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THE STATUS OF LIBRARY SCIENCE: FROM CLASSIFICATION TO DIGITALIZATION

ABSTRACT

The essay is concerned with library science as a science of the artificial. This is an area of research that has in recent decades gone through a profound change. The Aristotelian paradigm has made room for an interactive, technologically oriented applied science. This development has transformed the very concepts of book, library and information. Section 2 addresses the concept of book and the history of bookmaking. Section 3 is dedicated to the historical background of libraries. Section 4 concerns the state of the art of modern library science. Section 5 clarifies, how librarians are trained in their profession and which requirements they are expected to satisfy.

1. INTRODUCTION

Library science belongs to the class of sciences of the artificial. It is concerned with books, reading and writing. Books are a special kind of artefacts, and thus libraries as collections of these are collections of artefacts. Modern libraries contain alongside books also magazines and newspapers, as well as music and film materials. In addition to that, there are special music libraries and film libraries. In recent decenniums it has become possible to record all information, books and other texts as well as music and films into the form of CD's, i.e. compact discs. This information can also be recorded into computers, and into internet, an international electronic network of data – the World Wide Web, www. The technology behind all these innovations is based on digits, i.e. numerals from 0 to 9. It is called digital technology, which is a branch of electronic technology.

This development implies that books and libraries are undergoing a transformation unseen before. There are real books and libraries; on the other hand, there are virtual books and virtual libraries. This transformation concerns the profession of librarians as well. The competence that is presently required from librarians, exceeds by far that expected from previous generations of them. Accordingly, the training that librarians need for learning the skills that are necessary in order to succeed in the profession, is much more sophisticated and demanding than it used to be in history. Also the very concepts of library and book have changed in this process.

The method of a traditional librarian can be characterized as the *Aristotelian* one. Books are classified according to some adopted categories, and within these the authors' names determine their ordering. There are sub- and super-classes. This taxonomy helps the customers of a library to find the books that they would like to read or inspect. In modern libraries, the procedure is still observed. However, it is no longer sufficient. Many works of a given library, perhaps even all of them, can be found also in virtual space, as digitalized into electric form; in this case, we speak of *e-books* (and *e-magazines*) that are put into internet. In fact, internet has revolutionized what we understand by books and literature. This is due to the fact that one may not only read a book, but also interact with it in "the Net". What is a book, if it is no longer a closed work, a finished artefact? The identity of works becomes an open question. This raises corresponding copyright problems – which, moreover, appear to put the concept of copyright, as customarily understood, in question. Really, a *paradigm change* has taken place: we have proceeded from classifying stable books into digitalizing them – from physical things to codes. The Aristotelian classificatory approach has been complemented, or even replaced, by digitalization.

The so-called *digital revolution* can be characterized as follows: all information can be packed into digital form – not only books and other texts but also video and audio materials (images and sounds; i.e. pictures, films, speech, music). One may cooperate (play) with this material. Digital revolution has fed technoptimism; but it may also give reasons for pessimistic scenarios. What happens to libraries? What happens to books? How can we cope with the virtual world which clearly differs from the real world as well as from the imaginary worlds? We have been at home with the latter ones, but do we really master the virtual world? Can we do that? Moreover, how vulnerable are our digitalized treasures?

The following topics will be discussed below: books, libraries, library science and education of library professionals. These are put into historical context. A reflection follows as to the cultural significance of literacy. Books have always served the tasks of entertaining and educating readers. Books and libraries have also had the twin roles of research objects and research sources. Due to this, they have served science.

2. ON BOOKS

Books are, first of all, concrete physical things made of paper (or originally bast or reed; cf. the Greek word 'papyrus') and skin or some other cover material. They contain alphabetic symbols and other signs, occasionally also pictures, photographs, drawings, diagrams – something to be read or inspected. Books give information that is meant to teach and entertain readers. The titles of the books give potential readers hints as to the topics that are concerned in them. That helps

readers to identify and classify them. Books are artefacts that have been produced in order to preserve information, whether textual, pictorial or auditive. Reading a book and writing a book are complementary operations, contrary skills. It is needless to say which of these two operations is the more demanding one.

