



Information and Communications Technologies

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Session 1: Deculturation and/or Acculturation in the Information Society

Chair:
Alain Giffard, President, Alphanet (France)

Rapporteur:
Jean-Marie Pierrel, Director, ATILF, Professor,
Université Henri-Poincaré – Nancy1-CNRS
(France)

Speakers:
- Rafael Capurro, Professor, Stuttgart Media
University (Allemagne)
"Ethics between Law and Public Policy"
- Charles Ess, Professor, Drury University
(USA)
*"The World is not flat: Culture, Communica-
tion and ICTs"*

Discussant:
Monique Slodzian, Professor, Institut national
des langues et civilisations orientales,
INALCO (France)
"A flat World, Directions for using the Web"

Session 2: The Neutrality of Technology

Chair:
Joseph Mariani, Director, Institut des techno-
logies multilingues et multimédias de l'infor-
mation, CNRS (France)

Rapporteur:
Laurence Monnoyer-Smith, Professor, Uni-
versité de technologie, Compiègne (France)

Speakers:
- Luciano Floridi, Professor of Philosophy,
Research Chair in Philosophy of Information,
University of Hertfordshire and Director of
the IEG, University of Oxford (Great Britain)
*"Human Evolution after the Information Re-
volution"*
- Simon Rogerson, Professor, Centre for Com-
puting and Social Responsibility De Montfort
University (Great Britain)
*"Ethics: the Driver of an Empowering Infor-
mation Society"*

Discussant:
Michel Riguidel, Professor, Télécom Paris-
Tech (France)

Session 3: New Cultures and New Practices in the Information Society

Rapporteur: Philippe Aigrain, Managing Director, Sopinspace (France)

Chair:

Jean-Paul Haton, Professor, Université Henri-Poincaré, Nancy 1 (France)

Speakers:

- Colin Allen, Professor, Indiana University, Bloomington (USA)

"The World is not flat: Expertise & InPhO"

- Jeannette Wing, Professor, Carnegie Mellon University, National Science Foundation (USA)

"Computational Thinking and Thinking about Computing"

Session 4: New Powers and New Political Challenges in the Information Society

Rapporteur:

Françoise Massit-Folléa, Research Director, Fondation Maison des Sciences de l'Homme, Paris (France)

Chair:

Jean-Gabriel Ganascia, Professor of Computer Science, Université Pierre-et-Marie Curie (France)

Speakers:

- Jacques Berleur, Professor, Facultés Universitaires Notre-Dame de la Paix, Namur (Belgium)

"Ethics and Regulations in the Information Society"

- Vittorio Bertola, Internet consultant, Società Internet (Italy)

"Flatter Power for a World of Peers"

Discussant:

Bernard Benhamou, Representative for Internet Use, Ministère de l'enseignement supérieur et de la recherche (France)

For a quarter of a century, information and communications technologies (ICTs) have been changing the face of society at a rapid rate. We need to bear in mind that information technology only became widespread among the general public from the mid-1980s with the launch of the first microcomputers, particularly the Macintosh in 1984, and that the number of Internet users has risen in fifteen years from a fraction of one percent to over 21.9% of the world's population. Thus today, over 1.5 billion inhabitants of the globe regularly log on to the Internet. The influence of ICTs on daily life in industrialized societies means that they can no longer be ignored. Access to work, administrative formalities and the whole of civil life increasingly involve the use of these technologies.

If information technology looked rosy to many in the 80s and 90s, promising a more streamlined, less bureaucratic world which would be more fair and pleasant for all, it now appears that this optimistic outlook has turned grim: it would seem to be undeniable today that the huge use of ICTs has brought with it new problems, inequalities and powers.

What can be done to avoid this new world created by widespread use of ICTs placing mankind in thrall to machines in the name of efficiency and security - or to new powers established by the empire of machines - and to ensure that we are not subjected to daily digital harassment by them? Scientists wor-

king on current developments in ICTs, both in the technical sphere and in social sciences, cannot ignore the question, as they bear the responsibility.

In order to do this, it would seem to be desirable to evaluate the actual impact of ICTs on daily life and to consider the intrinsic consequences of the growth of these technologies, if they exist. We must also examine original solutions already implemented by men of good will, such as freeware for example, and to measure the political challenges of the growth of ICTs. This is what has been attempted in the workshop devoted to ICTs, in which we tackled more specifically the issues of cultural diversity, use and regulation. The work was spread over four sessions whose themes were:

1. The process of deculturation and/or acculturation in the information society;
2. The neutrality of technology;
3. New cultures and new practices in the information society;
4. New powers and political challenges in the information society.

The four sections below present specific reports on each session.

