Ethical Foundations of Knowledge as a Commons*

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ABSTRACT

We consider information ethics the reflection on beliefs, rules and values in electronic environments, in particular with respect to producing, exchanging, sharing and using knowledge and information. This paper will provide an overview of information ethics in the context of the UNESCO from the first INFOethics conference in Monte Carlo 1998, to the UNESCO contribution to the two United Nations WSIS conferences(World Summit on the Information Society) in Geneva and Tunis and to the information ethical aspects of the UNESCO Information for All Programme. As a result of this debate we conclude that there is need for a new approach to achieve the goal of people-centered, inclusive and sustainable knowledge societies. We propose to consider knowledge a commons. Commons is thus the central concept of knowledge ecology and the centerpiece of information ethics. In the commons paradigm, a new consensus needs to be achieved concerning traditional concepts such as freedom of information and science, intellectual property, authorship and the nature of knowledge objects in general. Information ethics can contribute to this discussion by providing an open discourse about these transformation processes.

Keywords: Information Ethics, UNESCO, World Summit on the Information Society, Knowledge Ecology, UNESCO Information for All Programme

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* The paper was originally presented at the International Conference commemorating the 40th Anniversary of the Korean Society for Library and Information Science held in Seoul, Korea on October 8, 2010.

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논문접수일자: 2010년 9월 4일 최초심사일자: 2010년 9월 16일 게재확정일자: 2011년 5월 23일
한국문헌정보학회지, 45(2): 23-40, 2011. [DOI:10.4275/KSLIS.2011.45.2.023]

1. Information ethics in changing environments

Information ethics aims at finding out which beliefs, rules and values guide people at any given time in history in producing, exchanging, sharing and using knowledge and information (in the following we use for “knowledge and information” the abbreviation k&i). We can also subsume beliefs, rules and values under the concept of morality or moral behavior. The set of beliefs, rules and values (the moral behavior) cannot be said to be stable or even eternal. Hardly anyone would today accept that this set, or that morality can be derived from whatever law of nature, from however founded metaphysics, let alone from religion or the will of God. It depends, in the Aristotelian tradition, on the environments in which humans live. These environments change in time and space. The change depends on many factors, among those, with respect to k&i, technology, information and communication technologies, is presumably the most important one.

The production and the usage of k&i at times when knowledge was turned into visible and communicable information by writing it on parchment was not only different from the way knowledge was made visible and communicable under the Gutenberg paradigm (printing with movable letters). It also influences the moral behavior, for instance who can claim author- and ownership of k&i with which consequences for access to and usage of it, who is willing to share k&i and who is going to enclose it, to fence it in. And it also influences the way political power and economic interest is justified and achieved by taking k&i under control. And all this is, of course, completely different from the way knowledge is made visible and communicable in electronic environments, in times of the Internet.

The relation between technology, information and communication technologies (ICTs), and the set of beliefs, rules and values is not deterministic, least of all is the relation between technology and power structures or commercial business and organizational models deterministic. These relations are in any case bidirectional: technology influences moral behavior, but existing moral behavior, in combination with political power or economic interest, also influences what kind of technology will and should be used, for instance whether technology (in this case software) is used in the form of digital rights management to fence in and control the usage of k&i or whether technology is used to build P2P networks in order to allow free sharing and exchange of k&i. So, the relation between electronic environment, moral behavior, political power and economic interest are not easy. But they are definitely in permanent change.

Information ethics, in addition to its descriptive goal, can also be useful in providing a base for discourse concerning which moral behavior in any given time is appropriate to achieve the

general goal of a good and just life for everyone. Or, with respect to the importance of ICTs for all aspects of producing and using k&i, it is also useful to analyze which use of ICTs is appropriate in order to achieve the goal of an inclusive and sustainable society where all have the chance to develop their personal and social goals. Information ethics can be thus a necessary counterpart to a view of information and knowledge considered primarily as commercial goods. Under the commercial-goals perspective k&i are necessarily made scarce objects to which access is controlled and limited mainly by price, technical and/or legal constraints. From an economic point of view this control and limitation seems to be necessary in order to guarantee the return of investment which is needed for providing the information markets with information goods and services. It is, of course, not only the interest in a return of investment which drives the market economy, but also the expectation of a reasonable (and at present, on global information markets, more than a reasonable) profit.

The right to commercialize k&i is in general justified by the assumption that k&i can be object of private property, in our case of private intellectual property. In the commercial, market-driven approach, knowledge and information, comparable to other natural goods and objects, such as air, water, the fish in the ocean, the oil in the earth, can be and is (socially and politically) allowed to be exploited.

