially harmful and others as risk free. For example, even observational studies, in themselves seemingly least capable of having an effect of a harmful nature, can carry risks through improper and intrusive observation. Also, when observation takes the place of known therapy, the lack of action is considered unethical. Even in research as seemingly benign as questionnaires can the information gained be misused to the detriment of the participant. There is no neat dividing line, and were such a barrier to be suggested it would have to be considered an artificial one. Nevertheless, the point is that many researchers, if they consider the issue at all, view their investigations as fundamentally risk-free. Of greater significance though is that others who do perceive some threats from certain kinds of research may consider the potential benefits to humanity as sufficient compensation (Bok, 1978).

ROLE OF PHILOSOPHY

This attitude is changing, probably partly in response to the fact that ethical problems in medicine and the biological sciences have, in recent decades, exploded into the public consciousness at an exponential rate (Veatch, 1989). With increasingly complex and advanced technologies, morally appropriate choices must be made. Borchert and Stewart (1986) contend that moral philosophers are best trained to evaluate and guide those choices. Throughout the world, departments of Philosophy are now offering courses in medical ethics, research ethics, environmental ethics, business and professional ethics etc. Why has this happened? The primary reason for the growth of Applied Ethics is that it is a response to new problems resulting from developing technology.

To advocate a "hands-off" approach to normative issues would constitute not only an abnegation of the traditional goal of moral philosophy (i.e. the good life), but also an unacceptable disengagement from important moral issues (Borchert & Stewart, 1986). These issues require the sort of insight that philosophical thinking is able to provide. This is supported by Veatch (1989), who holds that there is no reason to assume that being skilled in, for example medical science will make one expert in choosing among conflicting courses of actions. In short, knowledge of basic philosophical and ethical positions is necessary. Veatch (1989) states that to decide to pursue a certain course of action is to decide that it is more right than available alternatives and this means making a value judgement. Making this sort of judgement may involve making ethical choices. Some of these choices may be made instinctively, but in other cases our intuitions may fail us, or they may conflict with the intuitions or convictions of other people. When making ethical choices, the process would ideally involve disciplined, rigorous and systematic reflection on intuitions, convictions and facts before making a considered judgement as to what is morally right or wrong. This is, however, close to the definition of ethics as a discipline offered earlier. Veatch (1989) notes that increasingly ethics is becoming a discipline that is applied to real world problems. Following on from this, he defines Applied Ethics as a process which takes various rules and principles and integrates them with detailed knowledge of the relevant facts and customs of a particular sphere of life, such as medicine, or research on human beings.

In real-life situations, moral dilemmas are often generated by conflicts among moral principles, and normative principles serve as guides to action by specifying which types of actions are morally required, prohibited or permitted (Veatch 1989). Assessing the meaning and weight of the relevant principles, and then deciding what course of action ought to be followed resolve conflicts. It is worth noting that principles are general in nature, and specific rules may be subsumed under them. Veatch (1989) points out that moral judgements generally have a three-tiered structure, namely (1) principles, (2) rules and (3) particular judgements. It could be argued that there are three major principles (encompassing many other primary and secondary moral obligations and considerations), namely respect for persons, beneficence (including non-maleficence) and justice. Of these, the first is probably all embracing. Moral considerations in respect of research involving human subjects would include autonomy, obligations not to harm others, utility (obligations to produce a net balance of benefits over harm), justice (obligations to distribute benefits and harms fairly), fidelity (obligations to keep promises and contracts), privacy and veracity (obligations of truthfulness). More specific ethical considerations would include recognition of cultural factors, non-discrimination, sanctions against offenders, compliance with procedures, and reports of violations (Olivier, 1995). In addition, universalisability is widely accepted as a necessary condition for any moral judgement (Veatch, 1989). When applied to a research context, universalisability (which has obvious affinities with the biblical injunction to do

unto others as you would have them do unto you) holds that the researchers consider by what rule/action they would want to be treated in such circumstances.