**REPORT ON “THE PROCESS
OF DECULTURATION AND/OR
ACCULTURATION IN THE INFORMATION
SOCIETY”**

Jean-Marie PIERREL, rapporteur

The non-stop exchange of information taking place today across the globe through ICTs enables all of mankind to share in a common world culture. With the help of our speakers Rafael Capurro and Charles Ess, as well as the questions of our discussant, Monique Slodzian, this session allowed us to take stock of this issue by studying the regulatory processes which have been implemented and by emphasizing the impoverishments and enrichments which result from these exchanges of information against the backdrop of the question “Is the world today flat?”.

Rafael Capurro’s contribution focused first of all on existing regulatory processes and on the relationships between ethics, law and public policy. After a preliminary reminder of the need in society for critical thinking on individual and societal behaviour and regulations an initial conclusion was reached: the distinctions between ethics, law and public policy are becoming blurred. Just at a time when statements of public policy usually provoke strong reactions from Internet users, when law as a catalyst for morality and ethics is becoming increasingly controversial and when the Internet is proclaiming its independence from political authorities,

ethical committees on the use of new technologies are being set up (claiming to be politically independent and pluralist) under the authority of political powers (cf. Germany, France, the USA and also UNESCO). Simultaneously in Europe, a network is being established to track the opinions expressed by members of the public on new technologies more closely. It is indeed clear that these different initiatives are moving towards building new relationships between ethics, law and public policy.

In the second presentation, bearing in mind the ease of instant communication on a worldwide scale, Charles Ess raised the issue of whether we are building a flat world, a world which is no longer defined economically, politically or socially in terms of geographical frontiers.

This vision of a “flat” world rests on suppositions and promises of communication which have no validity and are culturally dangerous. Although it is true that at the outset the Web was based on Western culture to the detriment, for example, of culture from Asia, and on the white population rather than minority groups in the USA, the situation now seems to be changing. Minorities are gradually finding their place in the digital world (cf. the appearance of digital avatars representing ethnic minorities in “Second Life”).

Just as English reigned supreme in the early days of the Web with ASCII code being

limited to non-accented Roman characters, now the current standards support character sets from different languages and are creating a Web presence for most languages. We can, however, rightly consider the wisdom of a sort of hybridisation of different cultures which runs the risk, through the demands of intercultural communications, of imposing a "thin culture" or "minimal culture", which would constitute a significant impoverishment of our diverse cultures. The danger is all the more great because a common culture of this kind actually runs the risk of modifying our understanding in particular - our intercultural understanding and more generally, our understanding of our own world. Yet, despite these fears, electronic means of communication do not inevitably lead to the loss of traditional learning. Sometimes, they can even lead to a rebirth of languages and literature which would otherwise sink into oblivion.

Problems of collective and individual responsibility then surface and the issue which arises again from the fundamental links between languages and cultures is that of knowing what action to take to enable cultural diversity to provide the antidote to cultural uniformity in an era in which information and communication technologies tend to reduce language to a mere communicative tool. Once again, English seems to be imposing a type of cultural imperialism in form and content through the metadata and ontologies which are the medium of the semantic Web. We feel that it is futile to want

to define a structure and terminology common to all languages and that to stand up for linguistic equality is an ethical issue, too often hijacked by *ad hoc* institutional committees these days, whose principles we know, since Lisbon, to be governed more by economic preferences than a willingness to preserve diverse cultures.

In conclusion, in a world which is still seeking its identity through globalization, it is appropriate to ask questions about the current role of traditional ethics which are essentially individual, when ethics committees established to regulate our technological society are imposing an increasingly collective ethic between law and public policy.

REPORT ON "THE NEUTRALITY OF TECHNOLOGY"

Laurence MONNOYER-SMITH, rapporteur

Work in this session tackled the issue of the neutrality of technology through the optic of various ethical questions raised by recent developments in new information and communication technologies.

It actually transpired that both Simon Rogerson and Michel Riguidel's presentations show that society's dependence on ICTs is causing a profound change in the relationship between developers (engineers,

scientists, etc.), elected representatives and citizens. Technologies, (especially communications technology) have more or less clearly defined socio-political agendas and raise ethical questions about the nature of our relationship with living things, the environment, our identity, politics, etc. Under these circumstances, discussions in the session consisted of considering the issue of knowing how to ensure that this dependence on ICTs is supported in social terms, so that their use is not expressed by a growth in the phenomena of inequality which are already so marked in modern societies.