Ironically, the exploitation is often even ethically justified by the assumption that the work that has been invested in making the material or immaterial resources available to the public justifies the claim of personal (intellectual) property, which needs to be protected not least by law – in our case, mainly by patent law or authors' rights law (or copyright law as it is called under the influence of the Anglo-Saxon law regime).

In the following we have a twofold analysis in mind. Being the German UNESCO chair in communication for more than 12 years I have been involved in some of UNESCO's attempts to contribute to building what UNESCO has called the knowledge societies. UNESCO is, among the UN organizations, probably the one most profoundly grounded in an ethical (and increasingly information ethical) understanding of what needs to be done to achieve the goal of people-centered, inclusive and sustainable societies.

Therefore in the first part we will first summarize a) the main findings of the INFOethics conference, b) UNESCO's contribution to the WSIS process, with respect to the ethical challenges of the information society, c) the main points of the Code of Ethics, which is designed to become the major foundation of the UNESCO Information for All Programme (IFAP). In the second part we will suggest a new foundation for information ethics considering knowledge and information

as a commons and hold open access the appropriate institutionalization for free und universal access to k&i.

2. Information ethics in the UNESCO

The ethical implications of education, science, culture and communication – the major topics of UNESCO –, have been from the very beginning of its foundation an important subject and continuing challenge to UNESCO. “Julian Huxley, the first Director-General, pointed out that in order to make science contribute to peace, security and human welfare, it would be necessary to relate the applications of science to a general scale of values. Guiding the development of science for the benefit of humanity will therefore imply ‘the quest for a restatement of morality … in harmony with modern knowledge’ (Huxley, 1946). Since its foundation, UNESCO has been concerned with moral issues in relation to science.”[1)]

Ethics is thus at the heart of UNESCO’s mandate. This became particularly evident when UNESCO realized the all-embracing, even revolutionary effect of modern information and communication technology (ICT) and in particular of the Internet with its immense impact on virtually all aspects of our lives. UNESCO realized that ICT change the way in which education, science, culture and communication can contribute to a just and fair-minded world.

UNESCO realized “that the new information and communication environment of the Internet is the new media which will influence our societal structure or even our value systems.”[2)] In addition to its original sectors, UNESCO established in 1990 a Communication and Information Sector, and “subsequently adopted the aim of building inclusive knowledge societies through information and communication as one of the Organization’s five overarching objectives.[3)]

By “knowledge societies”, UNESCO means societies in which people have the capabilities

1) Ethics of science and technology. Explorations of the frontiers of science and ethics. UNESCO Paris 2006. <http://unesdoc.unesco.org/images/0014/001454/145409e.pdf>. [in particular Chap. 1 UNESCO and Ethics of Science and Technology].

2) The Monaco INFOethics Declaration ’98 – October 3rd 1998.

3) As a consequence and “on the recommendation of the PGI Council and IIP Committee, the General Conference authorized the Executive Board to create the Information for All Programme (30 C/Res. 36, 1999) merging the General Information Programme (PGI) and the Intergovernmental Informatics Programme (IIP). The activities carried out by these two programmes did no longer respond neither to the needs of the information society nor to the new requirements of UNESCO in this area.” <http://portal.unesco.org/es/ev.php-URL_ID=39660&URL_DO=DO_TOPIC&URL_SECTION=201.html>.

not just to acquire information but also to transform it into knowledge and understanding, which empowers them to enhance their livelihoods and contribute to the social and economic development of their societies."[4)]

Knowledge and information are the common concepts underlying all UNESCO's themes. This is not only true of education, science and communication, but is also applicable to culture where, of course, not only immaterial but also material objects are involved, but where the value of these objects is in any case communicated via information. Information makes knowledge communicable. Information is not an objective in itself, but makes knowledge accessible.[5)]

UNESCO thus began wondering whether there is a need for a new understanding of ethics.

- In 1998, UNESCO established the World Commission on the Ethics of Scientific Knowledge and Technology (COMEST) to advise the Organization on issues concerning the ethics of scientific knowledge and technology.
- A year before, UNESCO started a series of conferences, the so called INFOethics conferences. *Information ethics* was chosen as the name for ethics in electronic environments taking into account the need for an ethical foundation of the global information society.
- Information ethics has since been one of the central topics where UNESCO claims its competence and responsibility in the international debate about the information society, in particular

4) UNESCO, Communication and Information Sector 2010: Towards Inclusive Knowledge Societies. A review of UNESCO's action in implementing the WSIS outcomes. By David Souter. <http://unesdoc.unesco.org/images/0018/001878/187832e.pdf>.

