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RESEARCH ETHICS

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Ethics is in origin the art of recommending to others the sacrifices required for cooperation with oneself. Bertrand Russell

Introduction

The theories and arguments for ethical behavior in science and technology have developed over many centuries. The sources and foundations for our ethical and moral behavior are usually traced to religion, family, schools, employers, moral leaders, even ancient philosophers.

Most people learn ethical norms at home, at school, or in other social settings. Although most people acquire their sense of right and wrong during childhood, moral development occurs throughout life and human beings pass through different stages of growth as they mature. Ethical norms are so universal that we might regard them as simple common sense. On the other hand, if morality were nothing more than common sense, then why are there so many ethical disputes and issues in our society? One plausible explanation of these disagreements is that all people recognize some common ethical norms but different individuals interpret, apply, and balance these norms in different ways in the light of their own values and life experiences.

Definition of Terms

Norms are the rules or laws normally based on agreed-upon beliefs and values that members of a group follow to live in harmony. Beliefs are assumptions or convictions you hold as true about something, concept or person. Values or virtues are principles, standards, or qualities considered worthwhile; e.g., personal vs. professional values, shared vs. changing values etc. Morals are rules that define what is right and wrong.

Introduction to Ethics

Ethics is a system of moral principle or values that govern a person's or a group's behavior. Ethics is a broad concept: it is the science of human duty; the body of rules of duty drawn from this science; a particular system of principles and rules concerning duty, whether true or false; rules of practice in respect to a single class of human actions such as in political, social ethics or medical ethics. It may be

associated with a religion, a culture, a profession, or an activity such as scientific research. It describes an individual's relationships with, and responsibilities towards, other categories of people with whom he or she interacts. It may have legal standing or enforceability within an institution or professional body. Thus ethics is a process of examining moral standards and looking at how we should interpret and apply such standards in real world situations.

The difference between ethics and morals can seem somewhat arbitrary to many, but there is a basic, but subtle, difference. Morals define personal character, while ethics stress a social system in which those morals are applied. In other words, ethics point to standards or codes of behaviour expected by the group to which the individual belongs. This could be national ethics, social ethics, company ethics, professional ethics or even family ethics. So while a person's moral code is usually unchanging, the ethics he or she practices can be dependent on others.

According to the ancient Greek philosopher Socrates, ethics is the investigation of life. Ethics can also be defined in many ways: as a practical science that deals with the morality of human actions, a science of human acts that serves as reference to what is right or what is wrong, a kind of scientific inquiry into the morality principles, a way of studying human conduct from the stand point of what is called morality, a kind of science that lays down the principles of the right living. Almost all of the above mentioned meanings of ethics commonly used three terms in their definition namely; science, morality and human acts. 'Science' here means a philosophical science, a systematic study. 'Morality' means the quality of the right and the wrong in all human actions. 'Human acts' refer to acts done by humans with their knowledge or consent.

Together, these three terms; science, morality and human acts can be considered as the common basis that forms the definition of ethics. The definition of ethics may come in different perspectives but they all deal with a science, a morality and a human act.

Ethics in Research

Let us examine what ethics in research is about and why it is important. When most people think of ethics (or morals), they think of rules for distinguishing between right and wrong, such as the Golden Rule ("Do unto others as you would have them do unto you"), a code of professional conduct like the Hippocratic Oath ("First of all, do no harm"), or a wise saying, like the sayings of Confucius. This is the most common way of defining ethics: norms for conduct that distinguish between acceptable and unacceptable behaviour.

Most societies also have legal rules that govern behaviour, but ethical norms tend to be broader and more informal than laws. Most societies use laws to enforce widely accepted moral standards and ethical and legal rules use similar concepts; however, ethics and law are not the same. An action may be legal but unethical or illegal but ethical. We can also use ethical concepts and principles to criticize, evaluate, propose, or interpret laws. Indeed, in the last century, many social reformers urged citizens to disobey laws in order to protest what they regarded as immoral or unjust laws. Peaceful civil disobedience is an ethical way of expressing political viewpoints.

Many different disciplines, institutions, and professions have norms for behaviour that suit their particular aims and goals. These norms also help members of the discipline to coordinate their actions or activities and to establish the public's trust of the discipline. For instance, ethical norms govern conduct in medicine, law, engineering, and business. Ethical norms also serve the aims or goals of research and apply to people who conduct scientific research or other scholarly or creative activities. There is even a specialized discipline, research ethics, which studies these norms.

So, why is it important to adhere to ethical norms in research?

First, norms promote the aims of research, such as knowledge, truth, and avoidance of error. For example, prohibitions against fabricating, falsifying, or misrepresenting research data promote the truth and avoid error.