The call for ethics observed by discussion leaders seems to correspond to two complementary factors: the increase in pressure from ICTs on all aspects of daily life on the one hand, and increased use of the network by people from very different cultures on the other hand. In fact, recent developments in research into online use and the predicted network/object/human crossover is raising totally new questions about definitions of identity, the nature of the data that defines it and the degree of freedom and anonymity desired by citizens, thereby fundamentally questioning the balance traditionally established in Western cultures between certain basic freedoms and the social rights gained since World War II. What workshop participants seem to be calling for is a redefinition of the terms of a new agreement on values through deliberation in an open area of governance, in accordance with transparent processes.

The second factor makes the plan for a dialogue which is already particularly ambitious to implement, even more complex by introducing an additional variable: multiculturalism. How can we establish a consensus on the nature of technical objects circulating on the World Wide Web when use is local or culturally based? How can we build an agreement on the ethical values underlying technical deployment when users are from such different or even opposite backgrounds?

This fundamental question brought the discussions to a close.

REPORT ON “NEW CULTURES AND NEW PRACTICES IN THE INFORMATION SOCIETY”

Philippe AIGRAIN, rapporteur

During this workshop, we had two presentations, one on access to knowledge and the other on knowledge production.

Drawing on his experience as associate editor of the Stanford online encyclopaedia, Colin Allen described the three most common knowledge evaluation models:

1. Peer review. This is a hierarchical world in which experts are assumed to have knowledge.
2. Wiki. Power is given to all without differentiation, although it quickly became apparent that this model of “flatness”

or absence of distinction does not work.

3. A stratified model in which each contributes according to their ability.

The third model has been adopted in the Stanford philosophical encyclopaedia, where different types of status are distinguished: editors, experts and enlightened amateurs. It should be emphasized that this encyclopaedia covers the fields of philosophy and logic, with much longer and more detailed entries than *Wikipedia*.

Colin Allen then mentioned the InPhO project, which involves the constitution and maintenance of a dynamic ontology facilitating access to the content of the Stanford philosophical encyclopaedia. This ontology takes as its starting point approximately 2,000 terms and gradually grows on the basis of suggestions, with the editorial board examining and filtering suggestions.

Naturally, this model raises questions about expertise in society, financing and the control which is and must be exercised. In this respect, there is a fear that groups with low skill levels could outnumber the experts. Traditional peer evaluation models established communities of scholars which advanced knowledge and mutual understanding through their dialogue and exchanges, even when they were conflictual. Is there not therefore a risk that these former models based on respect for skills will disappear and that new editorial methods of evaluation by popular consent will take over?

The Stanford online encyclopaedia project - and the stratified model which it implements - is original in that it tries to answer these questions by adopting a hybrid approach which takes advantage of the feedback from a large number of people while establishing a distinction based on competency.

In the second presentation, Jeannette Wing described the notion of computational thinking. More specifically, this presentation concerned changes in the approach and creativity of scientists resulting from the development of computers and e-sciences. It should be noted that in the English-speaking countries in which they are being greatly developed, the term e-sciences is usually applied to scientific practices which draw both on data disseminated on the web and on the computational power accessible through the web - what is termed grid computing.

A number of e-science research projects currently exist in the United States, the United Kingdom and Australia. There are many e-science applications, not only in physics, medicine and bioinformatics, but also in the social sciences.

Having illustrated the applications of computational thinking in different fields in molecular biology, physics or the neurosciences using several examples, Jeannette Wing showed how these practices transform individual skills. According to her, not only will everybody in the future be capable of

accessing computers and using them, but they will also develop new skills as a result of computer use. More specifically, this computational thinking is based on the abstractions we use to formalize problems on the computer and on automation, which simulates a certain number of processes.

Jeannette Wing then sketched out the stages of a method in which different practices appear, such as deconstructing a problem, representing a problem adequately, evaluating the complexity involved in solving it, recursive thought and the verdict delivered on a system depending on its simplicity and the elegance of the solutions which it produces, etc.

This presentation generated lively responses from the audience. In particular, many feared that the computational thinking described by Jeannette Wing sought to enslave human thought to machines and to strip mankind of the ability to think independently. Others wondered if scientific thought, for example that of mathematicians and physicists can be rationalized and mathematicized so easily that it is possible to automate it. Finally, some people wondered what the consequences of such an approach might be in education. These lively discussions enabled Jeannette Wing to specify that the aim of her project was not to replace scientists with computers but, on the contrary, to promote new scientific practice by increasing scientific skills with the help of computers.

REPORT ON “NEW POWERS AND NEW POLITICAL CHALLENGES IN THE INFORMATION SOCIETY”

Françoise MASSIT-FOLLÉAT, rapporteur

Jacques Berleur presented a paper entitled “Ethics and Regulation in an Information Society”. As one of the pioneers of research into the relationship between information and society, and having played a senior role in this field within his own university, Jacques Berleur has worked both as a participant and informed observer in the work of WSIS and of the Internet Governance Forum which emerged from it.

