

An Ethical Perspective on Political-Economic Issues in the Long-Term Preservation of Digital Heritageⁱ

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ABSTRACT

Provides an overview of the main ethical and associated political-economic aspects of the preservation of born-digital content and the digitization of analogue content for purposes of preservation. The term ‘heritage’ is used broadly to include scientific and scholarly publications and data. While the preservation of heritage is generally seen as inherently ‘good’, this activity implies the exercise of difficult moral choices. The ethical complexity of the preservation of digital heritage is illustrated by means of two hypothetical cases. The first deals with the harvesting and preservation in a wealthy country of political websites originating in a less affluent country. The second deals with a project initiated by a wealthy country to digitize the cultural heritage of a less affluent country. The ethical reflection that follows is structured within the framework of social justice and a set of information rights that are identified as corollaries of

generally recognized human rights. The main moral agents, that is, the parties that have an interest, and may be entitled to exercise rights, in relation to digital preservation, are identified. The responsibilities that those who preserve digital content have towards these parties, and the political-economic considerations that arise, are then analyzed.

INTRODUCTION

“Heritage is our legacy from the past, what we live with today, and what we pass on to future generations” (UNESCO, 2008, p. 5). This statement is from the *World heritage information kit* published by UNESCO’s World Heritage Centre. Heritage encompasses, broadly, the natural environment, the built environment (buildings and monuments, townscapes, archaeological sites), and artifacts (books and documents, objects, pictures) (Feather, 2006, p. 4). The latter category is concerned with movable objects and is sometimes referred to as movable cultural heritage. It includes objects of all kinds, works of art, books and documents. Books and documents fall within the definition of ‘documentary heritage’, a term applied to ‘consciously created information carrying artifacts’ (Feather, 2006, p. 6). That subset of the documentary heritage which is in digital form can be referred to as ‘digital heritage’. It consists of born-digital content (content that was created and disseminated digitally) or digitized content (content that was created and disseminated in analogue format and subsequently digitized). In this paper we use the term ‘digital preservation’ to refer to the preservation of digital content as well as to the digitization of analogue content for purposes of preservation. We also use the term ‘heritage’

very broadly to include scientific and scholarly publications and data.

Awareness of the need for preservation of digital heritage has been growing for some time. In 2002 the International Federation of Library Associations and Institutions (IFLA) and the International Publishers Association (IPA) issued a joint statement on the archiving and preservation of digital information, entitled *Preserving the memory of the world in perpetuity* (IFLA/IPA Steering Group 2002) in which, among others, the following points were stated:

1. An increasing amount of information published only in electronic form has enduring cultural and documentary significance and is just as important as information published in more traditional forms.
2. The long-term availability of this information is required and action must be taken now to make this possible.

In the following year UNESCO adopted a *Charter on the preservation of digital heritage*. Article 1 set out the scope and importance of this heritage:

The digital heritage consists of unique resources of human knowledge and expression. It embraces cultural, educational, scientific and administrative resources, as well as technical, legal, medical and other kinds of information created digitally, or converted into digital form from existing analogue resources. Where resources are “born digital”, there is no other format but the digital object.

Digital materials include texts, databases, still and moving images, audio, graphics, software and web pages, among a wide and growing range of formats. They are frequently ephemeral, and require purposeful production, maintenance and management to be retained.

Many of these resources have lasting value and significance, and therefore constitute a heritage that should be protected and preserved for current and future generations. This ever-growing heritage may exist in any language, in any part of the world, and in any area of human knowledge or expression. (UNESCO, 2003)

Article 9, “Preserving cultural heritage” emphasizes the universal value of the digital heritage:

The digital heritage is inherently unlimited by time, geography, culture or format. It is culture-specific, but potentially accessible to every person in the world. Minorities may speak to majorities, the individual to a global audience.

The digital heritage of all regions, countries and communities should be preserved and made accessible, so as to assure over time representation of all peoples, nations, cultures and languages.

Preservation of heritage seems to be inherently “good”. In most publications on the preservation of digital content this is either stated explicitly or implied. Explicit recognition of such preservation as being in the public interest is demonstrated by the language used in a policy

document published by the National Library of New Zealand, *Creating a digital New Zealand* (2007). The priorities, outcomes and actions set out in this document have a strong moral flavor, for example the aim “to discover and cherish our languages, cultures, histories and national identity” (p. 6), to protect traditional knowledge (p. 21), to maintain cultural memory (p. 25) and to strengthen the public domain (p. 31). The preservation of the heritage of communities and nations, their traditions and cultural memory is, at face value, a good thing, as is digitization, since it helps to combine the twin goals of preservation and access without the difficult trade-offs we have to face when dealing with analogue materials, such as rare and fragile manuscripts, books films, audio recordings. For example, Lor and Britz (2004b, p. 543-544) argued that web archiving serves a societal goal and that the web archive so created can be regarded as a common good.

Everything is not always as simple as it appears to be at first sight, especially when we consider the application of rapid technological innovation. We illustrate this by means of two hypothetical cases. The first deals with the harvesting and preservation in a wealthy country of political websites originating in a less affluent country. The second deals with a project initiated by a wealthy country to digitize the cultural heritage of a less affluent country.

HYPOTHETICAL CASE #1: PRESERVATION OF POLITICAL WEBSITES

In the country of Povertopia the ruling party has been in power for over twenty years. Every five years elections are held. They are rigged to ensure that the ruling party stays in power. Nevertheless some opposition parties are tolerated to give the appearance that the regime is quite democratic and when an election is held these parties are given some freedom to put forward

candidates and promote their platforms. During the electioneering period, half a dozen new websites appear in which the small parties try to put forward their ideas and appeal to voters. Predictably, however, the ruling party wins again with an overwhelming majority. Some of the opposition politicians are arrested. Their offices are raided and their websites are closed down. That's the end of them, for now.

