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We call our society “the information society” because of the pivotal role played by information-intensive services. As a social structure, it has been made possible only by ICT (information and communication technologies). It has already posed fundamental ethical problems, whose complexity and global dimensions are rapidly evolving.

What is the best strategy to construct an information society that is ethically sound? Let me anticipate my conclusion. The task is to formulate an information ethics that can treat the world of data, information, knowledge and communication as a new environment, the infosphere. This information ethics must be able to solve the new ethical challenges arising in the new environment on the basis of the fundamental principles of respect for information, its conservation and valorisation. It must be the environmental ethics for the information environment.

The digital divide (DD) is the source of most of the ethical problems emerging from the evolution of the information society. It is the combination of a vertical gap and a horizontal gap. The vertical gap separates ours from past generations. In less than a century, we have moved from a state of submission to nature, through a state of power of potential total destruction, to the present state, in which we have the means and tools to engineer entire new realities, tailor them to our needs and invent the future. For the first time in history, we are responsible for the very existence of whole new environments. Our technological power is immense. It is also growing relentlessly. It is already so vast to have

overcome the barrier between the natural and the artificial. Our moral responsibilities towards the world and future generations are therefore equally enormous.

Unfortunately, technological power and moral responsibilities are not necessarily followed by ethical intelligence and wisdom. We are still like children, light-heartedly and dangerously toying with a marvellous universe. We may have almost demiurgic power over it, but we can rely only on our fallible good wills to guide us in our constructions.

The vertical gap signals the end of modernity. The project of modernity was the full control and mastery over reality understood as the physical environment. The information age builds on the modern project, but its essence is no longer just the shaping of the physical world. Rather, it is the creation and construction of alternative, non-natural environments that replace or underpin it. The mechanical mind dealt with nature and tried to control and modify it, the informational mind builds its own world and hence, in dealing with it, it really deals with its own artefacts.

The DD, of course, is also a new horizontal gap within humanity, between insiders and outsiders. The infosphere is not a geographical, political, social, or linguistic space. The borders of the infosphere cut across North and South, East and West, industrialised and developing countries, political systems and religious traditions, younger and older generations, even members of the same family. It seems more accurate to say that the DD occurs between individuals rather than countries or whole societies, between the computer literate and the computer illiterate (e-analphabetism), between the information rich and the information poor, whatever their nationality and neighbourhood.

The economic and socio-cultural roots of the DD problem are so dramatic and indisputable that nobody can underestimate them. Two billion people have no access to electricity; four billion people earn less than \$1,500 a year, two billion people have never made a telephone call. To call them digitally “disadvantaged” or “underprivileged” is a pathetic and disrespectful understatement. On a global scale, it is fair to argue that basic

food, health, education and the acceptance of elementary human rights should be among our foremost priorities. What needs to be stressed here, however, is that underestimating the importance of the DD, and hence letting it widen, means exacerbating these problems as well. In a global context, where systemic synergies and interactions are escalating, no significant problem comes in isolation. Bridging the DD is probably part of the solution, leaving it unsolved is certainly part of the problem.

The DD disempowers, discriminates, and generates dependency. It can engender new forms of colonialism and apartheid that must be prevented, opposed and ultimately eradicated.

How can we cope with the new ethical challenges? Since the DD is a problem affecting individuals rather than societies, solutions can be more effective if they are grassroots-oriented and bottom-up, but unfortunately old solutions to past ethical problems cannot be merely exported and mechanically re-applied to the infosphere. Technologies are not only tools, but also vehicles of affordances, values and interpretations of the surrounding reality. Any significant technology is always ethically charged. Naturally, other technological innovations (the printing or industrial revolutions, for example) had their own pressing ethical consequences. Some of them are still with us: think of universal literacy, freedom of speech, sustainable development, or pollution. However, the ethical impact of past technologies took place within a context in which nature played the queen and we were her workers. Ethical problems developed on a much longer time scale, they did not have the immediately global and pervasive nature we associate with ICT nowadays and were not embedded in a context where the virtual has started to become more significant and real than the physical. The problem is that our ethical development has been much slower than our technological growth. We can do so much more than we can understand. Upgrading our moral sensibility is a slow process.

The infosphere is an environment that is essentially intangible and immaterial but not, for this reason, any less real or vital. The ethical problems it generates are best understood as environmental problems. They include education as capacity-building training; preservation, dissemination, quality control, reliability, free flow and security of information; enlargement of universal access; technical support for the creation of new digital “spaces”; the sharing and exchanging of contents; public awareness; respect for diversity, pluralism, ownership and privacy; ethical use of ICT; integration of traditional and new ICT. To alleviate these and similar problems we need a robust environmental approach, which can provide a coherent guidance for the equitable development of this new space for intellectual life. In short, we need an information ethics.

Information Ethics is the new environmental ethics for the information society. It argues that the digital divide can be bridged. What we need to do is to fight any kind of *destruction, corruption, depletion* (marked reduction in quantity, content, quality, value) or *closure* of the infosphere, what shall be referred to here as *information entropy*. The ethical use of ICT and the sustainable development of an equitable information society need a safe and public infosphere for all, where communication and collaboration can flourish, coherently with the application of human rights and the fundamental freedoms in the media. Sustainable development means that our interest in the sound construction of the infosphere must be associated with an equally important, ethical concern for the way in which the latter affects and interacts with the physical environment, the biosphere and human life in general, both positively and negatively.

Bridging the DD means developing an informational ecosystem management that can implement four basic norms of a universal information ethics:

1. information entropy ought not to be caused in the infosphere
2. information entropy ought to be prevented in the infosphere
3. information entropy ought to be removed from the infosphere

4. information ought to be promoted by extending, improving, enriching and opening the infosphere, that is by ensuring information quantity, quality, variety, security, ownership, privacy, pluralism and access.

These universal principles represent a development of the ethical discourse in Western culture, which has gradually abandoned its anthropocentric perspective. They re-evaluate an ethics of respect for both the physical and the immaterial world. An information ethics for the information society needs to take into serious consideration the value of what is immaterial and intangible. This is the best way to foster care and respect for the infosphere. Reality, both natural and immaterial, is not merely available for domination, control, and exploitation. Reality should also be an object of respect in its autonomous existence. This is what we can learn from an environmental approach. But history has its ironic twists, and precisely those high-technology societies, which have brought about the information revolution, seem to be the least able to cope with its ethical impact. Why? Because one of the most fruitful contributions for developing an environmental approach comes from pre- or non-industrial cultures, which have been able to maintain a non-materialistic and non-consumerist approach to the world. These cultures are still spiritual enough to perceive in both physical and immaterial realities something intrinsically worthy of respect, simply as forms of existence. It is these cultures that can help us to make the infosphere a more civilised space for all. The environmental ethics of the infosphere can be built by relying on its outsiders.

In 2003, at the World Summit on the Information Society and at the 21st World Congress of Philosophy, the task of the international community will be to build global consensus around a core of ethical values and principles for the information society. There is a profound and widespread need for analysis and ethical guidance. Fostering the formulation of universally recognised principles and common ethical standards related to the use of ICT and based on an environmental information ethics will be a major

contribution to the construction of a better world. It is not a matter of imposing legislative measures, strict regulations or empowering some controlling organisation. The goals are to extend the ethical concern from the biosphere to the infosphere, to sensitise humanity to the new ethical needs of intangible, intellectual environments, and to indicate how the DD can be bridged. Our challenge is to collaborate to develop a coherent and robust environmental information ethics for the future of humanity. Building an equitable information society for all is a historical opportunity we cannot afford to miss.

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