After recalling the American Lawrence Lessig’s analyses on Internet standards (at the intersection of technical, economic, social and legal standards) and those of the Pierre Trudel from Quebec on the three types of regulation at work in an information society (self-regulation, regulations and coregulation), he focused on ethical aspects by referring to Rafael Capurro’s approach according to which ethics enables us to problematize social issues.

On the subject of regulation by technology, he notes the heterogeneous nature of the players (IETF, W3C, ICANN, ISO) and of their aims (creating standards or protocols, managing addresses and domain names, administrative standardization) and draws attention to two controversial issues sur-

rounding ICANN: the excessive extent of the United States government's involvement in critical resource management of the Internet and its intrusion in the field of public policy (whether this be human rights, access to infrastructure or cultural diversity, to name but a few examples).

On his favourite subject of self-regulation, he emphasized the abundance of codes, charters and other guides to good practice and the fact that they demand little in the way of commitment from those who subscribe to them (whether it be netiquette between email users or internal Internet policies within companies or in other professional areas such as health, business, online publishing, etc.). It seems that these commitments are directed at protecting the companies who subscribe to them rather than consumers and citizens. Since the aim lies not in taking part, one is entitled to ask to which standardized order self-regulation belongs.

Legal regulation suffers from several limitations: the national nature of jurisdictions, their lack of reactivity and flexibility and lack of technical expertise on the part of lawyers. Even European directives (such as those governing personal data protection) are not sufficient to encompass very diverse practices. Focusing just on Western nations, the dominance of the American legal system and Council of Europe directives show that different approaches are at work, as demonstrated by Yves Poulet (Professor

of law at CRID – FUNDP, Namur). Since the economy has given rise to a wave of deregulation, regulation applies to protecting content, transactions and the fight against cybercrime – an approach which is defensible in general terms, but which poses a real threat to human rights.

The scientific challenge is therefore to uncover hidden interests in this regulation which come from every quarter. Scientific analyses must be brought to bear more heavily in the work of Internet Governance Forum. As far as the idea of creating a sort of Internet Bill of Rights is concerned stemming from civil society, or a plan for a Council of Europe Charter, it is important to define to which judicial tradition one is referring – the jurisprudential tradition of common law or the more prescriptive Westphalian tradition.

In response to questions from the audience, Jacques Berleur emphasized the need to record and explain the differences between different schools of thought on the issue of prescriptiveness, but also the need for regulatory pluralism which remains to be organized. And for well-defined areas in which to exercise these responsibilities.

The second speaker, Vittorio Bertola, introduced himself as an "institutional hacker", because he has placed his information technology skills at the service of many Internet governance authorities (ran-

ging from ICANN to the dynamic Internet Bill of Rights coalition). He focused on the consequences of the peer-to-peer protocol, which according to him expresses the "social capacitation model" which is constituted by the Internet: it is no longer just major companies speaking up as vociferously as governments about communicating scientific, media or entertainment content, but also users, who are becoming increasingly innovative, productive and aware of their power.

The ability to change the world has therefore been reoriented from the centre outwards, from the bottom up and from injunction to consensus. This implies incorporating users into the fabric of policy because "the flatter the power, the less flat the world". In order to connect the principle of the local with the global in Internet governance it would be necessary to conceptualize and guarantee the fundamental architecture of the Internet end to end. A document could be submitted for approval after dialogue (which remains difficult) on common principles, overcoming differences and the actual process of this dialogue.

The discussion leader, Bernard Benhamou, former advisor to the French Ambassador at WSIS (World Summit on the Information Society) and current interdepartmental representative on Internet Use, opened the discussion with a short-term vision for the

future: change is underway with the growth in mobile Internet and the Internet of objects¹ and the convergence of nano-biotechnologies. Privacy has become the key ethical question.

Here too, the multiple normative standards of the Internet must be taken in to account: respect for fundamental rights would occur through the establishment of new architectures; dialogue is necessary but must lead to the establishment of new rules at a time when the threat of "Little Sisters" (RFID chips) is replacing that of Big Brother. Two examples are offered: techniques for deactivating the chips and the creation of decentralized governance hubs for naming objects.

However the whole issue remains of an authority which could coordinate such initiatives: controversy surrounding the role of the United States, Europe and the rest of the world (including China²), or of the UN and the IUT which accompanied the creation of ICANN has scarcely improved since WSIS.

