Chapter 4
Embedding Ethical Principles in the Information Science Research Process

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ABSTRACT
The chapter focuses on important aspects of ethics that will guide an information science researcher to consider ethics as an integral part of a successful research project. The Nuremberg Code, Belmont Report, and Declaration of Helsinki informed ethical principles and practices that are seen as internationally acceptable. Since the inception of the National Health Act 61 of 2003 in South Africa, which informs research practices related to all disciplines, ethics has become a mandatory part of the research process. However, applying ethical principles during research may, at times, be fraught with difficulties. Cultural diversity, transformation, and technological advancements expand the complexity of ethical issues that researchers should consider. It is important for prospective researchers to gain knowledge and understanding of the context of ethics and its application throughout the research process. Researchers are required to adhere to strict ethical principles related to respect, consent, beneficence, non-maleficence, confidentiality, and anonymity.

INTRODUCTION
In a research project involving the San people of Southern Africa, valuable information pertaining to the Hoodia plant as an appetite suppressant was shared with researchers. Findings from this research were used in the registration of a patent, without any attempt to obtain informed consent from the participants involved in the research. Traditional knowledge from the San people was used to profit others; leading to a direct infringement of the human and intellectual property rights of this indigenous group (Chennells, 2007). A lack of ethical application in this research caused the marginalisation of this indigenous community (Dan, Mchombu, & Mosimane, 2010, p. 129) and the violation of article 27.2 of the Universal Declaration of Human Rights of 1948, that emphasises the protection of moral and material interests.

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resulting from, for example, any scientific production (UNESCO, 1948). This is but one example of unethical practices in research, which has brought the application of ethics in research to the fore. Even though various codes and practices of ethics exist, contentious research puts the application of these codes and practices in jeopardy and requires of researchers to be cognisant of the application of ethics during the research process (Daniels, 2008, p. 123).

As a major branch of philosophy, ethics is a vital component of research and provides guidance to researchers on how to conduct respectful research in different cultural and philosophical contexts (Liamputtong, 2008, p. 3). Mostak and Hoq (2012, p. 39) sees ethics as the systematic process of conducting research that can be defended on the principles of right and wrong. However, since various interpretations of right and wrong exist, Lategan (2013, p. 151) and Munigal (2018, p. 70) state that ethics must be linked to the values that a researcher applies throughout the research process, especially related to fairness, honesty, responsibility and care. Knowledge of ethics is important for researchers to make sound moral decisions on how to collect and use data to prevent misconduct and improper actions (Creswell & Creswell, 2018, p. 88). Johanson (2013, p. 444) explains that consideration of ethics is important as the act of enquiring may bring forth many challenges in terms of the collection and use of data. Because the aim of research is to question the status quo by probing for discoveries through alternative ways of thinking about problems, issues such as transparency, openness, accountability, disclosure of information and respect must be considered (Daniels, 2008, p. 123). These issues become even more relevant when considering research that relates to cultural diversity, transformation and technological advancements. To ensure consistency in the application of these values, Louw (2014, p. 263) recommends that values be linked to the moral or professional codes of conduct pertaining to a discipline that sets standards for the attitudes and behaviour of researchers. Considering codes of ethics in social sciences and humanities research is important, since the emphasis is on collecting data involving the use of humans or human documentation.

When conducting research in the Information Science context, Ndwandwe, Ocholla and Dube (2009, p. 78) purport that knowledge of ethics is imperative to conduct research that will produce reliable findings, whilst maintaining a confidential relationship with clients. Information professional researchers should be cognisant of ethical principles such as respect, trust, privacy and justice in relation to research pertaining to users, information sources, information services, the profession and society (UK Essay, n.d.). Munigal (2018, p. 70) explains that knowledge of ethics, ethical theories, principles and practices is necessary as the context of what constitutes ethical behaviour occupies a ‘grey-zone’, where clear-cut applications of principles may not always exist. Knowledge of ethics when conducting Information Science research is therefore imperative to guide researchers in conveying moral integrity and applying consistent values in service to the public (Karac-Kakabadse, Kakabadse, & Kouzmin, 2002). This relates to the key research issue that the chapter focuses on, namely providing foundational information that informs ethical considerations in Information Science Research and the application of these considerations to the entire research process.

**METHODOLOGICAL CONSTRUCT**

According to Mostak and Hoq (2012, p. 39) it is important to take cognisance of issues pertaining to ethical considerations in general, and particularly related to Information Science research, since Information Science researchers want to perform their research in an ethical manner. Ethical issues may arise