In his work *Writing. The Story of Alphabets and Scripts*,¹ Georges Jean traces the origin of books. First of all, reading requires what he calls “The Alphabet Revolution”.² Due to the invention of alphabet it was “possible to write anything at all by using only about thirty signs”.³ Before this, reading and writing had required a mastery of “a large number of signs or characters”.⁴ The roots of this revolution were the Phoenician writing system and the Greek script. In principle, all writing systems are based on the idea that speech has to be co-ordinated to signs that represent and preserve the spoken words. Words in written forms consist of signs. One may describe this physically and physiologically as follows: written words correspond to sounds that come from the mouths and throats of speakers and vibrate in the air, to be captured by the ears of listeners.

The next step in the evolution of books is characterized by Georges Jean as “From Copyists to Printers”.⁵ In order to make various works accessible to readers as well as to libraries, these had to be copied by writing the text anew. Copyists were occupied with this task in ancient times and middle ages. Copying was an invaluable albeit time-consuming activity. A revolutionary, decisive improvement was the invention of printing. This was due to Johann Gutenberg, who in 1448 printed in Mainz a book on astrology. The printing technology made it possible to dramatically replicate the copies of a book. Methods of printing improved further; see, for example, lithography since 1796, colour printing since 1880, offset-method and computer-aided printing in the 20th and 21st centuries.

Georges Jean adds further steps to the process of book manufacture: “Book-makers”, whose task is to give the finishing touch to the works under preparation, e.g. through binding,⁶ and “Decipherers”, who may be needed in order to render various ciphers readable and understandable.⁷ The task of the latter is, paradoxically, to “decipher the indecipherable”. According to Georges Jean, “the first, and surely the most inspired of all”, was Jean-Francois Champollion (1790–1832), who managed to open the hieroglyphs of the famous Rosetta Stone. One may also mention Michael Ventris, who deciphered the Cretan script, the so-called Linear B, during 1950–52.

1 Jean Georges, *Writing. The Story of Alphabets and Scripts*. Translated from the French by Jenny Oates, New York: H. N. Abrams 1992.

2 *Ibid.*, pp. 51-71.

3 *Ibid.*, p. 52.

4 *Ibid.*

5 *Ibid.*, pp. 73-96.

6 *Ibid.*, pp. 97-116.

7 *Ibid.*, pp. 117-126.

Georges Jean closes the Decipherers chapter with the subtitle “There Are Still Many Undeciphered Signs”.⁸ Among these are Linear A and the Phaistos disk; neither “has as yet given up its secrets”.⁹ “The riddle of the unsolved scripts, the brilliance of those who invented them, and the genius of those working to crack the code all continue to fascinate us”.¹⁰

In the same way as philosophers are those who love wisdom, bibliophiles are lovers of books and collectors of these. The Greek word *biblion* refers to a paper, a scroll, a letter. Closely related to this word is the title “Bible”, distinguishing an authoritative book, especially Christian scriptures in the Old and New Testament, from other, so-called mundane books. The history of translations of the Bible has been fruitful for the development of the languages into which it has been translated. Correspondingly, translations of ancient texts (Homeros, Hesiodos, Plato etc.) have furthered the world culture.

The concept of book has its typical, albeit somewhat fuzzy boundaries. There is a saying that something is “of a book’s length”, i.e., wide and large enough in order to be called a book. For instance, a distinction is drawn between novels and short stories (or *nouvelles*). Various comparisons can specify when a story forms a genuine novel, and when not. A corresponding definition task is given, when a scientific book is distinguished from a scientific article.

On the other hand, a definitely clear distinction is to be drawn between concrete books and so-called *web books*. The former ones consist of atoms and are physical things, while the latter ones are virtual and require, in order to be read, electricity. From the *mental* point of view, there are differences between the attitudes and experiences of those who are reading a “genuine book” and those who read an “e-book” – whether with the help of a reading pad, or from the internet. *Noetically* considered, there is no difference whatsoever: the same abstract content is involved in these diverging processes of reading.

However, it is possible to manipulate the contents. In this respect, internet has in fact revolutionized the very concepts of book and literature. It renders a new format for old contents. We have paper books, and we have online versions of these. Due to the latter, it is possible to consider books as open codes. This makes books interactive. We can play games with books, transform them after they have been published in the internet. This has been shown, for instance, by the young Russian writer Dmitri Gluhovski, who in 2002 published his novel *Metro 2033* as an audiobook in the World Wide Web. His story belongs to the genre of *dystopia* literature; its theme is survival of mankind in a global cataclysm. There is also a paper version of this work available in the “real world;” moreover, a video-game of the book has been developed in the internet. The latter extends the novel – and

8 *Ibid.*, p. 126.

