

# Computer Ethics 2013: From Policy Vacuum to Slow Tech

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## **Computer ethics and policy vacuum**

At the dawn of computer age the questions about social and ethical issues caused by the introduction of computers into the society started to arise. In particular Wiener, one of the "founders" of the new era (Turing, Von Neumann, Wiener, and Shannon), introduced the debate about the impact of computers on workers and the related risks of unemployment (Wiener, 1950). Also Parker, one of the leading computer security experts in the 1960s, considered the effects of computers on people, when in his famous article (probably the first publication with "ethics" and "computer" in the title) wrote: "*It seemed that when people entered the computer center they left their ethics at the door*" (Parker, 1968). Indeed the reflection about information technologies was always "after", the technology evolution was never questioned "before". It was Weizenbaum, a professor at MIT, that, for the first time, tried to set some principles for steering the correct application of computers. In his "Moral Laws of the Information Society" he wrote: *1. Human functions that require judgement, respect, understanding, caring and love ought not to be substituted by computers; 2. Applications which have irreversible and not entirely foreseeable side effects, that do not meet pressing human needs, ought not to be undertaken without very careful forethought; 3. IT is a matter of human choice and responsibility.* (Weizenbaum, 1976).

In general, the evolutionary process of technology was considered as a fact, and the role of society as a simple receiver. Since the speed of technology is order of magnitude greater than the speed of society to cope with these "revolutions", then we have a "gap". In the 1980s this is reflected in the first definition of Computer Ethics proposed by Maner: "Computers generate wholly new ethics problems that would not have existed if computers had not been invented ... there should be a new branch of applied ethics ... decided to name the proposed new field Computer Ethics ... a new field that studies ethical problems aggravated, transformed or created by computer technology" (Maner, 1980). It is with Moore that this gap between technology and society enters even in the "core mission" of Computer Ethics: "A typical problem in Computer Ethics arises because there is a *policy vacuum* about how computer technology should be used. Computers provide us with new capabilities and these in turn give us new choices for action. Often, either no policies for conduct in these situations

exist or existing policies seem inadequate. A central task of Computer Ethics is to determine what we should do in such cases, that is, formulate policies to guide our actions ..." (Moor, 1985). In this policy vacuum era, nobody questioned the technology in itself: technology changes rapidly our scenarios and we have no policies in these new situations. Technology is considered as "neutral" and not the result of complex interactions with society. The detail that technology is the result of human choices is not on stage.

### Towards Slow Tech

In the second half of the 1980s this assumption about "neutrality" is deeply questioned. For example Deborah Johnson wrote: "*Recognition that technology is not just artifacts, but rather artifacts embedded in social practices and infused with social meaning, is essential to understanding the connection between Ethics and IT*" (Johnson, 1985). If computer systems and information and communication technologies are "socio-technical systems", then we have the opportunity of steering them in some way, and not passively accepting their (negative) impacts on society.

This reflection was at the core of the debate between researchers, teachers, computer scientists, and computer professionals about the role of Universities in preparing the next generations of computer experts. This was also the reason for the establishment of the IEEE/ACM joint committee for defining the new Computing Curricula. As a result, for the first time, Computer Ethics was included among the required subjects for Computer Science (Turner, 1991). Also in Europe this debate started and there were several attempts for embedding ethics in ICT curricula (Duquenoy et al., 2010).

A clear definition of the new role (and responsibilities) of computer professionals in the Information Society is due to Lessig. With his model based on four poles (market, law, education, and architecture) for the governance of complex systems, and in particular with his dazzling "*code is law*", he made a fundamental contribution to the recognition of the basic role of computer experts in designing the socio-technical systems of the future (Lessig, 1999). This means that, since we have a responsibility in designing computer systems, then we can (or should) steer them in the right direction. But what is the right direction? Floridi proposes a contribution with his analogy between *suffering* in the biosphere and *entropy* in the Infosphere. He defines a form of ethics that he calls Information Ethics: "... *What is good for an information entity and the infosphere in general? This is the ethical question asked by Information Ethics*" (Floridi, 1999).

In this direction, we can start investigating the *good side of ICT*. We can start defining a *good ICT* as a collection of systems and processes that should serve people and society because, according to De George, "*Computers and information technology should help and serve people and society. Where they do not, they should not be passively accepted*" (De George, 2003). We can start providing guidelines for designing systems that are "hospitable", human-aware ICT that can enhance the well-being and well-living of persons and communities, respect the principles of universal access, network neutrality, and 'habeas data' (privacy-by-design). Systems that show high reliability in life-

critical applications, preserve human identity and integrity, and where human-computer interactions are designed taking into account human limits. Participatory design and technology assessments become mandatory for minimising the risks related to complex software systems (Rogerson and Gotterbarn, 1998; Gotterbarn, 1992).

In XXI century we should also take into account the limits of the planet, so we can introduce the definition of a *clean ICT*, bearing in mind the whole ICT lifecycle. We have to recognize that high tech generates toxic hazards throughout its entire lifecycle (design, production, consumption and disposal). So we should consider the environmental impact of materials involved, chip manufacturing processes, power consumption of data centres and devices, ICT applications, e-Waste management and e-recycling. We can start investigating the possibilities of an ICT sustainable-by-design.

We should also realise that there are many stakeholders involved throughout the whole ICT value chain who have very different interests, and that there should be a balance among the interests of all the stakeholders (including the workers and the planet). We can call this a *fair ICT*: an ICT that involves the full set of stakeholders, their lives, their dignity, and their rights.

We propose a "bridge" with the Italian (and now worldwide) Slow Food movement that has its roots in the three principles: *good*, *clean*, and *fair* related to food (Petrini, 2011). We propose to steer the digital revolution towards a new kind of ICT, by designing and developing technologies that are good, clean, and fair. An ICT that is human-centred, and that takes into account both the limits of the planet and those of human beings. We propose to call it *Slow Tech: a good, clean and fair ICT* (Patrignani and Whitehouse, 2013). We propose to develop the principles of Slow Tech in research and teaching activities in Universities by including Computer Ethics in Computer Science and Engineering curricula, and to embed them into a *Code of Ethics* for computer professionals.

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