

## Chapter 4

# Technology Assessment and Technoethics Inquiry

### INTRODUCTION

*You cannot manipulate the world as if it were a chunk of clay and at the same time disclaim all responsibility for what you do or refuse to do, particularly since your skills are needed to repair whatever damages you may have done or at least to forestall future such damages - Mario Bunge, 197, p. 96.*

Philosophical and historical conceptualizations of technology and ethics discussed in the first three chapters of this book helped to situate the reader within the general context of technoethical scholarship as it pertains to a knowledge society. This is important in providing a theoretical grounding for the field of Technoethics. How-

DOI: 10.4018/978-1-60566-952-6.ch004

ever, the field of Technoethics also has an applied research and practice orientation for guiding technoethical inquiry and its application to technology assessment and technology design. As such it offers practical tools for use within the technology oriented professions (e.g., engineering, computer science, medicine, technology studies).

Scientific and technological advances in the 21<sup>st</sup> century embedded within many facets of society and the lives of individuals are complex, far reaching, and context specific. These advances have the power to greatly improve life on this planet or destroy it forever. Any attempt to provide a theoretical framing for technological inquiry must be able to fit the complexity and scope of current (and future) technological developments. First, technological developments are complex with many stages or phases to take into consideration which map onto their design, development, implementation, and evaluation in society. Social and ethical considerations need to inform a complex array of processes including, reviewing background research and knowledge relevant to technological development, analyzing current research on technological design and development along with relevant codes and policies governing its use, assessing the potential positive and negative contributions along with risks, and evaluating all knowledge gathered in the technological inquiry to guide decision-making. Second, technological development is also broad in scope affecting diverse areas of society with and those within it. New technologies are emerging in communications, transportation, medicine, health, engineering, nutrition, entertainment, and many other areas. Third, technological developments are unique affecting diverse areas of society with different social and ethical concerns arising for those within it. Ethical debates about new industrial technologies may focus on environmental effects with little concern over privacy, while debates around new information and communication technologies may highlight security and privacy issues while other aspects are less relevant. For these reasons, a systems approach to technoethical inquiry is chosen.

Central to technoethical inquiry is the concept of a system (a configuration of parts connected together through by a web of relationships). Technoethics pioneer, Mario Bunge, viewed society as a system of interrelated individuals sharing an environment which could be formalized. Bunge (1979) stated, “A society X is representable as an ordered triple (composition of X, environment of X, components of X), where the structure of X is the collection of relations (in particular connections among components of X (p. 13). Although system complexity (e.g., number of sub-system components, system properties, etc.) varies with the system, the basic ontology of society (and its sub-systems) under s systems view is as follows:

1. A society is neither a mere aggregate of individuals nor a supra-individual entity: it is a system of interconnected individuals.

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