9 *Ibid.*

10 *Ibid.*

also its readership: one may take part to that game and accordingly transform the original story.¹¹

Presently, there are over 200 millions persons in the world who are using the World Wide Web. One may wonder which effects this “virtual revolution” will have upon the cultures of reading, writing and publishing, as well as upon society and human beings in the long run.

A concrete guide to the issues of reading, writing and publishing books, to the skill of practising philosophy, and to the problem of finding books in the internet has been written by the Swedish philosopher Sven Ove Hansen: *Verktyslära för filosofer* (‘Organon for Philosophers’), published in the year 2010 (originally in 2009) in Stockholm.¹² It is a combination of textbook and reference work. Hansen’s work has not been translated into English, but it would certainly deserve that.

3. ON LIBRARIES

Traditionally, libraries are private or public collections of books or manuscripts. They are likewise places or buildings in which such collections are kept. Private persons may be collectors of books who occasionally buy or receive these and put them in any order or disorder at their home, whereas public libraries systematically organize their collections according to fixed principles. These determine the classificatory schemata that are adopted in order to place books on the shelves. This is done in alphabetical order that runs from A to Z, for each subclass.

Thus, for instance, there may be a class for books on sport, its subclasses being called according to various disciplines of sport. “Athletics” can be the name of one of the subclasses. In a sport school library, there may even be a finer distinction of this subclass, in which track and field disciplines form their respective sub-sub classes. Athletics is concerned with running, jumping and throwing, all of these having several branches as, for instance, 100 meter running, 110 meter hurdles, 3000 meter steeplechase, etc.

Classificatory principles of books vary between various libraries. In a village library, there used to be a class named: “large books”. In this case, it is not the content nor the title of the respective works that determine their placement in the library, but rather their physical size.

The word “library” stems from the Latin word *librarium* that indicates a place, a dwelling of books, a home for books (*libri*); meanwhile in Latin *liber* is book. Public libraries are communal institutions. They contain collections of books and other items that their customers can loan for reading, watching or listening pur-

11 Cf. also *Metro 2034* – Gluhovski’s own continuation of the story, www.like.fi/kyet/metro (access on 11.2.2011).

12 Sven Ove Hansen, *Verktyslära för filosofer* (‘Organon for Philosophers’). Stockholm: Thales 2010.

poses during a certain amount of time. University libraries are open for students and staff. Various organizations like schools, hospitals, firms and clubs often have book collections that stay at the disposal of their members. Some libraries contain so-called special collections, from which customers can loan documents or at least photocopies of documents, or use digital services in order to obtain these. There are also children's libraries, as well as library rooms that are dedicated to children's books.

Perhaps the most famous and legendary library in history has been that of Alexandria – a city which was founded in Egypt by the emperor Alexander the Great in the year 331 BC. The library itself was founded in ca. 295 BC by Demetrius Phalereus, a pupil of Aristotle's. This library was the largest and the most remarkable one in ancient times. It was in fact a teaching, learning and research center, that was built according to the model of Aristotle's school *Lykeion*. Alexandrian library collections consisted of approximately half a million papyrus rolls, called *bibliothekai*. Among others, the library contained Demosthenes' speeches. It did not only collect literature but also produced it. The foundations of physics, astronomy, geology, biology, medicine, mathematics, study of grammar, textual criticism and linguistics were established in this library. Kallimakhos, a Greek grammarian and poet, organized there the compilation of national bibliography.

Alexandrian library was devastated many times. *Mouseion*, the place that was devoted to research, burned down in 47 BC. Soon after that the library of Pergamon was transferred to Alexandria. It was destroyed in the civil war under the Roman emperor Aurelianus in the late 3rd century AD. Arabs conquered Alexandria in 642. Today, it is an Egyptian city.