Following these presentations, discussion focused on the dangers of technological determinism on the one hand and on the need to avoid excluding the "bad sports" from the regulatory system on the other hand.

Today, the Internet seems to be an essential resource which governance could or

¹ Cf. The study " *Internet des Objets: quels enjeux pour les Européens ?*" <http://www.voxInternet.org/spip.php?article255&lang=fr>

² On this subject, a participant mentions the " Euro-China Forum" of the Charles-Léopold Mayer Foundation, which is regularly updated.

should compare with the notion of common property, some say global public property (on a par with water, the climate or biodiversity, for example). This requires a joint effort on the part of experts, bureaucrats, companies and users to “build standards democratically” and to allow fair decisions to be taken by transcending the simple framework of dialogue between multiple parties involved.

the planet. However, the adoption of technologies, the use made of them and the meaning which we attribute to them vary greatly depending on the culture and people. Many minority cultures have been able to maintain a link and a living culture thanks to communications technologies. Similarly, new communities and interest groups such as patient groups have appeared thanks to communications technologies. From this point of view, we can state that the world is not flat.

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Themes
and
Questions for
Dialogue

CONCLUSION

In conclusion, as we saw in the introduction to this report, we must bear in mind the speed of change linked to ICTs – in less than a quarter of a century they have transformed the world in which we live. Not just the unprecedented speed of these developments, but also their unpredictable nature should be emphasized – they never occurred as predicted. They now affect the whole sphere of culture, science and, more generally, the whole chain leading from the production to the consumption of knowledge. Therefore, contrary to what one might imagine, technology is not creating a totally uniform culture. Particular traits and social hierarchies remain. Admittedly, creating uniformity across technologies and communications protocols in particular requires everybody to share the same conventions – this is the price we pay for flawless communications across the whole surface of

Finally, despite growing aspirations to democracy, and to active participation for all, it has become necessary to establish content validation procedures which recognize different abilities and differentiate contributors according to ability. Here too, the world is not flat!

The second important point is related to the role of ethics. This new world appearing before us actually mentions it increasingly often. We even see codes of ethics or ethical charters appearing in many professional associations and international organizations³. Yet frequently recourse to ethics rather than politics or law is ambiguous. Some say that it is at the point when politics no longer dares make its presence felt and steps aside out of respect for the rules of good governance that ethics occupies the centre stage. Others say that we do not draw a sufficiently clear distinction between ethics and morality, in the sense that we all too often tend to confuse reflection on the foundations of social norms

³ The most recent in our field is the “Global Network Initiative”

– i.e. ethics – with the expression of these norms, in other words morality. UNESCO's attempts to promote the notion of a code of ethics would seem to be altogether symptomatic in this respect. How can one actually claim to write a code of ethics when ethics lies at the root of the law and hence of every code? Furthermore, how can one conceive of it without referring to the other determining features of network use which are computer code and its applications, which are often opaque to users? In short, it is not simply a question of decreeing laws based on common sense which are acceptable to all; it is also above all necessary to consider the standards on which these rules are based. The importance of philosophical reflection on the theoretical basis of morality and on Internet praxis must therefore be emphasized.

Finally, the third section deals with the political dimension: institutions have been regulating cyberspace for twenty years. Some have competence in infrastructure or in standardizing protocols and languages, such as IETF or W3C, for example. Others tackle eminently more sensitive or controversial issues such as ICANN, which is responsible for allocating domain names. At the end of the day, current developments enable us to foresee substantial and rapid growth, in particular with the extension of the Internet to objects. The political aspect of these regulatory bodies is no longer in any doubt. The United States currently plays the major role. Europe and other continents will

certainly need to be represented in these institutions in the future. From this point of view, the world will not have to be totally flat nor subject to the hegemony of a single country. However, it will also be necessary to uphold the fundamental principles of openness, transparency and fair access which formed the basis of the development of information technologies, and of the Internet in particular. Although many people want all countries of the world to be represented in these institutions, some fear that emerging nations aspire to fragment the Internet. This would allow greater state control in an area in which they feel the most deprived of it. This risk seems all the more great because ideals of transparency and freedom are not shared equally across the globe.

In this respect, we should note that over the centuries many educated men, inspired by the Enlightenment ideal, aspired to a universalization of the fundamental principles of freedom and equality – in other words, a flat world. Yet today we observe the existence of cultural differences despite the tendency of communications technologies to create uniformity. Many people would now like to achieve a world which would respect differences, allow conflict and permit different points of view to confront each other, come what may. In short, having confirmed that the world of information technology is not flat, some people are laying claim to the uneven surface of cyberspace and its regulation: not only is the world which is emerging not flat, but the world which we are creating should not be flat either!