But such opposition websites are of interest to scholars in the wealthy nation of Opulentia who like to study the political systems, processes and communications in other countries. Knowing that these websites will not be long-lived, scholars at one of the universities in Opulentia arrange to “harvest” these websites, downloading their pages at regular intervals during the election campaign, so that they will be able to study them later. The websites may provide useful material for PhD students in political science, media studies, gender studies, etc. This is done without obtaining the permission of the owners of the websites. It is felt that it is not feasible to obtain prior permission. The website owners are too busy campaigning to reply to requests for permission. By the time their answers arrive, if at all, it will be too late.

The archived material is made available on a workstation in the library of the University for access by bona fide scholars and students. One of the researchers later turns out to be employed by the embassy of Povertopia. He collects images of opposition figures and supporters. These images are later used to round up and imprison some of these people. Is this a far-fetched example? We leave it for the reader to decide. But it does raise some important ethical questions, such as:

- Is it right to download websites from a poor country such as Povertopia without first

obtaining the permission of the website owners?

- Would it be better to ask for permission first, or at least notify the appropriate parties first, even at the risk of losing the material?
- Does it make a difference if this is done for the sake of science and scholarship?
- Who should decide who may have access to the material?
- Can we argue that by downloading the websites we are actually helping the people of Povertopia to preserve a part of their national heritage that they are unable to preserve themselves?

That such questions are of real interest was demonstrated by the Political Communications Web Archive Project, undertaken by the Center for Research Libraries (CRL) in Chicago with funding from the Andrew W. Mellon Foundation, which studied both technical and curatorial aspects of the preservation of copies of the ephemeral websites of political manifestos and statements by political groups in developing countries and Western Europe (Limb, 2004; Lor & Britz, 2004b). This project addressed *inter alia* the important legal issues relating to intellectual property, which are not specifically addressed in the present article. Ethical issues such as those implied by the above questions were also addressed in the project (*Political communications web archiving* 2004). Much more recently a rather similar case is presented by Baker (2011), who discusses ethical implications of the donation of the Twitter Company's entire archive of Tweets to the Library of Congress.

HYPOTHETICAL CASE #2: A COOPERATIVE DIGITIZATION PROGRAMME

Library O in the wealthy country of Opulentia proposes to enter into a partnership with Library P in Povertopia, a poor developing country, to digitize the archives of a liberation movement which fought the former colonial power to gain independence for that country. The digital files will be made available on the Internet. Library O puts forward the following benefits:

- a) It will provide Library P with the latest digital scanning equipment and train Library P's staff to use it. Library P will be able to retain the equipment for its own use after the project ends.
- b) Library P will have staff trained in digitization procedures.
- c) The archives of the liberation movement will remain in Library P.
- d) The archives of the liberation movement will be digitized, which will help in preserving it because, once digitized, the original documents will no longer need to be handled so often.
- e) Library P's building is not well maintained and its collections are not well protected against natural or human threats. If material should be stolen or a catastrophe should hit Library P and destroy the archives, the content will not be totally lost to posterity because there will still be the digital archives.
- f) Scholars and students served by Library O will be able to access the digitized archives free of charge for scholarly research on the liberation struggle in Povertopia. This will promote a better understanding of, and respect for, that country.
- g) Scholars and students everywhere will be able to access the digitized archives for a modest fee, which will generate funds for further digitization projects.

- h) Scholars and students served by Library P will be able to access the digitized archives free of charge.

This seems to be quite a fair deal. In fact, we sent this hypothetical case (in a slightly earlier version) to a convenience sample of 33 librarians in developing countries and asked them some questions. The main question was: “As the Director of Library P, would you accept this proposal?” Ten responded, on condition of anonymity. While this was not intended as a rigorous study, it does suggest some insights. Seven of the ten respondents answered “Yes”. Here are some of their comments:

- “Since I am in a poor country I have to say 'Yes'.”
- “For sure.”
- “I think it's a fair deal where everyone benefits.”
- “Materials in developing countries are already getting lost at an alarming pace.”

The “yes” group includes one very highly developed country whose perspective was providing rather than receiving assistance. The three respondents who answered “no” showed a greater level of legal and political awareness. They raised the following issues:

- Copyright: the partner in Opulentia would hold copyright on the digital files, have full ownership, do whatever they wished with them, and charge access fees, with no royalties going to the local partner.
- Lack of full, prompt or clear disclosure of contract conditions.
- More partnership was needed; local institution should not be seen only as a “beneficiary”

but as a full partner.

- Terms of the proposal were limited to short term benefit to the library in Povertopia (equipment of limited lifespan, training rapidly obsolete if not refreshed) in exchange for a perpetual right for Opulentia party to exploit content commercially.
- Inability of parties in Povertopia to make full use of the content they have digitized as part of a project. [For example, they may lack the appropriate scholarship, scholarly resources or academic programmes.]

MORAL CHOICES

These two hypothetical cases illustrate the contention of Hamelink (2000) that the development and application of technology, and the use of its applications, imply moral choices:

Whatever breathtaking advances technological innovations offer, they are never without trouble. Technology inevitably brings great benefits and awesome risks. This essential ambivalence raises the challenging question about human governance of technological development. Can a balance be struck between progress and plague? What choices should be made to shape technology towards humanitarian aspirations?" (Hamelink, 2000, p. 1)

The cases also suggest that issues of resources and control – political-economic issues of asymmetric power relations among nations, particularly rich and poor nations – need to be considered (cf. Pickover 2008). Following Woods (2001, p. 1), who uses the term ‘political economy’ to refer “the changing relationship between political systems ... and economic forces”,

we understand the political economy of information to refer to the impact of interacting political and economic forces on the creation, dissemination and availability of information, especially, their impact on the flows of information between developed and developing countries. These can be seen as the international dimension of the ethical issues that have to be considered in respect of individual and collective rights.