Second, since research often involves a great deal of cooperation and coordination among many different people in different disciplines and institutions, ethical standards promote the values that are essential to collaborative work, such as trust, accountability, mutual respect, and fairness. For example, many ethical norms in research, such as guidelines for authorship, copyright and patenting policies, data sharing policies, and confidentiality rules in peer review, are designed to protect intellectual property interests while encouraging collaboration. Most researchers want to receive credit for their contributions and do not want to have their ideas taken away or disclosed prematurely.

Third, many of the ethical norms help ensure that researchers can be held accountable to the public.

Fourth, ethical norms in research also help to build public support for research. People are more likely to fund research projects if they can trust the quality and integrity of research.

Finally, many of the norms of research promote a variety of other important moral and social values, such as social responsibility, human rights, animal welfare, compliance with the law, and health and safety. In the case of research on human and animal subjects, ethical issues are taken care of by their respective professional bodies. The subject of ethics in medical research is discussed in Chapter 3. Ethical lapses in research can significantly harm human and animal subjects, students, and the public. For example, a researcher who fabricates data in a clinical trial may harm or even kill patients; a researcher who fails to abide by regulations and guidelines relating to radiation or biological safety may harm his own health and safety or those of staff and students.

History had seen examples of conduct of unethical research; some of them are:

Tuskegee Experiment¹ (1932-1972): American researchers purposely withheld treatment for 400 African-American people with syphilis for the sole purpose of studying the long-term effects of the disease.

Willowbrook Study² (1956-1971): Children with developmental disabilities were deliberately infected with Hepatitis to examine the course of the disease and to test a potential immunization.

These are just two examples of conduct of unethical research. However, some of the responses to unethical research was the creation of Codes, Declarations and Acts: Nuremberg Code created as a result of cruel experiments the Nazis carried out on humans during World War II and the Declaration of Helsinki (World Medical Association).

Issues in Research Ethics

Authorship

The guidelines for the format of manuscripts submitted to general medical journals were established in 1978 by a small group of the editors known as the Vancouver Group. This is known as the Vancouver Protocol. The Vancouver group expanded and evolved into the International Committee of Medical Journal Editors (ICMJE), which produced several editions of the protocol with many issues covered and going beyond manuscript preparation. It is generally accepted by non-medical researchers. According to the Vancouver protocol, all persons designated as authors should qualify for authorship. Each author should have participated sufficiently in the work to take public responsibility for the content. Authorship should be decided based only on substantial contributions to 1) conception and design, or analysis and interpretation of data, and to 2) drafting the article or revising it critically for important intellectual content, and on 3) final approval of the version to be

published. Conditions 1, 2, and 3 must all be met. Participation solely in securing funding or the collection of data does not justify authorship. General supervision of the research group is not sufficient for authorship. Any part of an article critical to its main conclusions must be the responsibility of at least one author. Editors may ask authors to describe what each contributed; this information may be published.

Research Misconduct

Research misconduct means fabrication, falsification or plagiarism (FFP) in proposing, performing, or reviewing research, or in reporting research results. Fabrication is making up data or results and recording or reporting them. Falsification is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record. Plagiarism is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit. Research misconduct does not include honest error or differences of opinion.

Results of research studies should be reported in an honest, accurate manner. Researchers should not "massage" data to fit their hypotheses. They cannot make up or report false results; they must report what they find, even if the data does not support their initial hypotheses. They should ensure that data is being collected consistently (by checking the work of research assistants). They should give proper credit by way of authorship to those who have earned it.

Plagiarism

Plagiarism comes from the Latin word meaning "to kidnap". Examples of plagiarism are copying someone else's words without proper citation, stealing someone else's ideas and stealing someone else's intellectual property. *Plagiarism is presenting someone else's work as if it were your own, whether you mean to or not.* 'Someone else's work' means anything that is not your own idea. Even if it is presented in your own style, you must still acknowledge your sources fully and appropriately. This includes material from books, journals or any other printed source, the work of other students or staff, information from the internet, software programs and other electronic material, designs and ideas and the organization or structuring of any such material.

Plagiarism undermines academic integrity simply because it is a form of lying, stealing and mistreating others; it involves stealing other people's intellectual property and lying about whose work it is. To plagiarize means to take someone else's work, ideas or words and present them as your own, to use (another's production) without giving credit to the source, to commit literary theft and

to present, as new and original, an idea or product derived from an existing source. In other words, plagiarism is an act of fraud; it is considered academic dishonesty, similar to copying at an exam. One should never copy directly from a source into your report or dissertation using the author's own language, except when you are quoting the author. Instead rewrite it in your own words (paraphrase), giving your understanding of what the author said. Always give the reference. To avoid plagiarism, start the sentence as:

According to Smith *et al.*, Baker *et al.* have shown that

If you use the author's language, put it in quotes and give the reference, as in Frick (1991) believes that "... the first technology was the primitive modes of communication used by prehistoric people before the development of spoken language" (p. 10).