5) We do not want to open a presumably never-ending debate about the distinction between knowledge and information or between information societies and knowledge societies. UNESCO, not consistently, but primarily since the WSIS process, uses the term "knowledge societies." The reason for this is obviously the conviction that knowledge has become the most important means for individuals to achieve their personal and societal goals. Because knowledge is not accessible directly it also makes sense to speak of "information societies" because information or more, precisely, information products and information media which represent cognitive knowledge structures allow access to the underlying knowledge. We suggest the following understanding: knowledge societies are the ultimate goal but information societies provide the means to achieve these goals. Societies are then called information societies when these means are available for everyone under fair, inclusive and sustainable principles. A "global information society is one where all persons, without distinction, are empowered freely to create, receive, share and utilize information and knowledge for their economic, social, cultural and political development." (Preamble of the Draft Declaration for WSIS I - <http://www.itu.int/dms_pub/itu-s/md/03/wsispc2/doc/S03-WSISPC2-DOC-0012!R1!MSW-E.doc>. In the final version of the Declaration under the title "Our Common Vision of the Information Society" this was changed into: "… we declare our common desire and commitment to build a people-centred, inclusive and development -oriented Information Society, where everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and peoples to achieve their full potential in promoting their sustainable development and improving their quality of life, …").

in the two UN conferences “World Summit on the Information Society” (Geneva 2003 and Tunis 2005) and in the WSIS follow-up conferences.

- Information ethics is also one of the five priorities of the Information for All Programme of UNESCO (cf. footnote 3).

3. Some results from the UNESCO INFOethics Congresses

Topics such as privacy vs. security, trust in electronic environments, or the digital divide were also at the center of the INFOethics conferences, but in the following we concentrate on those aspects which are directly related to the main concern of information ethics, namely the guarantee of free access to knowledge and information. We refer here only to the Statement of the 2nd INFOethics Congress ’98:

Since the adoption of the Universal Declaration of Humans Rights fifty years ago, UNESCO has emphasized constantly that “everyone has the right to freedom of opinion and expression, this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas to any media and regardless of frontiers” (art. 19).

“In the light of the conclusions of the conference

- we recognize that the new information and communication environment will influence our societal structure and value systems
- we believe that the new electronic world should reflect and reinforce the world’s cultural and linguistic diversity and encourage international cooperation
- we consider knowledge a public good that needs to be made publicly available in accordance with the principles of the free flow of information and of fair use.”

“We consider that among the most urgent problems in this context are those of freedom of access and personal privacy. Access to the resources of the Internet should reinforce democratic participation and is a contemporary realization of the universal principle of the freedom of expression. …

Access is the precondition for democratic participation and is

- the right to *read* information which will be more and more provided by electronic means
- the right to *write* information and thus to contribute from one’s own perspective to the knowledge of the world
- based on a *variety* of information services which should not be controlled by only a few

content and media providers

- based on the ability to use media appropriately (media competence) and the ability to execute information rights."

We find it particularly remarkable that access to knowledge and information is considered "a contemporary realization of the universal principle of the freedom of expression" and that knowledge (without any restriction) is considered a public good. This INFOethics statement was a good starting point and could even have led information ethics be grounded on the commons (see below), but, unfortunately, it was never approved officially as a UNESCO document.

Universal access and the idea of knowledge as a public good and part of the public domain is also in many other documents of major concern to the UNESCO, but often the concept of public domain is reduced to an understanding as "a right of universal online access to *public and government-held records* including information relevant for citizens in a modern democratic society, giving due account to confidentiality, privacy and national security concerns, as well as to intellectual property rights to the extent that they apply to the use of such information. International organizations should recognize and promulgate the right for each State to have access to essential data relating to its social or economic situation" (from the Recommendation concerning the Promotion and Use of Multilingualism and Universal Access to Cyberspace 2003[6]). The universal access principle is restricted to "repositories of information and knowledge in the public domain." These repositories should be realized by "cooperative arrangements which respect both public and private interests in order to ensure universal access to information in the public domain without geographical, economic, social or cultural discrimination."

