An Urgent Educational Challenge for Christians

The CSP study program I proposed want to be an initial response to the tremendous educational challenge with which Christians – and more generally all believers and good will people – are facing today in front of the new computer and information technologies. They are destined to change ever more deeply than actually do, our society, our economy, and our culture.

1. The Ethical Challenge of the New Automation Technologies. At the moment, the edge technologies in Information and Communication Technology (ICT) concern the research & development (R&D) of advanced software for the simulation of the human semantic, and intentional behavior in the artificial intelligence (AI) systems. These technologies embrace (the examples I give are limited, and for only introductory aims):

   a. The ICT realm (i.e., the so-called WEB-3 or “semantic web” R&D program), e.g., the development of largely automatized and individualized semantic databases in whichever realm of ICT; of largely automatized and individualized user friendly man-machine interfaces; of largely automatized and individualized distance learning programs for continuous education; of largely automatized and individualized telemedicine tools; of largely automatized and individualized e-commerce strategies and tools; of largely automatized and individualized administration, information, assistance (think at call-centers), and e-government services, directly and automatically interacting in a human-like fashion, with the individuals, the citizens, and/or with the companies; etc.

   b. The automatic control systems (ACS) realm, practically in whichever component of the private and public life of our present and future societies. At the public level, ever larger parts of the control of power, flight, rail, transportation and communication networks will be managed by completely automatic systems. At the private level, ever larger parts of the financial market transactions on the web are, and will be managed by automatic systems (actually the estimations are about 30% of the transactions); it is rapidly growing the usage of drones both for observation and transportation aims, either in the military realm (where they are
used also as unmanned weapons), or in the civilian realm; the future massive usage of self-driving cars in our cities and streets; the usage of humanoid robots, not only as soldiers in the battlefields for military aims, but also for civilian aims. E.g., in particularly risky rescue missions, or for the continuous 24/7 medical care/assistance of long-standing patients as humanoid nurses, integrating the work of the human ones, etc.

The ethical challenges of this nearby “digital tsunami” on our societies and especially on the job market, as the *Economist* newspaper recently defined it, are essentially two:

a. The more obvious concerns the consequences for the persons and for our societies of this revolution, (think only at the consequences for the job market), as far as it is destined to embrace all the components of our private and public lives, as we tried to exemplify for you.

b. The less obvious, but probably the most important and decisive one, concerns the necessity of implementing in the human-like, autonomous behavior of ICT and ACS devices ethical principles/skills, governing their choices, given that – before all for the amazing velocity of their execution – they escape any possibility of human meta-control. These programs for the ethical behavior simulation, are already being implemented in automatic systems – at least, for very simple tasks. Their necessity is, however, growing, as far as these machines/systems will enter massively into our lives (think only at the necessity of implementing the military ethics in robotized soldiers/drones, of implementing financial ethics in automatic traders, of implementing human ethics in self-driving cars, humanoid nurses, humanoid teachers for automatized continuous learning programs, etc.).

All this emphasizes the strict relationship actually existing between the so-called formal philosophy (formal ethics, formal ontology, formal epistemology, etc.) and the theoretical computer science, that is at the root of the actual revolution. The scientific possibility of simulating artificially the intentional human behavior (semantic intelligence and ethical behavior included), depends directly on the development of the newborn discipline of the philosophical logic (alethic logic, epistemic logic, deontic logic, etc.), by which it is possible to formalize (i.e., to translate into a universal (also for the machines) symbolic and axiomatic language) the philosophical sciences/doctrines (ontology, ethics, epistemology…) in the XXI cent., just as it was possible during the XX cent., to formalize by the mathematical logic the mathematical (pure and applied) sciences/doctrines. A mathematical formalization that is at the basis of the actual globalization of the science and of the economy, destined to be integrated, through the philosophy formalization, by a globalization of the humanities – philosophies and religions included. It is evident the strategic role of Catholic Church (remember that “catholic” is synonymous of “universal” and hence “global”) in this scenario. Anyway, Catholics must be present and possibly leaders in this field, given that which type of ethics implementing in the autonomous systems depends directly on the presence in the scientific and technological scenarios of
engineers and philosophers trained in this multidisciplinary realm, and in this multidisciplinary R&D collaborations.

2. **The Educational Challenge: the Philosophy Study Program in our Catholic Colleges.** The ethical/technological challenge before illustrated gives Catholic Church the Providential chance of introducing in the study program of our Catholic Colleges the teaching of philosophy in the very advanced form, already established in some other universities in the world, of a **Computer Science & Philosophy (CSP) Study Program (BD, MD, PhD)**, following the example of the Oxford University in UK that first introduced in the world this study program (see [http://www.ox.ac.uk/admissions/undergraduate/courses-listing/computer-science-and-philosophy](http://www.ox.ac.uk/admissions/undergraduate/courses-listing/computer-science-and-philosophy)) since 2012. The Oxford University leadership in the world is confirmed by the presence in the same university of the most advanced Study Centre in this field, **The Oxford Internet Institute (OII)** (see: [http://www.oii.ox.ac.uk/people/faculty/](http://www.oii.ox.ac.uk/people/faculty/)) of which Research Director is prof. Luciano Floridi, the world leader in the newborn field of computer ethics and teacher of “Philosophy and Ethics of Information” (see: [http://www.oii.ox.ac.uk/people/floridi/](http://www.oii.ox.ac.uk/people/floridi/)). Moreover, Oxford is leader also in another field, strictly related with the computer ethics R&D field, the **Neuroethics** field, investigating the very delicate relationship in humans, between brain and ethical behavior, in the context of the **cognitive neuroscience** research field (see: [http://www.neuroethics.ox.ac.uk/](http://www.neuroethics.ox.ac.uk/)). Finally, the formalization of different ethics and ontologies, is effectively a very effective tool for developing **the interdisciplinary** (between sciences and humanities), **and the intercultural dialogue** (among different religions and traditions) on a solid basis, and in a problem-solving oriented way.