Borchert and Stewart (1986) contend that to understand, accept and defend a moral theory is no guarantee of an ability to deal adequately with normative ethical issues. Rather than removing complexities and necessarily providing clear answers, moral theory provides a focal point from which to pursue relevant questions. Acceptance of a particular moral theory's approach to a problem hinges on formal criteria such as consistency, coherence, simplicity, comprehensiveness, and, more controversially, on such substantive criteria as the theory's capacity to account for and direct moral experience (Veatch, 1989). If this is accepted, aspirant researchers need to be *specifically* introduced to the various moral theories relevant to research ethics problems. In short, they need to be educated in moral theory.

EDUCATION

Many scientists, holding the belief that knowledge is intrinsically valuable, support the ideal of knowledge for its own sake (Drowatzky, 1993). The first, and probably the most important, decision-maker regarding the ethics of a proposed project, is the originating investigator. According to Kimmel (1991) many researchers are apt to overrate the importance of their work, and underestimate potential harms, as they make a decision of whether or not to proceed with a study. This sort of calculation extends to the personal sphere, where the prospect of not completing a higher degree, or of jeopardising funding, reputation etc. may assume great significance to the individual, perhaps at some ethical cost to the research participants. Also, a growing body of research suggests that individuals systematically differ in the manner in which they formulate ethical appraisals of research, with the result that researchers' solutions regarding the question of potential harm are all too often reduced to statements of personal opinion based on their individual views of morality (Kimmel, 1991).

The seemingly haphazard and wide variety of methods involved in ethical decision-making is not the only problem. As Human Movement Studies (HMS) has become increasingly specialised and techno-positivistically oriented, the so-called "non-scientific" components of courses (such as ethics), appear to have been assigned a secondary role in tertiary curricula (Malloy *et al.*, 1994). Put differently, generally speaking the emphasis in HMS curricula may be on functional rather than conceptual aspects of movement, with the non-functional courses either neglected or given subordinate status. Malloy *et al.* (1994) are in little doubt that HMS research generally operates from a functionalist and logical-positivist worldview, with the result that "students may be leaving our classrooms and laboratories with a singular, paradigmatic view of our field in general and research in particular" (Malloy, 1992:29). Graduates of HMS programmes will encounter ethical dilemmas in their professional lives as researchers, teachers, biokineticists, coaches, etc., and may, because of deficiencies in our curriculum structure, be unable to reason through these dilemmas to a satisfactory ethical solution. A functionalist education, by definition, does not acknowledge the interpretative realm of ethics, and leaves graduates, particularly those whose professional duties involve contact with humans, inchoate (Malloy, 1992). This would not be problematic if the post-education employment structures provided the necessary guidance, but there are few organisations whose nomothetic mandate includes the moral development of its members (Malloy *et al.*, 1994). Human Movement practitioners ought, not merely in self-protection but because there is a real need for it, to think more seriously about ethical questions *before* they are

confronted with awkward particular cases (Hare, 1993). Ethical awareness, and improving the capability of ethical-decision-making, should perhaps then be approached through a process of education.

NECESSITY FOR TRAINING/EDUCATION

According to Malloy (1992), one's ability to reason through moral dilemmas is determined by one's cognitive moral ability. Further, in order to develop this ability, " ... it is necessary for the individual to be exposed to ethical concepts and principles" (Malloy, 1992:29) and such exposure could best take place in tertiary curricula. This supports the view Cooper expressed in 1985 that individuals can achieve advanced moral reasoning capacities via curricula which include classes in applied ethics (Malloy, 1992). Education is thus seen as critical, with the role of the curriculum being to combat ignorance and poor decision-making. "Without an exposure to ethical theories students will remain ethically in the dark" (Malloy, 1992:28). Several authors agree on the need for education regarding ethical issues in science.

In response to the problem of scientific misconduct, Wright (1994) believes that the only thing to do is for the universities to develop explicit research standards and to promote these standards for faculty and graduate students. This echoes the early sentiments of Henry Beecher, who was convinced that only a persistent educational effort could bring about real change in the practice of research using human subjects (Faden & Beauchamp, 1986). Friedman (1988) concurs, holding that serious attention should be given to the technical and ethical development of advanced students and faculty, and that this should occur in the form of supervised training programmes that extend beyond formal research training programmes. Further, as a practical measure, he advocates that administrators limit the growth of laboratories to a size in which trainees can be adequately supervised by exercising proper control of space and personnel resources.