The recommendation also sees the need of an "equitable balance between the interests of rights-holders and the public interest" and therefore a need for an "updating of national copyright legislation and its adaptation to cyberspace." In the copyright framework universal access is restricted to very limited exceptions from the exclusive rights of the right-holders (mostly commercial companies, which inherited some of the authors' rights by contract) and these limitations have to take into account the three-step-test in order to "ensure that such limitations and exceptions are applied in certain special cases that do not conflict with a normal exploitation of the work and do not unreasonably prejudice the legitimate interests of the rights-holders as required for in the WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT)."

6) <http://portal.unesco.org/ci/en/ev.php-URL_ID=13475&URL_DO=DO_TOPIC&URL_SECTION=201.html>.

UNESCO risks weakening the principle of universal access to access to the public domain (in the narrow understanding of government-related information) and to a right strongly constrained to commercial interests in the exploitation of knowledge.

4. World Summit on the Information Society (WSIS)

One would have expected that UNESCO would have been chosen as the UN organization responsible for this summit, but in reality it was the ITU (the UN-International Telecommunication Union). Nevertheless, UNESCO played an important role in the WSIS process and its follow-up events. “The WSIS was held in two phases: in Geneva in 2003 and in Tunis in 2005. Out of these two meetings came the Geneva Declaration of Principles describing the visions and commitments of the Summit, the Geneva Plan of Action setting out goals to be achieved, and the Tunis Commitment and Tunis Agenda, which includes the creation of the Internet Governance Forum (IGF) and the request for implementing Financial Mechanisms.”[7)]

The Geneva Declaration (“Our Common Vision of the Information Society”) declared the “common desire and commitment to build a people-centered, inclusive and development-oriented Information Society, where everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and peoples to achieve their full potential in promoting their sustainable development and improving their quality of life, …” (A1). This was formulated even more strongly in B3, 23: “The ability for all to access and contribute information, ideas and knowledge is essential in an inclusive Information Society” and (28): “We strive to promote universal access with equal opportunities for all to scientific knowledge and the creation and dissemination of scientific and technical information.” Here access is no longer restricted to government-related knowledge but refers to all kind of knowledge, “including open access initiatives for scientific publishing.”

Ethical dimensions of the Information Society are in particular discussed in Chap. B10, 56ff: “The Information Society should respect peace and uphold the fundamental values of freedom, equality, solidarity, tolerance, shared responsibility, and respect for nature (56). …. We acknowledge the importance of ethics for the Information Society, which should foster justice, and the dignity and worth of the human person” (57). Information ethics in general was “identified as a critical component in building a people-centered, development-focused and inclusive information society.”[8)]

7) <http://portal.unesco.org/ci/en/files/29223/125517103733486_9_CI_EN_int.pdf/3486_9_CI_EN_int.pdf>.
8) <http://www.itu.int/wsis/docs/geneva/official/dop.html>.

5. A Charter from non-governmental organizations in the WSIS process

WSIS was an intergovernmental conference, but international organizations, non-governmental organizations (NGOs) and those from industry were allowed to obtain accreditation with observer status. This gradually turned into a status allowing (within limits) active participation. Among the many contributions from the NGOs, particular attention was given to the "Charter of civil rights for a sustainable knowledge society" (a contribution of German Civil Society to WSIS).[9)]

- The Charter, being much more courageous and innovative than the official UNESCO WSIS documents, renews an universal understanding of access and thus "calls for the unhampered and non-discriminatory use of knowledge and information based on the principles of sustainability. The challenge for the knowledge society consists in securing the availability of knowledge and keeping access to information resources open. Knowledge and information are the primary means of providing citizens with a reliable basis for action."
- The Charter "questions the increasing privatization and commercialization of knowledge and information. A society in which the intellectual property regime transforms knowledge into a scarce resource is not a sustainable society."
- The Charter also connects the access principle with the concept of sustainability and thus opens the way towards an (extended) understanding of ecology as knowledge ecology: "A knowledge society is sustainable when it preserves and promotes historically achieved human and civil rights for future electronically determined environments. A knowledge society is sustainable when access to knowledge is unhampered and inclusive. … A knowledge society is sustainable when it promotes cooperative forms of knowledge production as the basis for innovation and creativity … A knowledge society is sustainable when access to knowledge and information provides all peoples of the world with the opportunity for self-determined development in their private, professional and public lives. It is sustainable when it preserves for future generations access to diverse media and information resources."

Among the rights and values mentioned in the Charter, the following are in particular relevant for information ethics:

1. Knowledge is the heritage and the property of humanity and is thus free. Knowledge represents

9) <http://www.worldsummit2003.de/download_de/Charta-3-0-english.rtf>.

the reservoir from which new knowledge is created. Knowledge must therefore remain permanently accessible to the public. Limitations on public access such as copyrights and patents must be the exception. Commercial exploitation of knowledge conflicts with the interest of society in knowledge as a public good. Knowledge as a common good must have a higher status in the hierarchy of social values than the protection of private claims.

