Introduction – Computing and Philosophy

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A common perception of philosophy is that, at best, it is vague, waffly and other-worldly, with little if any relationship to the real world. Computing, on the other hand, is seen as precise, rigorous and particularly useful. Thus, when mentioning that a conference on computing and philosophy was being planned, a not uncommon reaction was one of surprise, amusement or puzzlement. How is it possible to combine something often thought to be so vague and useless with something so precise and useful? The answer of course is that philosophers and computer scientists are often interested in similar problems, for example the nature of thinking and computation, and philosophy at least in the analytic tradition, is based just as much on logic as is computer science. And in addition, many philosophers are interested in how computers can assist in both the teaching of philosophy, and in their research. Philosophy has, as it is often said, taken a computational turn.

Computing and Philosophy (CAP) conferences have been held at Carnegie Mellon University annually since 1986, and more recently on the West Coast of the US. In 2003 they were for the first time also held in the UK and in Australia. According to Robert Cavalier, one of the CAP founders, “Computing and Philosophy Conferences have been a central meeting place for all those interested in the computational turn that is taking place within the filed of Philosophy.” A new association has recently been established, The International Association for Computing and Philosophy (IACAP), with a number of Divisions, including the Asia-Pacific Division (AP-CAP), and part of its mission is to promote scholarly dialogue on all aspects of the computational turn in Philosophy and the use of computers in the service of philosophy. The IACAP website (www.iacap.org) lists the following as topics covered at past conferences

- Culture and Society
- Distance Education and Electronic Pedagogy
- Electronic Publishing
- Logic and Logic Software
- Metaphysics (Distributed Processing, Emergent Properties, Formal Ontology, Network Structures, etc.)
- Online Resources for Philosophy
- Philosophy of Information and Information Technology
- Robotics
- Virtual Reality

Many of these topics were also covered at the CAP conference at ANU in 2003, and this is reflected in this volume. It must be mentioned too that these conferences attract not only philosophers interested in computers and computation, but also computer scientists interested in philosophical aspects of their work, particularly the philosophical underpinnings of computer science. Many computer scientists, especially those interested in artificial intelligence, know that philosophy has a role to play in helping them to understand their discipline.

The papers collected here cover a wide range of topics, including technical discussions of the nature of computation, cyborgs and computers as humans, and social and ethical issues of computing. In the first paper, Floridi argues for structural realism, that is, that the world is ultimately composed of informational objects dynamically interacting with each other, and that these objects can best be understood using the methodology of Object Oriented Programming. Levy, in the next contribution, examines the concept of a cyborg, and argues that there is nothing about which we should be too concerned, but neither is there anything about which we should get too excited. Cyborgization is largely just an extension of what humans have always been doing.

The next few papers are all concerned in some way with computation. Taylor and Burgess discuss the symbol grounding problem (the problem of how symbols get meaning, or how they are related to what they are about), which seems to show that computation alone can never account for cognition. Brown too, considers the issue of whether cognition can be just computation, and does this through an examination of the idea of a combinatorial-state automaton, and the idea that he finds defective. Hiroyuki Miyoshi proposes a metaphysical theory to help
understand computation. This theory is based on phenomenals and therapeutic understanding, and on Hume-Bergson Forms. A notion of phenomenal computing, that is a system consisting of both the computer and the environment in which the computation executes, is developed by Yukio-Pegio Gunji and Moto Kamiura. Price’s paper, while not a technical discussion of computability, is still concerned with the notion of computability. He argues that certain things, for example, propositional content, are not computable.

The next group of papers all relate to software. Legal reasoning is the subject of Gray’s paper. In it she describes an expert system that she has developed for making legal decisions, and discusses various conceptual issues underlying the development. Quinn addresses the ethical challenges that advancements in computing technology is creating in relation to photojournalism. The paper outlines some photojournalistic practices affected by the technology along with some ethical guidelines that address these practices. Khoury and Simoff are concerned with the issue of interface design, and particularly with the use of metaphor. They argue that the limitations of concrete metaphors can be overcome with the use of elastic metaphors. Finally, Lenarcic and Mousett apply a postmodernist perspective to open source software. They argue that this perspective removes some of the shackles from the way that we typically view various practices and methodologies.

The final three papers discuss the digital divide. Fallis, in the first of these, is concerned with identifying policies that address the digital divide. He argues that a digital divide policy should aim at distributing knowledge among the members of society “equitably” rather than “equally” because doing so may lead to information haves-nots having as much knowledge as possible. To better understand the notion of “digital divide”, Hongladarom, in the next paper, provides us with a philosophical account about it from a number of perspectives, including social, educational and non-western cultural philosophy. Recognising the role cultural context may play in shedding light on the digital divide, he invites non-western philosophers to contribute to this area. Kitiyadisai, in the third paper, just does that when she provides an account about the digital divide from a Buddhist perspective. She notes that different groups of people encounter different types of problems depending on their social context. Thus, bridging the digital divide for groups of people who suffer, for example, from malnutrition or disease is not relevant to their suffering.