Goduka (1990) supports calls for education in research ethics, particularly in transcultural settings for which investigators may be otherwise unprepared, where discussions of informed consent, for example, must be supplemented by hands-on training. Goduka (1990:338) mentions that: "Universities should prepare prospective researchers for what lies ahead in the field. The training and guidance that graduate students currently receive about informed consent and what it entails is insufficient." Annas (1991) supports this point of view by stating that education may ultimately be the most effective way of modifying ethical behaviour. Pettit (1992) concurs that it is important to nurture a culture of research ethics. This would primarily be achieved by educating students in the ethics of research.

EXISTING CURRICULUM STUDIES

Given this apparent unanimity on the necessity for ethics curricula, particularly in research involving human subjects, one could be forgiven for assuming that such programmes abound. In practice the reverse however seems to be the case. Malloy (1992) and Malloy *et al.* (1994) conducted extensive surveys of ethics content in physical activity curricula with two aims. ("Physical activity" is used here as a generic term for faculties such as Physical Education, Movement Education, Human Movement Studies, Kinesiology, Sports Science, Human Kinetics etc.) Firstly, the existence of ethics as a separate course, and secondly, the rationale for the

anticipated absence of such courses was explored. Their results indicate that fewer than 25% of Australian, United States, and Canadian HMS departments offer separate courses in ethics. The rationale for the absence of these courses varied, with the primary reason for exclusion being a lack of appropriately qualified teaching staff. Other reasons were that ethics was a component of other courses (primary reason in Canadian programmes) and that there was a lack of interest in such a course by either faculty or students.

These empirical data seem to support the notion that HMS departments are committed to specialist, functionalist notions of the discipline, to the detriment of "non-essential" courses such as ethics. The data suggest that the exclusion of ethics is largely due to it being a component of other courses, and it seems reasonable to assume that department heads feel that this is sufficient. This is however problematic, for as Malloy *et al.* (1994) point out, it would seem optimistic to assume that students could achieve a firm grounding in ethical theory and praxis without specific and relevant exposure to the unique and particular ethical problems that may occur in HMS research. As such, an "... ethics 'unit' in a variety of courses is necessary but not sufficient to provide students with the tools of ethical critique" (Malloy *et al.*, 1994:15). Not only are such courses probably too short, but they are probably too general in nature to be of much benefit in particular situations that may be unique to human movement professionals. Malloy *et al.* (1994) advance an interesting, if speculative, reason for the absence of ethics curricula in Australian universities. They state that the relative youthfulness of HMS in Australia, coupled with a tendency to consider developments in other countries where programmes are more established, may have led to ethics being absent by collective omission. This situation could of course apply to South Africa as well, where curricula are largely based on existing North American models.

TEACHING METHODS

Who should teach ethics courses, and what teaching methods should be employed? Malloy *et al.* (1994) found that lack of qualified faculty was one reason for ethics courses not being included in curricula. This may be because faculty members with formal ethics backgrounds are not part of the staff complement, or it may be that individuals feel uncomfortable or are not confident of making the transition from technical-functional to philosophical-interpretative orientations. Given the current focus of the discipline, HMS departments are in practice more likely to be staffed by persons trained in science than those trained specifically in Philosophy. The question could also be raised as to what level of philosophical training is necessary, bearing in mind the widely differing content and focus of philosophy courses.

Malloy *et al.* (1994) recommend that departments which as yet do not offer courses in ethics in Human Movement Studies, should do so. This could be achieved through recruiting qualified staff, or alternatively by providing current lecturers with the means to develop their academic skills in this area. Pettit (1992) recommended those students of behavioural and biomedical disciplines should be educated in research ethics by experts in their particular discipline, rather than by outsiders. While philosophers might play a part in this educative process, the specific discipline itself should be involved. In this manner, students will be exposed to the sorts of cases that they are likely to encounter as professionals. Further, they will be made aware of what, by current professional consensus, is considered to be acceptable behaviour. Gifford (1994:314) agrees by stating that "The ideal relationship might be one in which the scientists are aided by others in constructing the educational materials". Malloy *et al.* (1994) recommend that ethics be

taught through a critical, sensitive pedagogy, and from a variety of perspectives, including philosophy and psychology, and that this "multi-disciplined approach will enhance the student's ability to understand and apply the notion of 'right', 'good', and 'authentic' conduct to a wider array of contexts, as well as understanding the cultural totality in which human movement activities exist" (Malloy *et al.*, 1994:16).