2. Access to knowledge must be free. The central objective of a knowledge society organized according to the principle of sustainability is that access to all medial forms of knowledge must be possible for present as well as for future generations, for all peoples, at all times, in all places and under fair conditions. This applies to all domains of society, not only to science. Only free access to knowledge and information makes democratic participation in public affairs possible and stimulates creativity and innovation in science, business and culture. Only democratic control mechanisms can be allowed to limit the principle of free access.
3. Everyone has an unlimited right of access to the documents of public and publicly controlled bodies. Access to information and knowledge as well as free communication is a necessary prerequisite for personal development, for political participation and for the development of humanity as a whole. Freedom of information makes political decisions transparent, helps reduce corruption and improves the management of information in public administrations. Classifying administrative activities as secret must always require legitimization by law and should be kept within a tight legal framework.
4. All citizens have the right to inform themselves through publicly available resources and to have unhampered, unfiltered access to documents of public and publicly controlled organizations-without manipulation or control. Information and knowledge in private hands should also be accessible in case of a special public interest. Governmental and public administration institutions must commit themselves to the comprehensive electronic publication of all information of public interest.

6. WSIS Plan of Action and the role of the UNESCO in the WSIS follow-up processes

Among other topics UNESCO was in particular responsible for “Access to information and knowledge” (mentioned in C3 of the Plan of Action) and “Ethical dimensions of the Information Society” (C10).

In the following, UNESCO along with stakeholders took affirmative actions and stimulated preventive measures against abusive uses of information and communication technologies. The highlights of the actions in the area of info-ethics were: 4 regional conferences and seminars on ethics, for Latin America and the Caribbean, Africa, Europe and for the Asia-Pacific region held from 2006 to 2008.[10] The purpose of these conferences was to stimulate reflection and debate on the ethical, legal and social aspects of knowledge societies. They renewed the idea of universal access, but preferably to information generated from the public sector, and always with full respect to existing copyright regulations "it is necessary to ensure that lawful and confirmed limitations and exceptions enjoyed by certain categories of users remain applicable in the digital world and that at the same time copyright is not challenged" (from the European Regional Conference).

7. IFAP (Information for All) and the Code of Ethics

"The Information for All Programme is the only intergovernmental programme exclusively dedicated to promoting universal access to information and knowledge for development."[11] Information ethics is one of the five priorities of the Information for All Programme of UNESCO. Recently a Code of ethics for the information society has been developed by an informal working group invited by the IFAP Bureau.[12] The Code takes into account the WSIS documents, in particular the acknowledgement of the importance of information ethics to the information society and its vision of people-centered, inclusive, development-oriented knowledge societies by upholding the "fundamental values of freedom, equality, solidarity, tolerance and shared responsibility." It also has been inspired by the findings of the post WSIS regional conferences on information ethics

10) <http://portal.unesco.org/ci/en/files/29223/125517103733486_9_CI_EN_int.pdf/3486_9_CI_EN_int.pdf>.
Hanoi Statement on the Ethical Dimensions of the Information Society-14 March 2008.
<http://portal.unesco.org/ci/en/ev.php-URL_ID=26324&URL_DO=DO_TOPIC&URL_SECTION=201.html>.
European Regional Conference on the "ethical dimensions of the information society"-Ethics and human rights in the information society-Final recommendation.
<http://www.diplomatie.gouv.fr/fr/IMG/pdf/FinalRecommendations_en.pdf>.
Tshwane Declaration on Information Ethics in Africa.
<http://www.africainfoethics.org/tshwanedeclaration.html>.

11) <http://portal.unesco.org/ci/en/ev.php-URL_ID=1627&URL_DO=DO_TOPIC&URL_SECTION=201.html>.