Aggravating the problem is the sense of urgency encapsulated in such expressions as ‘digital dark ages’, used as early as 1997 by Kuny (1997) and most recently in a report to the European Union (Niggemann, De Decker, & Lévy, 2011) which offers a choice between a new Renaissance and a digital Dark Age (p. 7). In scientific circles there is a similar concern about the potential loss of research data (Burton, 2007). The expression ‘digital dark age’ dramatizes the threat of large-scale loss of heritage and research data and suggests that ‘something has to be done, quickly’.

In considering moral problems, ethical theories offer various approaches. For example, virtue ethics is primarily concerned with the individual making the choices, based on certain virtues, rather than with their consequences for those affected. Strict utilitarian ethics is concerned with consequences and emphasizes the greatest good for the greatest number of people. The deontological approach emphasizes rights and duties, but does not always take into account the consequences of moral actions (Lor & Britz, 2004a, p. 17-18). In this paper we adopt a broadly rule-utilitarian approach to moral decision-making, where we understand rule utilitarianism as an approach which adopts

...certain rules that can guide our actions aiming to ensure that it will lead to a common good for society. It ... asserts universal principles ... but acknowledges the fact that the application is codetermined by the situation. (Lor & Britz, 2004a, p. 18)

In applying a rule-utilitarian approach to decisions on a common good (as would be created by a program to digitize heritage materials, preserve born-digital materials, or archive websites) we need a shared moral foundation, one based on a universal moral consensus – or one which is as nearly as possible universal. This implies a consensus inclusive of East and West, and of developed as well as developing nations, of poor rural communities as well as academic elites. Lor and Britz (2004b, p. 544-545) proposed that such a shared moral foundation be based on the twin principles of justice and human rights. The three core principles of justice distinguished by John Rawls (1971, as paraphrased in Lor & Britz, 2004b, p. 546) are relevant here:

1. All people are of equal value and should be treated as such.
2. A person ought to get what is due to him/her. Although this may differ from person to person and from context to context, it is considered unjust when people get or undergo something they do not deserve.
3. Although all people are of equal value, justice also recognizes the inequalities between people in certain cases, provided that differences in the treatment of people should not violate the first principle of equal value.

For purposes of application such general principles of justice are commonly articulated as human

rights which can broadly be defined as just claims against someone or a society and can be seen as the protection of human dignity. Hamelink (2000) argues that the principle of human rights meets the requirement of universal validity. According to Hamelink (2000, p. 59), "...human rights provide currently the only universally available set of standards for the dignity and integrity of all human beings". As such human rights can be seen as the legal articulation of the fundamental principles of justice for example in declarative and legislative statements such as the Universal Declaration of Human Rights (UDHR) and national bills of rights. A number of human rights were identified by Lor and Britz (2004b, p. 255) as relevant to web archiving. We expand on them here for analytical purposes. Since we do not wish to contribute to 'human rights inflation' we put them forward essentially as corollaries of the more basic information-related human rights that are found in the UDHR. It is hoped that the finer distinctions that are made here will be useful in relation to digital preservation and may be of interest in the broader context of information ethics:

- A. The right to personal autonomy (cf. UDHR Article 1: "*All human beings are born free and equal in dignity and rights*")
- B. The right to life, liberty and security of person (UDHR, Article 3)
- C. The right to privacy (cf. UDHR Article 12: "*No one shall be subject to arbitrary interference with his privacy...*")
- D. The right to reputation (cf. UDHR Article 12: "*No one shall be subject to ... attacks upon his honor and reputation*".)
- E. The right to freedom of expression (cf. UDHR, Article 19: "*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 through any media and regardless of frontiers.”)

- F. The right of access to information (cf. UDHR, Article 19: “...*freedom ... to seek, receive ... information and ideas...*”). The right of access to information is a rather complex notion and implies also the accessibility of information as well as access to correct and accurate information.
- G. The right to freedom of communication (cf. UDHR, Article 19: “...*freedom ... to ... impart information and ideas through any media and regardless of frontiers.*”)
- H. The right to freedom of association (cf. UDHR, Article 20: “(1) *Everyone has the right to freedom of peaceful assembly and association; (2) No one may be compelled to belong to an association.*”)
- I. The right to participation in the cultural life of the community (cf. UDHR, Article 27(1): “*Everyone has the right freely to participate in the cultural life of the community...*”)
- J. The right to share in the benefits of arts and sciences (cf. UDHR, Article 27(1): “*Everyone has the right... to enjoy the arts and to share in scientific advancement and its benefits.*”)
- K. The right to control the dissemination and use of created or authored work, including the right to maintain the integrity of the work (based on UDHR, Article 27 “(1) *Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author*”; read with Article 17: “*Everyone has the right to own property alone as well as in association with others; (2) No one shall be arbitrarily deprived of his property*”); the emphasis here is on ‘moral interests’.

- L. The right to recognition as author or creator of a work (based on UDHR, Article 27, as above, read together with UDHR, Article 12)
- M. The right to own intellectual property (based on UDHR, Article 27, as above, with the emphasis on ‘material interests’).

Comprehensive as this may appear, something is missing here. The Universal Declaration of Human Rights, for reasons discussed by Mazover (2004), is concerned with individual human rights and has little if anything to say about communal or group rights. This is unfortunate when we are dealing with the cultural and documentary heritage of groups who do not have a tradition of allocating authorship, priority of discovery, or ownership of artistic and intellectual contributions, to individuals. We have therefore extended the application of certain rights somewhat to communities and groups. This is particularly relevant to the rights of communities and groups to control the dissemination and utilization of their traditional or communal knowledge and cultural expressions (K), to be recognized as the authors of traditional or communal knowledge and cultural expressions (L), and to be recognized as the owners of traditional or communal knowledge and cultural expressions and to benefit from its use (M).