Olivier (1997) found that in the vast majority of South African HMS departments, research ethics is taught by resident HMS staff. This is not surprising considering the "sub-course" nature of the subject in HMS departments. A very small percentage of the staff teaching ethics had formal philosophy qualifications. It is worth noting that while such qualifications may on the surface be desirable, they in no way guarantee familiarity with the subject matter. The content of philosophy curricula in tertiary education varies widely from institution to institution and the emphasis placed on various branches of the discipline. Put rather bluntly, you might as well have a physiologist as a person qualified in formal logic teaching ethics. Neither may have the necessary grounding in research ethics to do justice to the course, and at least the physiologist will have some experience in research contexts.

What are the implications of this? Firstly, outside staff could be employed/seconded to teach ethics modules. This is contrary to Pettit's (1992) suggestion that students should be educated in research ethics by experts in their particular discipline, rather than by outsiders. This may be desirable, but it is then necessary that those "experts" be exposed to some sort of formal prior training themselves. An alternative would be to provide philosophers with an overview of HMS research and to utilise them in the teaching of research ethics. The rationale for this is that the focus of a research ethics course should be the application of justified ethical theories to research practices in HMS. It would seem to be much easier and less time-consuming to provide philosophers with an overview of HMS research practices than it would be to formally introduce HMS professionals to the ethical theory needed to effectively teach ethics courses.

On the other hand, proposed regulation from outside may cause resentment and non-adherence to the prevailing research ethic. Pettit (1992) acknowledges that philosophers might play a part in this educative process, but feels that specific disciplines should maintain their involvement. In this manner, students will be exposed to the sorts of cases they are likely to encounter as professionals. They will be made aware of what is considered to be acceptable behaviour by current professional consensus. In concurring with this approach, Gifford (1994) feels that an ideal relationship would involve scientists being assisted by others in constructing the necessary educational materials. A further possibility, particularly at undergraduate level, would be to develop a generalised course on research ethics, available to students in all departments. Advantages would be rationalisation of staff resources, or even just the assurance that the course is taught by adequately qualified persons. Such a course would provide students with a broad, cross-discipline outline of research, and illustrate the point that ethics is a fundamental and necessary part of the research process.

It is useful to consider current theories of learning and teaching when designing a course to teach something as abstract and conceptually demanding as ethics. Carrell and Eisterhold (Carrell *et al.*, 1988) mention the schema theory, largely developed in the field of reading but applicable to any learning activity, where meaning is constructed through the interaction of new information and the existing background knowledge of the individual. The emphasis moves from the encoded information to the interaction between the encoded information and the individual trying to make

sense of that information. Meaning is constructed through the interaction between the text (either written or spoken) and the background knowledge of the individual. Schema theorists argue that the text is interpreted by mapping the input from the text against some existing schemata. For the input to be understood, all aspects of the schema must be compatible with the new input that is being received.

What are the implications of this for the ethics units of HMS courses? Firstly, students come to the course with existing knowledge, and the course needs to start at this level. It could be misleading to make assumptions about existing levels of knowledge, so some time should be devoted to assessment. If incorrect assumptions are made, schema theory suggests that students would find it very difficult to understand the course because the new input will not be compatible with what they already know. Once the initial assessment has been made, the general aim is to advance the students' knowledge of ethics and the application of ethical principles to research contexts.