In the present Alexandria, the famous library is experiencing a reincarnation. It was founded in the year 2002. The goal of this library, called *Bibliotheca Alexandrina*, is to promote the ideal of "Universal Access to Human Knowledge". This contains the project of digitalizing all library collections in the world, and creating an Open Content Alliance (OCA). Connected to this plan is a film archive that is under construction. The new library of Alexandria is committed to the spirit of openness, renovation of society, as well as international dialogue, tolerance and cooperation. The way from the ancient Alexandrian library to the present rebuilt Alexandrian library can be characterized as a development from clay tables to papyrus and feather, and from these to internet.¹³

Among famous libraries of the world, one may also mention two remarkable national libraries: the British Museum Library in London, founded in 1753,¹⁴ and the Library of Congress in Washington DC, USA, founded in 1800. The Congress Library contains, among others, an invaluable collection of jazz music record-

13 Cf. www.britannica.com/.../Library-of-Alexandria (access on 11.2.2011). Cf. also Hannu Pesonen, "Bittiajan ihme" ("The Miracle of the Bit Period," cf. Binary Digits), an article in the Finnish Magazine *Suomen Kuvalehti* 29, 2011, pp. 40-45.).

14 Cf. www.britishmuseum.org (access on 11.2.2011).

ings.¹⁵ During recent years, this collection has been digitalized. The Library of Congress had until recently the world largest collection of printed works, but presently it has been overtaken by the reborn Alexandrian library.

Various catastrophes like wars and earthquakes have devastated human cultural monuments, including libraries and books. Let us add a further example to the devastations that took place in Alexandria. The Austrian author Stefan Zweig in his work *Sternstunden der Menschheit* describes twelve historical occurrences that “changed the world” – as the saying goes. He devoted one of these episodes to the conquest of Byzantium that took place in May 29, 1453. This was due to Sultan Muhammad, who led the Turkish army. The catastrophe included the annihilation of innumerable and immeasurably valuable books in the libraries of that city. As Zweig says, books that contained the wisdom of centuries, the immortal richness of Greek thinking and poetry that was meant to be preserved for ever, were burnt or thrown away.¹⁶

Alongside historically remarkable libraries, there are also fictitious libraries. One of the most curious ones of these is described by Jorge Luis Borges in his work *Ficciones* from the year 1956, in the story *The Library of Babel*. It is to be noted that Borges had been director of the National Library of Argentina – an ideal profession for a writer. In the story he speaks of “a general theory of the Library”¹⁷ and of “the fundamental law of the Library”.¹⁸ Borges even axiomatizes his theory. There are two axioms: “The first: The Library exists *ab aeterno*. No reasonable mind can doubt this truth, whose immediate corollary is the future eternity of the world”.¹⁹ “The second: *The number of orthographic symbols is twenty-five*”.²⁰ Borges also addresses the problem of infinity, ending up with the claim that the Library is “*limitless and periodic*”.²¹ Indeed, this library clearly exceeds all existing libraries – and, one may claim, the imaginative ones as well.

15 Cf. Marshall Stearns: *The Story of Jazz*. Oxford: Oxford University Press 1956.

16 Cf. The chapter “Die Eroberung von Byzanz”, translation from p. 64 of that book: Stefan Zweig, *Sternstunden der Menschheit. Zwölf historische Miniaturen*. Frankfurt/Main: Fischer Verlag 1985 (1st ed. 1929). The original text is as follows: “... die Bücher, in denen die Weisheit von Jahrhunderten, der unsterbliche Reichtum des griechischen Denkens und Dichtens bewahrt sein sollte für alle Ewigkeit, verbrannt oder achtlos weggeworfen”.

17 Jorge Luis Borges, *Ficciones*. Ed. Anthony Kerrigan, New York: Grove Weidenfeld 1962, p. 81.

18 *Ibid.*, p. 82.

19 *Ibid.*, p. 80.

20 *Ibid.*, p. 81.

21 *Ibid.*, p. 87.

4. ON LIBRARY SCIENCE AND INFORMATICS

Library science is the discipline that concerns the branch of librarianship. Traditionally, this science has two basic aims, theoretical and practical. The previous one is devoted to the study of history of libraries, while the latter concerns technical organization and maintenance of libraries.

Modern library science belongs to *applied sciences*. It is closely connected to the *theory of information*, as is indicated by its former name “library science and informatics”. Presently, this area of science is called “information research”. Its aim is to inquire into the production, transmission, organization, acquisition and use of information. In logic and mathematics, information is defined quantitatively as a certain measure; the basic unit of information is called a “bit”. Unlike matter, bits do not consist of atoms. They are weightless, and they travel with the speed of light. A bit can be considered to be a 1 or a 0, and this binary representation may be interpreted in innumerable ways. Thus, in principle, all media can be transformed into the digital form.²²

Theory of information is a quantitative study that is concerned with transmission of information by signals. In order to speak of knowledge, a given piece of information has to be true and justified. Accordingly, the concepts of information and knowledge have to be kept apart. This is required by the theory of knowledge: whereas information may be true or false, truth is a necessary condition of knowledge.