The discussion that follows is structured within the framework of social justice and the identified corollary rights. We shall identify the main moral agents, that is, the parties that have an interest, and may be entitled to exercise rights, in relation to digital preservation. We then attempt to analyze the responsibilities that those who preserve digital content have towards these parties, and the political-economic considerations that arise. The parties are the following:

MORAL RESPONSIBILITIES AND POLITICAL-ECONOMIC IMPLICATIONS

The moral agents considered in this section are as follows:

1. Authors, creators
2. Originating communities
3. Rights holders
4. Holding institutions
5. Persons depicted or described
6. Digitizing or acquiring institutions
7. Users
8. Project funders

Table 1 is an attempt to summarize the information rights that can potentially be attributed to each of these eight moral agents. (Agents holding multiple roles will need to be considered in respect of each role, and their ethical dilemmas identified.) The notation in each cell is suggestive, being based on conceptual analysis of potential conflict. Thus the table is intended to serve as a heuristic device to suggest areas for investigation. However, the scope of this paper precludes a full discussion of each cell. Hence Table 1 is followed by a discussion of some selected issues affecting the responsibilities of moral agents involved in digital preservation.

Table 1: Information rights of moral agents involved in, or affected by, digital preservation

Right	Authors , creators	Originating communities	Rights holders	Holding institutions	Persons depicted	Digitizing /acquiring institutions	Project funders	Users
A Personal autonomy	X	X	x		X		X	X
B Life liberty and security	X	x	x		X			X
C Privacy	X	x	x	x	X	x		X
D Reputation	X	X	X	X	X	X	x	X
E Freedom of expression	X	X	x	x	X	x	x	X
F Access to information	x	x	x	x	x	x	x	X
G Freedom of communication	X	x	X	x	X	X	x	x
H Freedom of association	x	x	x	x	x	x	x	x
I Participation in cultural life of the community	x	x		x	x	x		x
J Share in benefits of arts and sciences	x	X	x	x	x	x		X
K Control dissemination, use & integrity	X	X	X	X		X	X	
L Recognition as author or creators	X	X					X	
M Own intellectual property	X	X	X	x		X	X	

(Legend: **X**: Yes: significant, with potential for conflict | x: Yes: basic right, no obvious or limited potential for conflict | | Blank: Not applicable)

AUTHORS, CREATORS

In principle the authors and creators of content that is preserved digitally have essentially the same rights as the creators of analogue content, for example the rights to freedom of expression (E) and communication (G), to be recognized as authors or creators of the digitized works (L), to own the intellectual property (M) and to control the dissemination, use and integrity of their work (K). Two factors render the exercise of these rights more difficult and complicate the decision making of those concerned with preservation.

The first is the nature of the digital medium. Digital content is “susceptible to manipulation, interrogation, transmission and cross-linking in ways that are beyond the capacity of analogue media” (Deegan & Tanner, 2002, p. 7). Unlike the content of printed media, digital content is easy to transcribe, replicate and alter without trace (Deegan & Tanner, 2002, p. 60). While the manipulation of digital objects in the form of “mash-ups” etc. is seen as a legitimate form of cultural expression, this does not necessarily conflict with maintaining the integrity of originals. Information professionals have a responsibility to watch over the integrity of digital collections and to combat accidental or deliberate alteration as well as plagiarism – but with the understanding that a more nuanced concept of plagiarism is needed to deal with expressions such as mash-ups.

The labile nature of digital content has been referred to as instability. However, Feather (2006, p. 12) ascribes this to the “fundamentally dynamic nature of digital documents”. This raises the possibility that, in a sense, freezing at a given point in time content that was never intended to be anything but ephemeral, distorts it. Rauber et al. (2008) point out that, just as artists may create

one-time installations that are not intended to be preserved, so “...many documents may be placed on the Web because it is ephemeral, because they are meant as a temporary statement; a comment that is never intended to be captured and be maintained for eternity.”

This brings us to the second factor: ethical issues have become more complex because the nature of authorship has changed. In the digital world there are two major types of creators, with many in between. The first type comprises authors who consciously create for dissemination, and we can reasonably expect that they will realize that their work is likely to be preserved somewhere for future use, as is the case with print and other analogue media. This clearly constitutes publication. But in the world of Web 2.0 there are also many incidental creators, creators of the second type, who post content on blogs and social networking sites in a spontaneous manner, without considering the implications, and without realizing that their posts, comments and photos may be collected by a web crawler, preserved indefinitely, and made accessible to users anywhere. Some of this material may later be a source of embarrassment to them (or to other people depicted). A case in point is the donation of the Twitter Company’s entire database of ‘tweets’ since 2006 to the Library of Congress (Baker, 2011). The magnitude of this database, which grows at a rate of 50 million tweets a day, is mindboggling. Some measures have been put in place to anonymize and time-embargo the data, but there remains a troubling potential for invasion of privacy through data-mining for research, commercial or security purposes if such manipulation of the data using powerful software enables marketers or security agencies to collate information on identified individuals.