Vygotsky (Moll, 1990) has an illuminating understanding of the role of the task in learning activities. He would present subjects with a task that was too difficult to complete using existing knowledge and then provide (as the teacher or "mediator") support for the learners by way of new stimuli which would enable the learners to complete the task. According to Vygotsky, learning takes place by integrating the old knowledge with the mediated knowledge to complete the task, with the mediated knowledge being central to the whole learning process. In other words, the task facilitates the acquisition of new knowledge and skills rather than merely being a test of existing knowledge and skills. If this understanding of the nature of a task were to be implemented in a university environment, it would be important to have a well designed task with clear objectives to ensure that students understood what they were expected to do to complete the task successfully. Of vital importance, if the task is to be a learning experience for the students rather than simply a test of existing knowledge, is the involvement and availability of the lecturer as mediator throughout the process of completing the task.

Vygotsky (Moll, 1990) makes an important distinction between development and learning, as well as between an individual's *actual* and *potential* developmental level. The difference between these two levels is called the zone of proximal development. Underlying this theoretical construct is the belief that the level of actual development determines what type of task an individual is able to complete unassisted. The level of potential development, on the other hand, determines what type of task an individual can perform, initially in collaboration with another person. As individuals complete the task collaboratively, they begin internalising the knowledge and skills needed to complete the task independently. Potential development then becomes actual development through the zone of proximal development. Hedegaard (Moll, 1990) points out that if the task is too demanding for the individual in terms of his or her actual level of development, he or she will not internalise the processes necessary to complete the task independently. The learning task must, therefore, be *proximal* to the individual's actual developmental level.

Until an individual achieves control over a new function or conceptual system, the lecturer performs the function of 'scaffolding' the learning task to facilitate the learner's internalisation of the new knowledge (Foley, 1991). This is further supported by Polanyi (Lunsford, 1979), who argues that it is important to serve an apprenticeship in acquiring a skill or an art. By this he means that it is better to learn by doing *with* an expert than by studying or reading abstract principles. Langer and Applebee (1987) propose a view of instruction based on the work of

Vygotsky and Bruner. This view holds that tasks, rather than being used primarily to test and assess a student's learning, should provide an opportunity for the student to internalise new information and new strategies in a supportive or *scaffolded* environment. Once this new knowledge and skill has been internalised, the student will be able to complete a similar task independently.

Malloy *et al.* (1994) state that courses should incorporate the practical through the use of case studies, debates, and current issues from newspapers, magazines, or personal histories. Supporting this practical, contextual approach, Gifford (1994:312) recommends that issues of scientific misconduct be made a central part of scientific training, "perhaps integrated with discussion of scientific method". He presents an instructional programme in ethical issues, with the overall plan consisting of a series of modules, each focussing on a particular topic. Students are supplied with relevant reading material (case study, policy statements, and a set of discussion questions), and then meet with the course presenter to discuss the issues. He feels that it is important that students not only discuss seminal cases in research ethics, but that they are also sensitised to more common, less dramatic issues that they will encounter in their everyday lives. Beauchamp (1984) strongly advocates the case-study method, contending that it is a sound pedagogical technique with a distinguished history. Studying specific cases will assist students in real-life, rather than hypothetical circumstances. Further, case studies are most effective when they are used to draw out broader ethical principles and moral rules, focussing attention on the common elements in a variety of cases, and to the implicit problems of ethical theory to which they may point (Beauchamp, 1984). Case studies can employ the Socratic method of eliciting reflection, insight, and both theoretical and practical judgement. The Socratic method proceeds from professed ignorance to questions that eventuate in proposed principles or universal definitions. These are tested by hypotheses and modified into ethical theory.

Rosnow (1990) advocates role-play as a method of teaching professional ethics. Prior to any role-play exercise, his classes are provided with relevant reading material, including case studies and ethical codes, in this case the American Psychological Association's ethical recommendations. Following this, students are required to peruse current journals with the purpose of finding any article that may have violated one or more of the principles of the ethical construct presented, and to write a brief report on this. Oral reports and detailed discussion in class follow, and students then role-play the author of the study to defend criticisms. This serves the important purpose of offering an alternative perspective, and sensitising students to the view that there is more than one vantagepoint from which the ethical evaluation of a study can be made. Finally, the studies are evaluated on their ethical cost and theoretical or practical utility through a scoring procedure devised and described by Rosnow (1990). Scoring matrices are developed to illustrate the way that most Institutional Review Boards (IRBs) seemingly operate. The teaching methods outlined below draws from the above recommendations and methods, from personal experience and experimentation in teaching.