12) <http://portal.unesco.org/ci/en/files/29593/126823513735_-_Draft_Code_of_Ethics_for_the_Information_Society_-_5.pdf/5%2B-%2BDraft%2BCode%2Bof%2BEthics%2Bfor%2Bthe%2BInformation%2BSociety%2B-%2B5.pdf>.

and ties the Code in with the UNESCO “Recommendation concerning the Promotion and Use of Multilingualism and Universal Access to Cyberspace 2003.”[13)]

Discussion about this Code is still going on, but the Intergovernmental Council for the Information for All Programme at its meeting in March 2010 made it very clear[14)], “that the code should ideally be non-binding in nature, viewed and accepted as a set of principles and values, thereby making it easier to be appropriated by the States and to be used as a reference framework for the elaboration of national codes.” In addition to the Code UNESCO has established a Global Ethics Observatory (GEO)[15)] “in order to provide Member States with proper tools for reflection and appropriate means for coping with emerging ethical challenges in science and technology.” The GEO will provide information about information ethics experts, institutions, and teaching programmes, but also about legislation, guidelines and policies developed in Member States in relation to the ethics of science and technology.

Information ethics is understood by the Code as “the field of critical reflection on principles of normative ethics relating to many aspects of the Information Society, especially with regard to the production, storage, distribution, access to and use of data, information and knowledge.” For information ethics the traditional “universal ethical principles, in particular those concerned with dignity and autonomy, freedom, social justice and solidarity” are likewise valid. Information ethics is strongly indebted to a “human rights-based approach” as enshrined in the Universal Declaration of Human Rights. Therefore “the use of information and communication technologies (ICTs) in content creation should respect humans rights and fundamental freedoms of others, including personal privacy, and the right of freedom of thought, opinion, expression, conscience and religion in conformity with relevant international instruments.”

The Code covers a broad variety of topics. With respect to this article, the chapter on “Access to creation and use of information and content” is in particular relevant. We summarize here some of its claims and main points: the production of local and indigenous content on the Internet in multilingual and multicultural form should be encouraged; people should have the freedom to access all the information made available to them by others. People should also have practical tools that make it easy, quick and efficient to produce, share, and access this information; new forms of access to information will stimulate wider dissemination of information regarding social,

13) <http://portal.unesco.org/ci/en/ev.php-URL_ID=13475&URL_DO=DO_TOPIC&URL_SECTION=201.html>.

14) <http://portal.unesco.org/ci/en/files/30614/127987277738_-_IFAP-2010_COUNCIL.VI_-_Final_Report.pdf/8%2B-%2BIFAP-2010%2BCOUNCIL.VI%2B-%2BFinal%2BReport.pdf>.

15) <http://unesdoc.unesco.org/images/0014/001454/145409e.pdf>.

economic and cultural aspects of life, and can bring about greater inclusion and overcome forms of discrimination; Member states should encourage and extend the availability of information in the public domain and prevent attempts to curtail access and usage rights: they should recognize and enact the right of universal online access to public and government-held records, including information relevant to citizens in a modern democratic society.

8. Towards an understanding of knowledge as a commons

In spite of the many excellent information ethics documents which have been produced by the UNESCO there seems to be a permanent contradiction between the right of universal access to k&i for everyone, which is mainly grounded in the UN Universal Declaration of Humans Rights (already more than 60 years old and developed and world-widely agreed on in a special historical situation after the Second World War) and the unquestioned acknowledgement of commercial interests in privatizing k&i and making it a scarce resource, which constrains universal access. According to our information ethics approach the moral behavior, the beliefs, rules and values with respect to k&i processes depend highly on the environment, nowadays on the electronic spaces in which these processes are carried out. The Internet world is a completely different knowledge space than the one in the 40's of last century. This does not mean that the human rights enshrined in the UDHR are no longer valid, but they needed to be reinterpreted and, with respect to k&i, grounded in a different way. Because of the ICT potentials

> "citizens, artists and consumers are no longer powerless and isolated in the face of the content production and distribution industries: now individuals across many different spheres collaborate, participate and decide in a direct and democratic way!" "Free culture ("free" as in "Freedom", not as "for Free") opens up the possibility of new models for citizen engagement in the provision of public goods and services. These are based on a 'commons' approach. 'Governing of the commons' refers to negotiated rules and boundaries for managing the collective production and stewardship of and access to, shared resources. Governing of the commons honours participation, inclusion, transparency, equal access, and longterm sustainability. We recognize the commons as a distinctive and desirable form of governing. It is not necessarily linked to the state or other conventional political institutions and demonstrates that civil society today is a potent force."[16)]

16) Barcelona Culture Forum: Charter for Innovation, Creativity and Access to Knowledge 2.0.1. Citizens'

UNESCO, understandable for an international intergovernmental organization, acknowledges the aquise of international declarations and treaties, in particular in the copyright area. Consequently, UNESCO does not challenge the concept of private intellectual property and it reaffirms the validity of the three-step-test (the holy cow of all copyright regimes), which allows access and usage of copyrighted information and knowledge objects only in special cases and only when neither the normal commercial exploitation of these objects is abridged nor the rights of the authors are suspended. Again, UNESCO as a UN intergovernmental organization has to acknowledge these legally binding contracts and their rules but it becomes obvious that these regulatory guidelines are more disabling than enabling means for achieving the goals of an information or knowledge society in which everyone has appropriate access to published knowledge and the right to use it freely according to their reasonable purposes.