Much of the Web 2.0 content is analogous to postcards. En route to the intended recipient,

postcards can be read by anyone who handles them. In that sense they are not *private*. But sending a postcard does not constitute *publication*. Thus the preservation of Facebook pages, Flickr pictures and Tweets risks violating the creator's right to personal autonomy (A) in the sense that creators are not able to make their own decisions about what to preserve and disseminate, to privacy (C), reputation (D) and, in extreme cases, life, liberty and security (B) (cf. Lor & Britz, 2004b). In an excellent exploration of ethical issues in web archiving, Rauber et al. (2008) have pointed out that the risks imposed by web archiving are greatly magnified by the availability of data-mining techniques and clever software that can perform very effective searches for specific persons, inter alia for use by human resources managers ('web profiling'). Hamelink (2000, p. 126) warned that digitization facilitates government surveillance. In a UNESCO-sponsored survey of the ethical implications of emerging technologies, Rundle and Couley (2007, p. 72) pointed out that modern IT systems may help in extending and democratizing access, but also pose a threat in terms of "...the potential increase in surveillance capabilities" made possible by the processing of "immense quantities of data gathered by search engines". This, they warn, could hamper the promotion of human rights. Conversely, the recent Wikileaks exposures have shown that the unauthorized dissemination of confidential information held by governments is also easy and attractive.

If the informal posting of content on social networking sites does not constitute publication, it is suggested that the use of such material for research purposes be considered in the same light as individually identifiable data about human subjects in social science research, where this is dealt with by government regulation and the codes of ethics of various professions. The Association of Internet Researchers (AoIR) has published a policy document, *Ethical decision-making and Internet research* (2002), which deals with ethical issues in the use of data obtained from the

Internet. In the field of library science, some attention has also been paid to the ethics of Internet research (e.g. Holley, 2006). Information professionals have a responsibility to devise measures that will minimize the risks posed to authors and creators by web archiving.

ORIGINATING COMMUNITIES

While the aim of a digitization project may be to promote nation-building and appreciation of cultural diversity through an understanding of the history and culture of a particular group, there are a number of ethical pitfalls in such projects (Lor & Britz, 2004a). As suggested by Hypothetical Case #2 it is important that the autonomy and dignity of the group in question be respected (A; D). Where partnerships are entered into between institutions in developed and developing countries, care must be taken to avoid-donor driven projects which are ultimately exploitative and which ignore the priorities and wishes of the recipient institution. It is important to develop an equal partnership, where the recipient institution participates in decision making on what is to be digitized, shares equally in the management of the project, and receives sustainable, long-term benefits (J) as a quid pro quo for making its heritage available. This implies that the opportunity costs of the project be considered. These are the strategic costs incurred through potentially misdirecting resources to a less appropriate strategy (Deegan & Tanner, 2002). An example would be directing the limited human resources of a national library in a developing country to a digitization project which will mainly benefit academics in the developed country when staff resources and management overheads in the recipient country might have been better spent on a program to develop community libraries, literacy or indigenous languages. This is true even if all costs of technology, training etc. are borne by a donor country. Opportunity costs are not outlays of funds but lost benefits.

Digitization programs should not lead to the ultimate retention of the original material in the donor country (K). Referring to digitization of African materials, Limb (2004, p. 150) recommends that there should be regular consultation between Western and African scholars and archivists “to ensure that the ‘fattening’ of Western repositories does not lead to a corresponding decline in visits to archives in Africa by Western scholars.”

Originating communities have a right to share in the benefits of their knowledge (J) when this is made available to other parties. Exploitation can result from asymmetrical relationships. Limb (2004) cites patents taken out by western companies on drugs derived from indigenous medicine. Conversely, digitization of ancient texts documenting indigenous knowledge is being used by the government of India as a strategy to combat ‘biopiracy’ which occurs through the patenting by pharmaceutical companies of traditional medical knowledge (Brahmachari, 2011). There is no moral objection to the South-North flow of information as such. On the contrary, Britz and Lor (2004) have argued, on the basis of the principle of distributive justice, that developing countries also have a moral responsibility to disseminate their heritage to other countries.

In partnerships with developing countries, respect for cultural values and traditions affecting access is essential (K). Jordan (2006, p. 32) stresses that “[r]espect for cultural sensitivity and individual privacy should be considered when selecting material for inclusion in digital collections”. The Assembly of Alaskan Native Educators (2000) has drawn up *Guidelines for respecting cultural knowledge* for a wide range of affected and interested parties, including tribal elders, authors and illustrators, curriculum developers and administrators, educators, researchers,

native language specialists and native community organizations. In Australia the *Aboriginal and Torres Strait Islander Library and Information Resources Network Protocols* (Australian Library and Information Association 2005) constitute a guide to good practice in handling materials with Aboriginal and Torres Strait Islander content, covering *inter alia* the appropriate handling of documentation relating to the intellectual property of Indigenous peoples, appropriate subject headings and indexing terminology, and the treatment of secret, sacred and offensive material. A brief section deals with digitization and the Internet, from which we quote the following passage:

Digitization provides opportunities to improve Indigenous Australians' access to historical and contemporary cultural and Indigenous knowledge materials which are currently dispersed in institutional collections across the nation.

Easier access provided by digital technologies also increases the risk of breaching Indigenous cultural protocols for the management of Indigenous knowledge and cultural materials.

Intellectual property and technology issues also introduce levels of complexity for the sustainable management of Indigenous materials in the digital domain that pose challenges for both the library and information services profession and for Indigenous communities.