Reference: Frick, T. (1991). *Restructuring education through technology*. Bloomington, in: Phi Delta Kappa Educational Foundation.

Most cases of plagiarism can be avoided by citing the sources and giving credit to others when you use their ideas, opinions, or theories, use quotations from another person's spoken or written word and even paraphrase another person's spoken or written word. Acknowledge those who contributed to the research, but cannot be listed as authors. Cite the work of others on which your research is based as references. Common knowledge does not need to be cited.

According to the International Committee of Medical Journal Editors, "Redundant or duplicate publication is publication of a paper which overlaps significantly with one already published." This is considered self-plagiarism. Submission of a manuscript to a journal with a different title and minor changes to the text, when it has already been published elsewhere, may violate copyright laws, and is considered unethical. When submitting such a manuscript, a statement must be made that it has been published elsewhere.

Conflicts of Interest

A conflict of interest arises when a researcher's obligations to the research project and its stakeholders conflicts with his personal interests or other professional obligations. Personal interests include financial interests and interests of immediate family members. Researchers should also balance potentially conflicting interests of different stakeholders in a research project.

In many countries, both institutions carrying out research and funding agencies have procedures to avoid conflicts of interest. In Sri Lanka, this should be a function of the Ethics Review Committees. There should be a written and enforceable administrative process to identify, manage, and reduce or eliminate conflicts of interest and financial conflicts of interest, in particular.

To avoid conflicts of interest, the researcher must disclose all major financial interests, declare possible conflicts of interest, modify the research plan to eliminate sources of conflict, break off relationships (or divestiture of financial interests) that lead to the conflict of interest and be disqualified (or self-disqualification) from participation in the research project. Above all, research must be monitored by an independent panel of reviewers.

Data Management

The data must be collected in an ethical way causing no undue harm, stress or injury to any person. It must be true- not manipulated, omitted or altered in any way. Ownership of the data must be established whether it is the principal investigator, institution, or client. This is especially important when intellectual property rights are involved. All information collected in a research project should remain confidential and secure; privacy of participants in research must be ensured. Data, whether electronically derived, paper or samples must be stored for a considerable period of time, granting access only to those who own it.

Data sharing is very important in science, especially among academics as it promotes open inquiry and new research and encourages diversity of analysis and alternative hypotheses and exploration of topics not foreseen by the original researchers. However, data must be shared against the backdrop of Intellectual Property Rights (IPR) and ownership issues and data sensitivity.

Peer Review

In peer review, confidentiality must be maintained; the names of authors should not be disclosed to reviewers and *vice versa*. The responsibilities of the reviewers (and editors) are to give honest, objective opinions, not to publicly disclose information submitted in the article, or use such information for personal gain and not allow subjective considerations, e.g., give a poor review to penalize a competitor. The reviewers should disqualify themselves if there are serious conflicts of interest. Finally the editor must decide what should be published. It is unethical to bypass the peer review process.

Codes and Policies for Research Ethics

Given the importance of ethics for the conduct of research, many different professional and scientific bodies such as the Sri Lanka Association for the Advancement of Science (SLAAS), Institute of Chemistry, Ceylon (ICChemC) and Institution of Engineers of Sri Lanka (IESL) and universities have adopted specific codes, rules, and policies relating to research ethics. Codes of ethics drafted by them are usually binding on members. The National Science Foundation (NSF) has ethics and rules for funded researchers. The National Science and Technology Commission (NASTEC) has published a monograph, titled 'Guidebook on Research Ethics'. In many professional degrees, such as medical and nursing degrees, ethics have been introduced into the curricula. In some undergraduate study programmes, a course on ethics has been included as an elective.

There are many other activities that are regarded by most researchers as unethical. These are called "other deviations" from acceptable research practices. Given below are a range of commissions and omissions, which are unethical in spirit.

- Not informing a collaborator of your intent to file a patent in order to make sure that you are the sole inventor
- Not being honest when giving details in a grant application in order to convince reviewers that your project will make a significant contribution to the field
- Giving the same research project to two graduate students in order to see who can do it the fastest
- Making significant deviations from the research protocol approved by your institution's Institutional Review Board (IRB) for research on human subjects without informing the Board
- Not reporting an adverse event in a human research experiment
- Deliberately overestimating the clinical significance of a new drug in order to obtain economic benefits

References and Further Reading

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