At the University of Zululand (South Africa), the author required the third year level HMS undergraduate students to complete a basic empirical research project under close supervision of a staff member. In Polanyi's words (Lunsford, 1979) the student is serving an apprenticeship under the guidance of a more experienced researcher. Students define a problem, conduct a literature review, collect relevant data, apply necessary computational/statistical techniques, and analyse and present the results. During this process the staff members identify possible problems. Staff supervision/guidance is stressed, as students have little practical experience in research

contexts, and the student/staff ratio does not exceed 2:1. This gives students the opportunity to apply the theoretical knowledge they have acquired in a real life situation. The students are able to internalise this theoretical knowledge through application.

This then serves as the preliminary background knowledge for the teaching of research ethics during the first year of graduate study when a comprehensive compulsory course in Research Methodology commences in the first semester. This serves to build on the practical knowledge acquired earlier and to expose students to more sophisticated research methods, in preparation for their research projects. A concurrent compulsory Philosophy course introduces students to analytic philosophy before focussing in some detail on ethical theory. Course content includes an introduction to Ethics and Applied Ethics (concentrating on deontologic and teleological ethical theories), competing philosophies on the value of research, the history of abuse in human experimentation, informed consent and the principles underlying it, ethical relativism, transcultural considerations in research, and the Institutional Review process.

As part of the process of sensitising students to moral decision-making in research contexts, students are provided with readings concerning seminal cases, for example, the Jewish Chronic Disease Hospital study, Willowbrook State School Study, Milgram's experiments, and Zimbardo's research. If students are comfortable with the method, discussions are personalised with students placed in role-play situations, either criticising or justifying the research according to competing or complementary facets of ethical theories.

A further part of the process involves a critical literature search for students. For example, a student will select a current volume of a refereed HMS journal and scan the articles for potential ethical irregularities. Students take to this task with enthusiasm, and some of the commonly identified problem areas include lack of informed consent, coercion or the improper use of a 'captive' population, possibility of harm to participants, lack of consideration of cultural factors, paternalism, no medical screening, and violations of confidentiality and privacy. This is followed by individual (student to lecturer) and then group evaluations of the ethical issues raised by the students' own research projects.

Ethical theories and principles are thus not introduced in an abstract, impersonal or purely academic manner. The principles are integrated with previously acquired background knowledge, theoretical interpretations, seminal cases, and current professional practices. As such the process is interactive, being theory- and practice-driven, combining reflection and application in a way that is meaningful to students who may reject a more abstract approach.

CONCLUSION

This paper contends that the morality of how researchers, treat other people is too important to be left to chance. Gifford (1994) states that the crucial element in addressing problems of scientific misconduct involves the education of scientists, rather than mechanisms of sanction after the fact. Malloy (1992) states that the role of ethics curricula is to combat ignorance and that without exposure to ethical theories students will remain ethically in the dark. The most important goal is to raise consciousness of the issues involved, encouraging young researchers to take certain questions seriously, and generate discussion about them (Gifford, 1994). Further, education will effectively communicate information about acceptable professional standards.

Given that Human Movement Studies programmes have become specialised in professional preparation, perhaps to the detriment of ethical conduct, ethics courses may provide the means to enable aspirant professionals in the field with the means to discover their own ethical consciousness (Malloy *et al.*, 1994). Teaching methods utilised to accomplish this should be designed on the premise that meaning is constructed through the interaction of new information and the existing background knowledge of the individual, and courses should be structured accordingly. Ethical principles should be integrated with previously acquired knowledge, theoretical interpretations, seminal cases and current professional practices, and applied through a process based on mediation and interaction with the aim of giving meaning to abstract concepts. In the words of Malloy (1992:30):

> ... we ought not to accept moral complacency in our organisations. One step towards idiographic and nomothetic "right" conduct is to provide for these developmental opportunities in our curriculum.

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