Information professionals involved in digitizing the heritage of indigenous peoples have a responsibility to consult with the peoples concerned, develop a sympathetic understanding of the issues, and adopt and apply relevant policies. One area of relevance is the assignment of descriptive, structural and administrative metadata (cf. Deegan & Tanner, 2002). Two types of

metadata appear to be especially relevant: structural and administrative metadata. Cataloguers assigning *descriptive metadata* must be aware of the possibility of unconscious cultural bias. It is hardly necessary to refer to *faux pas* such as the use of the term ‘primitive art’. More subtle implications of terminology may escape the uninformed indexer. For example the use of the term “brideprice” for the southern African custom of *lobola* may give offence as it implies that it is a commercial transaction, whereas *lobola* as a cultural practice involves far more than payment (Chireshe & Chireshe 2010). Thus in assigning descriptive metadata, the target audience has to be identified and taken into account. If local community members are to make use of the digital material, the descriptive vocabulary should reflect this. Other factors must be taken into account as well. In cultures in which land is not a commodity, such as the Quinkan of the Cape York Peninsula, Australia, elders may not want locations to be identified geo-spatially (Neville & Lissonnet 2003). Community informants or contributors should be attributed, for example, the annotations added to digital objects by community elders. .

Administrative metadata refers to the data needed to manage all aspects of the life-cycle, including curation, preservation and access. Of particular concern here are rights management and conditions of access. In critically reviewing these we need to ask whether these reflect respect for traditional restrictions on who may view or hear traditional artifacts or ceremonies. Complex sets of restrictions based on age, initiation status, gender and other variables need to be recorded (Hunter, Koopman & Sledge 2002) and accommodated in a system of graded access in which different categories of users have different rights (Johnson 2001).

RIGHTS HOLDERS

Rights holders, who are in many cases not the authors or creators of the material, are generally recognized in law as having a right to own intellectual property (M), to control its dissemination and use (K) and to derive revenue from it (M). From an ethical perspective this can be problematic. Copyright law can constitute a formidable barrier to digitization projects since digitization involves the making of copies. Since obtaining copyright clearance is very labor-intensive, many digitization initiatives restrict themselves to material that is in the public domain. Given the excessive term of copyright in most developed countries and (in the case of ‘orphan works’) uncertainties concerning the identity and whereabouts of copyright owners, this leaves a large tranche of the world’s documentary heritage beyond reach of those who can least afford to pay.

The ethical codes of information professionals generally promote compliance with intellectual property laws and conventions. In such codes it is held that users of digitized content should refrain from abuse of copyrighted materials. Digitizing and holding institutions have a responsibility to educate users and put in place measures to prevent abuse, without inhibiting legally permitted fair use by excessive caution. It has been argued in the library profession that “digital is *not* different” (IFLA 2000). This implies that, as a minimum, fair use of digital resources should not be more restricted than the use of analog resources. Furthermore access by originating communities should be free of charge.

However, many, particularly in scholarly circles, consider the relationship between creators, rights holders and users to have become distorted by the commodification of information. It is

thought that the migration of scholarly content from analogue to digital carriers and the growing predominance of networked digital resources have exacerbated what was already an unfair system. The rise of the open access movement must be seen against this background. In developing countries especially, open access is seen as offering possibilities for closing the gap between wealthy and poor nations through more equitable and affordable access to the world's scholarly output (Jain & Nfila, 2011). Up-to-date information is seen as critical to national development.

In this light continued support of the current intellectual property regime raises moral issues. Troll Covey (2009, p. 1), discusses the conflict around open access in terms of an epistemic regime "...comprised of two social worlds: a world where knowledge cannot be owned and a world where knowledge can be owned". Authors have an ethic of sharing. Copyright law embodies an ethic of economic right. Troll Covey's point of view is that law and ethics are out of alignment here and she exhorts librarians to resist the current system of copyright through "civil disobedience" (p. 13-14). It is beyond the scope of this paper to discuss open access, about which a huge literature has grown, but it is worth pointing out that it constitutes a major theme in the political economics of North-South information flows, and provides an interesting example of a disconnect between law and what is generally perceived as morally justifiable.

HOLDING INSTITUTIONS

We refer here to institutions holding the originals of material that is to be digitized. In the case of digitization projects agreements between the holding institution and the party undertaking the digitization should be fair to both parties. The second core principle of justice cited earlier

requires that a wealthier or better informed party (whether this implies being better informed about technology or having access to more legal expertise) should not take advantage of the other. This principle (A) has implications for all aspects of the project. One aspect is the selection of materials to be digitized: when materials for developing countries are digitized, are the interests of the holding institution and country taken into account, or is the wealthier party ‘cherry-picking’ material relevant to its own country, that will complement its own collections? How international are ‘world’ or ‘global’ digital library projects? Who selects the material? Is it primarily material that holds a special interest for the library in the developing country? Does it reflect a European or an American world-view? How equal are the “partnerships”?

Another aspect is the disposal of the originals. In relations between institutions in developed and developing countries the rights of the latter to maintain the integrity of their collections should be respected. This can be seen as the institutional counterpart of the individual’s right to life, liberty and security (B). It implies a duty of care for originals held by them and respect for the integrity of their collections so that the critical mass of the generally more modest holdings of libraries in developing countries is not diminished. Agreements should ensure that they retain the original material after the digitization has been completed and that originals are not be shipped to institutions in wealthy countries on the pretext that the holding institution in the developing country lacks the resources to take proper care of the material. If this is the case, the more ethical approach would be to provide development assistance aimed at capacity building (Britz & Lor, 2004). As a quid pro quo for making their material available for digitization, fairness requires that libraries and archives in developing country be granted unlimited free access to the digitized corpus, and a copy of the database to host locally (F).

A third aspect to be taken into account is sustainability: Deegan and Tanner (2002, p. 99) point out that “[s]ustainable development and funding are needed to manage digital content effectively into the future. Without these two factors, relevant technology cannot be renewed, skilled staff cannot be retained and the intellectual, cultural and educational rewards cannot be reaped.” Scanning equipment rapidly becomes obsolescent. Workstations needed to access the digital holdings need to be replaced every 3-5 years. What will happen 3-5 years after the end of the sponsored project?

