Chapter 3
The Cognitive Informatics Approach towards Wisdom

INTRODUCTION

The purpose of this study is to analyze the state of the art of sciences in the context of researching wisdom. Some recommendations will be offered for the further pursuit of wisdom among people and machines.

Spectacular progress in technology, such as the development of high-speed computer chips that are faster than human brains, suggests that we will face free-thinking machines sooner rather than later, and prompts thoughts of evolution in the post-human civilization. Hence, numerous questions need to be answered, including:

1. Are mind science, artificial intelligence, and cognitive informatics really ready to develop thinking machines?
2. Are thinking machines really a "threat" for humans?
3. Do we need thinking machines to take over our civilizations?
4. Why do we not apply Asimov's laws for robotics?
5. What is the role of thinking machines in civilizations?
6. What is the role of wisdom in answering these questions?
7. Is our wisdom at the level of answering these questions?

DOI: 10.4018/978-1-60960-168-3.ch003

Answers to these questions are not yet fully available because further research is necessary, which is indicated in this study. Furthermore, we need to differentiate science fiction and journalistic publications from the reality of the advancement of developing intelligence and wisdom among not only thinking machines, but among humans as well.

THE INFORMATICS APPROACH TOWARDS WISDOM

Cognitive Informatics vs. Computer Science and Information Technology

Informatics in Europe is analogous to information technology (IT) or information management (IM) in the United States. Informatics was introduced into the public language in France in the 1960s as *l'informatique*, reflecting the combination of information and automation (*INFORmation* + *autoMATIQUE*). In 1971, *informatyka* was introduced on the same scale in Poland (Targowski, 1971). Around the same time, this term was introduced into public language in Italy, Spain, Romania, Portugal, and Netherlands.

Some authors mistakenly identify informatics as computer science. Nothing could be more wrong. Those who introduced informatics sought to emphasize that it was not computer science in which the computer was the key object of the study. Rather, *information* is the key object of study, particularly at the level of computer-based information applications. In the meantime, this term was accepted in the U.S. for very specific computer applications such as medical informatics, which is the study of systems at the level of physicians' diagnostics and treatments. Medical informatics does not include Health Information Systems (HIS) that support the management and operations of hospitals, clinics, and insurance agencies.

Information is at the heart of society, and its use profoundly affects present and future generations (Diebold, 1969). Information is poised to replace matter as the primary stuff of the universe; it will provide a new basic framework for describing and predicting reality in the 21st century (von Baeyer, 2004). The term informatics is probably better suited than computer science or IT to evaluate the great role of information in civilization. Many books on "man and the computer" have been published since the role of computerized information was widely established.

In general, one can state that informatics in the U.S. touches on the study of more complex systems than data processing or information processing, such as Management Information Systems (MIS). Despite the relative simplicity of early computer applications, the computer and IT have inspired humans tremendously, particularly at the level of science fiction. These kinds of books became more inventive since the machine could do what men could not. If science fiction was a dream, business and engineering computer applications, cybernetics, and robotics became reality. On the other hand, in the 20th century, information systems evolved into knowledge-based systems that applied data mining and produced rules (theoretical knowledge about a given domain of application) and eventually wisdom (if they could be programmed correctly). The three last disciplines were and are particularly concerned with wisdom.

The study of wisdom as *wisdom science* requires an interdisciplinary approach which is represented by an emerging discipline called *cognitive informatics* (CI), which studies the natural intelligence and internal information processing mechanisms of the brain, as well as the processes involved in perception and cognition. CI provides a coherent combination of fundamental theories and contemporary mathematics, which forms the foundation for most information- and knowledge-based science and engineering disciplines, such as computer science, cognitive science, neuropsychology, systems science, cybernetics, software