All this makes us wonder whether a different foundation of information ethics is needed to achieve the UNESCO goal of inclusive and sustainable knowledge societies. We suggest a new foundation for information ethics by considering knowledge and information as a commons.

The concept of *commons* (without necessarily using this word) is as old as human societies themselves, but it is an almost forgotten concept – at least forgotten in a market-driven world where the dogma of private property is the basic justification for commercializing what originally was considered a commons. Today, with the evident crisis of the market paradigm, not only in the finance markets, but also with respect to the disabling effects of commercialized information markets, with damaging effects not only for education and science and for the private consumer markets, but also for the innovation potential of the entire economy, there is a chance for a renaissance of the old idea of the commons, a renaissance of the primacy of common property rights as opposed to private property rights.

Commons refer to everything that is essential for people to survive-these are basically the commons given by nature such as air or water-, but also those indispensable for people's social and cultural development. Acknowledging the fundamental importance of the commons for survival and development, it makes sense that they cannot be claimed as exclusive private property. That does not mean that they cannot be used for private or commercial purpose. Commons are not supposed to be protected against use in special closed reservation. But they should only be allowed to be used privately or commercially when sufficient compensation is given to the public.

Commons are not a res nullius, things which can be occupied and utilized by everyone because

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and artists' Rights in the Digital Age. <http://fcforum.net/charter_extended>.

no one has rights to them. Commons are instead a res communes; they belong to all of us. This is true not only for the natural commons but also for social, cultural and immaterial k&I objects.

Knowledge as a commons is the basis for a sustainable knowledge ecology. This is a still an unusual concept. Ecology in general is concerned with the sustainability of natural resources (for instance water, air/climate, forests) by protecting these resources from overuse, and knowledge ecology aims at the same objective of sustainability. But rather than making the immaterial resources of knowledge and information a scarce good (as is necessary with natural resources) sustainability of immaterial goods can only be achieved by the opposite, by open and free access and unrestricted use.

This concept of information ecology provides an alternative both to existing commercial publishing models on the international information markets and to international copyright regulations, which, in the last 20 years, have mainly emphasized the economic impact of knowledge and information. Neither the markets nor regulation by law have taken sufficiently into account the genuine character of knowledge as a common-pool resource. Information ethics does not object to the commercial use of knowledge produced in public environments such as universities and research centers, but suggests that publishing models are only acceptable when they acknowledge the status of knowledge as a commons, allowing free and open access for everyone. This commons must be based on sharing knowledge, producing new knowledge collaboratively, and providing future generations with the same access and usage rights.

The modern theory of institutional economy, to which the economist of the commons and Nobel-prize winner of last year, Elinor Ostrom, has intensively contributed, has made an important distinction between the common pool resources and the commons. Material, natural common pools are given to all of us by nature. Immaterial pools are the results of human development and/or the common heritage of humankind. Knowledge is, of course, a very prominent pool resource. Once in the world, once made publicly available it is in principle open and free to use for everyone. In principle – in reality access to this common pool of knowledge, not to mention its free usage depends on the way knowledge is made visible (transformed into information objects in whatever media form), by whom, with what interests and how these objects are disseminated and made open for use under which conditions.

In the language of institutional economy – common pool resources only become commons when they are institutionalized. That means that rules need to be specified under which these resources can be used. The so-called riparian principle can be used as an example for the institutionalization

of a natural common pool resource (water) in order to create a commons “water”. According to the riparian principle everyone is granted the right to take the amount of water that they need, under the condition that enough water is left for others who need it as well and that the remaining water keeps the same quality as before.

The need to institutionalize pools in order to create commons reminds us of the foundation of ethics, as outlined at the beginning of this article. Humans develop their moral behavior, their beliefs, rules and values, concerning how to organize knowledge and information in those environments where they currently live and which are highly influenced by the technologies for the production, dissemination and usage of k&i. The same is true for the commons. There are not hieratic, not given by nature or by religion, but, to put it in terms of modern sociology, they are socially constructed. From an ethical point of view, ways of institutionalizing the common pool resource “knowledge” into a commons “knowledge” are appropriate when they contribute to just, inclusive and sustainable ways of living for the highest possible numbers of people.