PERSONS DEPICTED OR DESCRIBED

Here we refer to third persons whose portraits appear in digitized material, or whose activities and attributes are described or discussed in the digitized material, particularly if they are recognizable and if the depiction can give offence to them or their family (C; D). This is sometimes restricted to living persons. The issue is especially sensitive if the individuals concerned were not aware of, and had no say in, the release of the information (A) (Anderson 2005, p. 29). Jordan (2006, p. 33) refers to the need for “[p]reserving respect for individual and family privacy” and urges caution when including items in digital collections “which may violate individuals’ privacy or the privacy of named or depicted people’s living descendants”. The principles referred to earlier, in the discussion of incidental creators who post content on blogs and social networking sites in a spontaneous manner, are largely applicable here as well.

Images or video footage of demonstrations and other protest activities may be used to prosecute participants and may have very severe consequences for persons who can be identified (B).

Information professionals therefore are morally accountable and have a responsibility to prevent such harm. Various measures, such as time-limited embargoes, restriction of access to accredited researchers and software-supported means of anonymizing data, can be considered for this purpose (cf. Rauber et al., 2008; Baker, 2011).

DIGITIZING OR ACQUIRING INSTITUTIONS

When engaged in digital preservation activities, information professionals have a responsibility to their institutions to ensure ethical decision-making on all aspects of digitization and preservation, for example, applying professional, non-arbitrary and non-biased criteria to the selection of material to be digitized and preserved (Baker, 2011), the adoption of standards, judicious and principled deployment of resources, and the selection of bids for hardware, software, and services. This is of course true for any heritage project. It is the professional duty of information professionals to take a long-term view and eschew flash-in-the-pan prestige projects which constitute a big temptation especially in national and international projects with a high profile, where politicians or donors want quick, spectacular, results.

Ethical procedures are also applicable to the appointment of staff. Bearing in mind that much of the work in a digitization project is of a routine nature, project managers have a responsibility to ensure fair conditions of service for students, interns, and persons in assisted or sheltered employment. If digitization work is carried out in the country of origin or outsourced to developing country an ethical stance requires that “sweatshop” labor not be used.

One way to finance digital projects and ensure longer-term sustainability is by marketing the

digitized material. This may imply charging fees, or selling portions of the material to commercial publishers while making it available free of charge to users affiliated to the institution. This raises ethical issues, particularly when the institutions are supported by public funds (Limb, 2004).

PROJECT FUNDERS

In most respects organizations providing project funding can be seen as having similar rights to the digitizing or acquiring institutions referred to above. The points made in the previous section concerning standards, deployment of resources, and tenders apply here too. But by virtue of the fact that they are able to provide funding or not, organizations such as charitable foundations that provide funding for digital preservation projects are in a position to exercise considerable influence on the scale, scope, emphases, conditions and technical details of such projects. It should be noted that wherever major funders enter a scholarly field, they have the potential for disturbing its equilibrium, for example by focusing activities in accordance with the interests of key benefactors, who are accountable only to themselves. An example is the health care interventions of the Bill and Melinda Gates Foundation (McCoy et al. 2009). Thus the autonomy of foundations (A) can be a source of ethical conflict.

There appear to be two further areas with particular potential for ethical conflict. First, to what extent do project funders have a right to control the dissemination and use of the digital corpus that they have made possible (K)? Does the provision of funding entitle them to control distribution and use? Since the reputation and financial interest of the funding body may be at stake, it can be argued that it has a right to maintain the integrity, and control of the product. Such a stance can create an ethical tension between the claimed rights and economic interest of

the funding body and the rights and interests of authors, originating communities or persons depicted or described. Second, does the project funding organization acquire a right of ownership (M) of the digital corpus that has been compiled with its financial assistance, and if so, how does this right relate to those of the other moral agents? Here conflicts may arise that are similar to those noted under digitizing/acquiring organizations.

USERS

If no access is intended or possible, ever, preservation has no point. The ultimate purpose of preservation is access, now or in the future. This introduces a time dimension, as information professionals have responsibilities in respect of users immediately, in the short term and in the distant future. In the context of heritage we refer to the latter as ‘posterity’. A question to be considered is whether access is to be provided to users in a specific institution, locally, nationally or world-wide. We say that we preserve digital heritage for posterity and humanity, but ultimately usage is through the eyes, ears and fingertips of individuals.

Information professionals are responsible to users to provide them with authentic content (F). *Authenticity* must be distinguished from *authentication*. Authenticity is concerned with “reliability over time” (McKenzie, cited in Deegan & Tanner, 2002, p. 185), while authentication is mostly used in the context of identifying persons who have permission to access digital data. Authenticity requires that only the best version of any given work be digitized. Anderson (2005) cites the example of an eminent US university which, to avoid copyright issues, digitized an inferior edition of a book because it was out of copyright. The problem is that users of the

digitized collection will assume that this is a good edition because of the high reputation of the university which scanned it. This could lead to errors in user's work (D). We also have a responsibility to users (as we have to creators) to ensure the *integrity* of the content. As noted earlier, digital content is 'fragile'. It is therefore important to ensure that care is taken in the digitization process, for example, not to omit pages, figures, or appendices when digitizing printed books, and to provide metadata detailing the state and completeness of the original. Creators, too have a responsibility for the integrity for their work, for example by providing good quality metadata.

Note that this emphasis on authenticity and integrity is in conflict with the idea of "anything is better than nothing", which motivates some digitization projects. As in the case of inappropriate book donations to developing countries, such an attitude is ultimately a form of disrespect – vis-à-vis creators, the originating community, and users.