From the point of view of pragmatics, messages always have a sender and a receiver. Decisive questions here concern the *intelligibility* of messages and the ability of *understanding* messages. Senders fail in their task if their messages are incomprehensible, whereas lack of understanding, as well as misunderstanding, are cases in which receivers fail. The issue of understanding is closely related to that of interpretation. *Hermeneutics* is the area in which the operations of understanding and interpretation are studied. Its results can be profitably applied to digital technology, whereas the technology that has been developed in the Media laboratories helps us in our enjoyment of audio, video and textual information. According to Negroponte, these Media Labs have brought “a deep understanding of both the human sciences and the sciences of the artificial”.²³ He also claims that the lines between art and sciences are fading: “... we are finally moving away from a hard-line mode of teaching... toward one that is more porous and draws no clear lines between art and science”.²⁴

What is called “library science” is actually a happy combination of art and science. The *art* lies in literature, in the culture of writing and reading and of preserving our literary tradition and its values. All of us, as human beings, have grown

22 Cf. Nicholas Negroponte, *Being Digital*. New York: Alfred A. Knopf 1995, p. 12 ff.

23 *Ibid.*, p. 234.

24 *Ibid.*, p. 220.

from illiteracy to literacy, because the necessary cultural skills have been taught to us. *Science*, in turn, lies in a strict, formal theory of messages, their transmission and their senders and receivers. This theory forms the meta-level to the study of reading and writing. On the other hand, the object level of library science concerns books and libraries themselves.

It is interesting to compare the present state of library science to its *pre-digital states*, especially to the last phases before the very turning point that propelled digitalization. A good example of this is a seminar in Helsinki that was held on November the 24th and 25th, 1984. Its theme was 'Libraries and Science'; the proceedings were published in 1985. The first article in the publication was by Ilkka Niiniluoto on the topics 'Library, Science and Library Science'.²⁵ According to him, the branch 'library science and informatics' has recently established itself and is searching for its identity. The main themes of his article are: interaction between libraries and science, library as a research object, levels of information research, descriptive library science, library science as science of planning, and library politics.²⁶

Niiniluoto emphasizes that a large part of libraries' books are scientific works that can be used for learning purposes; books are products of culture as well as objects of research; libraries can be seen to "constitute" science. Scientists have to learn to use library services in their teaching and research work; correspondingly, every library professional should master the basic knowledge of philosophy of science. According to a known saying, libraries are "the memory of mankind". Ever since the Babylonian, Egyptian and Greek cultures flourished, libraries have carried the written tradition forward and thus made cultural evolution possible. The tasks of modern library have expanded, because it has to take care of information services. Information is considered to be either physical, syntactic, semantic, or pragmatic. Library science belongs to applied sciences. It was professionalized when the world's first chair of library science was founded at the University of Göttingen in 1886. Already long before that, there was a textbook on this science available: Martin Schrettinger's *Versuch eines vollständigen Lehrbuchs der Bibliothekswissenschaft* (published in 1808).

Niiniluoto draws a distinction between library science and *library philosophy*. The latter is concerned with the general value premises and main goals of library institution.

Since the publication of Niiniluoto's article, 27 years have elapsed. Meanwhile, Negroponte's work *being digital* appeared in 1995. This work reported the state of the art that had been acquired until its publication. Thus, there lies a ten years progress (from 1985 to 1995) during which digital technology revolution-

25 Ilkka Niiniluoto, "Kirjasto, tiede ja kirjastotiede", in: Tuula Haavisto (Ed.), *Kirjastot ja tiede*. Helsinki: Kirjastopoliittinen yhdistys 1985, pp. 5-22.

26 *Ibid.* For the expression "science of planning", see Herbert Simon's work on the *Models of Discovery*. Dordrecht: Reidel 1977. On planning processes, see Simon's *Models of Discovery*, pp. 226 f.

ized books and libraries as well as our ways of thinking of these and handling them. Presently, we have enjoyed the technology of digitalization 17 more years (from 1995 to 2012) and begin to see its effects even more clearly than these were reported by Negroponte.