Bringing these considerations to an end within the limits of this paper – open access, developed through science itself as a means to regain information autonomy, which has gradually been lost by the disabling mechanisms of commercial information markets, and thus to secure the basis for scientific progress and innovation in economy, can be considered for the present and in times of the Internet the adequate form of institutionalizing knowledge which has been made publicly available for free access and usage.

There is an international consensus on what the main objectives of open access are. The Berlin Declaration has made that very clear[17]:

> “Open access contributions must satisfy two conditions:
>
> 1. The author(s) and right holder(s) of such contributions grant(s) to all users a free, irrevocable, worldwide, right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship (community standards, will continue to provide the mechanism for enforcement of proper attribution and responsible use of the published work, as they do now), as well as the right to make small numbers of printed copies for their personal use.
> 2. A complete version of the work and all supplemental materials, including a copy of the permission as stated above, in an appropriate standard electronic format is deposited (and thus published)

17) <http://www.zim.mpg.de/openaccess-berlin/berlin_declaration.pdf>.

> in at least one online repository using suitable technical standards (such as the Open Archive definitions) that is supported and maintained by an academic institution, scholarly society, government agency, or other well established organization that seeks to enable open access, unrestricted distribution, inter operability, and long-term archiving.!"

There are many ways to fulfill these conditions and to serve the common purpose of open access – be it following the golden road, making knowledge publicly available primarily through open access journals, or be it applying the green road, by making knowledge objects which have already been published in commercial journals additionally available under open access principles in so called open access repositories, mainly organized by libraries.

To this day, almost 300 organizations from all over the world have signed the Berlin declaration, mostly science organizations, but also culture organizations in general. Wouldn't it be appropriate for UNESCO, with its elaborated information ethics understanding and having declared universal access as its main principle, to sign the Berlin Declaration as well?

By putting the idea of knowledge and information as a commons at the center of information ethics and at the center of a knowledge ecology, we do not intend to imply that the traditional information ethics understanding (as developed in the programmatic statements by UNESCO briefly summarized above) become obsolete, but we are convinced that, in addition to these statements, an alternative understanding of the character of k&I is needed. The character of knowledge as a commons needs to be (re)acknowledged.

The consequences of treating knowledge as a common property (which does not exclude commercial usage if appropriate compensation to the public is guaranteed) are still subject to an intensive international debate. In the commons paradigm, a new consensus needs to be achieved concerning traditional concepts such as freedom of information and science, intellectual property, authorship and the nature of knowledge objects in general. Information ethics can contribute to this discussion by providing an open discourse about these transformation processes.

9. Many open questions

Even when open access is in principle acknowledged to be the currently most adequate inclusive and sustainable paradigm for access to and usage of knowledge, there are still many questions open which need to be answered in order to achieve an appropriate institutionalization of knowledge

as a commons. Here are some of these questions, which can become the subject of information ethics discourses:

1. In which direction should the debate about intellectual property rights (IPR) go? Does it still make sense to talk about personal IPR?
2. Is there a need for new property right rules when knowledge is increasingly produced collaboratively, when both the concept of single authorship and that of the final, unchangeable work become more and more obsolete?
3. Which property rights should the public have on commons objects such as k&i? Is there a need for compensating the public when the commons "knowledge" is exploited for commercial usage, and if so, which kind of compensation is adequate?
4. Should the three-step-test, the barriers for exceptions and limitation in copyright, not be reversed into its contrary, namely that the commercial use of publicly produced knowledge should be the exception and open and free access the default? Which consequences will such a reversal have?
5. Does the public have the right to an institutional mandate in favor of open access – a mandate which not only requests but also requires scientists, in particular those who work in a public environment, to make their publications freely available in open access repositories, at least in a second version when they have been published first in a commercial environment?
6. Which rights should remain with the authors who have created new content? Are the moral rights (primarily the right to the attribution of authorship) sufficient and should an appropriate remuneration system be guaranteed? How can that be organized? Is a cultural flat rate an adequate remuneration means?
7. Is it still appropriate for the state to regulate the processes for the commons "knowledge", for instance via patent or copyright laws? Is it not up to the commoners themselves to set up the rules on how to organize k&I processes and also to have the means to enforce these rules?
8. Is there still a realistic chance for commercial exploiters of k&I to keep a profitable position in information markets when open access is the general paradigm for making k&I publicly available, at least in science and education environments? What are the appropriate business models which acknowledge the open access paradigm?