The right of access to information (F) implies a responsibility on the part of information professionals to provide free or affordable access to the digital content. Limb (2004) states that librarians have a professional responsibility to defend freedom of expression (E) and access (F) by combating censorship and promoting open government. The right of access to information implies equal access to users regardless of demographic and economic characteristics and regardless of where they reside – after all, this is what networked digital resources are for. This right also implies that measures be taken to provide access to users with special needs, e.g. the visually impaired (cf. Anderson 2005, p. 22). The Web Accessibility Initiative (WAI) of the World Wide Web Consortium (W3C) provides important guidelines for Web accessibility (Web

Accessibility Initiative, 2011).

The Web contains huge amounts of inaccurate and misleading information. When the web is archived, such content is archived too – and should be, if the digitized content is to be an accurate reflection of the society which creates it. Thus web archiving, warts and all, is in the interest of (future) historians, sociologists, ethnologists etc. This does pose a challenge: should ‘naive’ users be protected from misinformation, disinformation and hoaxes? How can such ‘protection’ (B) be reconciled with freedom of access (F)? Part of the answer is to be found in information literacy, especially enabling users to evaluate critically the information they find on the Internet. Librarians can also construct web pages and portals to lead users to reliable sites (Limb, 2004).

Thus far in this section responsibilities to individual users have been emphasized. We also need to consider the broader categories of ‘humanity’ and ‘posterity’, which are so often cited when digital projects are promoted. If the aim is to create a true ‘global digital library’, who will control it? Will it be a truly distributed resource or will it reside in a server in a wealthy country? What guarantee will users in the less affluent countries have that contents will not be censored or that access will not be denied for reasons of foreign policy or ‘national security’ if relations between their country and the country holding the digital content should deteriorate?

A similar question arises in respect of born-digital content, for example, e-journals and e-government publications. Increasingly, these are only distributed electronically (Anderson, 2005). It is possible for publishers to cut off access to the data or withdraw items for commercial

or political reasons. To what extent can we trust commercial entities, no matter how strong they are at present, to maintain the integrity and availability of their e-publications indefinitely into the future? Even major international corporations can fail or, less dramatically, simply dispose of businesses that are no longer profitable. Reliance on the private sector is unwise in the long term. If the task of long-term preservation and access is devolved to trusted repositories such as the Koninklijke Bibliotheek, the national library of the Netherlands, which does a fine job of preserving the e-journals published by Elseviers and other major journal publishers, we can expect greater stability, but to what extent should the developing world remain dependent upon institutions in the developed world?

Finally, a critical responsibility is protecting the confidentiality of users' activities in using digital material (C). Confidentiality of users is closely tied up with freedom of expression (E) and access to information (F), since lack of privacy inhibits these freedoms.

FURTHER RESEARCH

It is in the nature of ethical reflection to be concerned with rights, duties and moral responsibilities, and with what *should be* as distinct from, and in relation to, what *is* and what *can be*. In this light we see four avenues of further research. The first is ethical analysis at the level of general ethical theory in particular as it relates to the ownership of digital content based on economic interest. In light of globalization the second would be to extend the analysis using non-Western ethical theories and critically to contrast these with the Western-oriented ethical theory which underpins this article. Currently, significant work is being done on information ethics in Africa. The African Network for Information Ethics (ANIE) was established in 2007

because of an urgent need by African scholars to reflect, from their own ethical traditions, on the very issues discussed in this article (Africa information ethics 2010). Similar discussions are taking place in other developing regions (Capurro & Britz 2010). A third avenue would be to subject specific cases and incidents to a systematic analysis of the information rights of moral agents, as suggested in Table 1 above. This could be applied, for example, to the controversy concerning the Aluka project to create a digital corpus of primary research materials relating to Africa (cf. Isaacman, Lalu and Nygren 2005; Lalu 2007; Burke 2007) and the donation of the Twitter archive to the Library of Congress (Baker 2011). The fourth avenue of investigation is empirical research into the contents of digital corpora and the uses made of them, to identify possible conflicts between the purposes and interests of the users of digital archives (as determined for example by interviewing users and analyzing their publications) and the interests of other moral agents, again using a framework such as that in Table 1. It would be of considerable interest to analyze such cases using more than one ethical approach, e.g. virtue and deontological ethics and different flavors of utilitarianism.

CONCLUSION

In this paper we have tried to provide an overview of ethical and associated political-economic aspects of digital preservation. The sheer number and complexity of the issues may appear intimidating. Certainly, they do not allow of easy 'solutions'. Referring to web archiving, Rauber et al. (2008) suggest that complex ethical issues should not stop such archiving, but that along with technical research and development, some resources should also be devoted to research on ethical aspects. It is worth recalling here the observation of Hamelink (2000, p. 6) that technological applications tend to be developed without prior consideration of ethical

implications and that humanity has a long history of denying moral responsibility for technological innovations:

The prevailing trend is to think that all possible problems can be fixed by technological means that do not require ethical reflection. All social problems are technological problems. In this frame of mind their solutions do not need any ethical reflection.” (p. 6)

Much of what is written about the rapid development of digital technology, Web 2.0 and the like appears to have been written with breathless haste and is filled with dire warnings that information professionals and their institutions must adapt or be swept away by progress. This reflects a widespread technological determinism, which is defined by Hamelink (2000, p. 8) as the “belief that social developments are determined by technological progress”. From time to time information professionals who concern themselves with the preservation of the heritage of humankind, including the digital heritage, should take a step back for reflection, so as not to allow themselves to be stampeded into technology-driven solutions to problems that have not yet been understood. Such reflection should include consideration of the ethical and political-economic dimensions of their preservation efforts.

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Footnotes

ⁱ This article is an expanded version of a keynote paper presented at the UNESCO Information for All Programme (UNESCO/IFAP) International Conference on the Preservation of Digital Information in the Information Society, Moscow, 3 – 5 October 2011.

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