5. ON LIBRARIANS' EDUCATION AND CHALLENGES

The profession of librarianship has radically changed during the recent years. The requirement of constant training concerns all librarians – but also their customers. Lending books from a library often involves the use of computers and data bases. For library professionals, this is elementary. Presently, becoming a librarian presupposes a duly qualified examination in library science and information theory, as well as a further examination that concerns information and library services. A librarian has to master the history of libraries, the organization of data, and be able to evaluate the architecture of information.

Moreover, a librarian's studies include scientific communication and bibliometrics, planning and evaluation of web services and games, language technology and methods of data search, library services, their evaluation and improvement, as well as selling and production of data resources. The studies contain also courses on interactive media, society and culture, cultural-sociological viewpoint to the library institution, approach to web publishing, research concerning the use and the users of interactive media, expertise of library-and-information branches and leadership, experimental data search, theories of game research, the history and the present state of information and media systems.

As one may see, the program comprises technological, natural scientific, social scientific and humanistic studies. It has a thoroughly interdisciplinary character. The profession of librarianship has really been radically transformed. Traditionally, a librarian's main task, alongside serving the customers, was to classify and catalogize the works that comprised the library in which she or he was working. Classification and service are still mandatory, but the required expertise contains layers of tasks that were previously unknown. In short, library science has undergone a thorough *paradigm change*.

It should not be an exaggeration to characterize library and information specialists hard-core professionals; they have had a tough education and are expected to be constantly open-minded for the new challenges that they are bound to meet in their profession. They serve and preserve the culture of literacy. For the concept of 'culture of literacy,' see the work by Wlad Godzich.²⁷ Today's literary culture does not exclude but includes technological skills.²⁸

27 Cf. Vlad Godzich, *The Culture of Literacy*. Cambridge (Mass.): Harvard University Press 1994.

28 The source of the above report is the decree for librarians, *Kirjastoammattillisen henkilöstön kelpoisuusvaatimukset 1.1.2010-* ('Proficiency requirements for library profes-

6. CONCLUSION

The concept of book has gone through modifications; and, together with it, that of a library as a collection of physical artefacts. Nevertheless, we can still speak of books, libraries and literature – in a *concrete* sense as artefacts and buildings, and also in an *abstract* meaning as mental and conceptual contents, or in a *virtual* meaning as digitalized bits of information.

We have in fact managed to enhance our possibilities to be participants in literacy culture. We need more than ever before literary education; fortunately, that is available in plenitude. We are no longer only recipients of literature but also active actors in its production and acquisition. Moreover, our librarians are better educated and equipped than ever before.

It is possible to contrast the sciences of the artificial, such as library science, to cultural and social sciences. However, books and libraries are constituting factors in culture; and books socialize their readers. Thus, cultural and social sciences rely on literature and its availability. Books, libraries and library science enhance our possibilities of understanding foreign cultures and societies – as well as ourselves. Some scruples remain concerning our reliance on technology. There reigns a widespread *techno optimism* that is especially connected to computers, internet and expanding digitalization. New software is constantly introduced, and hardware (machines) gets replaced by new models. However, various gadgets and programs appear to determine and even dictate the way how we think and how we organize our practises of writing and reading. This development may backfire. It is true that real, genuine, physical books are still manufactured and sold in bookshops as well as delivered to libraries. A sceptic may wonder, how long these practices will continue. It is possible to publish books only in the internet and guide customers to recall these from there and eventually to print them on their own. Such a “do it yourself”-mentality is indeed widely distributed. This is unfortunate. Nothing can compensate the original enjoyment of books and reading. Buying or lending a genuine book and holding it in hands, feeling its paper and smelling its scent, turning over the leaves, and reading it are irreplaceable experiences.

A further example is the replacement of film rolls by bits. This practice may in some cases lead to unexpected difficulties. Digital copies need a secret code that functions only in limited places with special devices and within certain interval of time. The maintenance of films in archives is a risky business. If film theaters will be wholly digitalized, film projectors disappear. Digitalization projects require a translation of film copies into a new format, and this may take years to materialize. A real threat is that old collections cannot be presented at all. Furthermore, the wording on cinema (subtitles that are added into foreign films) is endangered. There is no guarantee that this would be preserved when a film is shown anew. Es-

sionals’, put forward by the cabinet of Finland since the beginning of the year 2010’; additional paragraph in 2011). Helsinki, February 3, 2011.

pecially, small languages are hard hit. Thus, audio-visual archives are confronted with serious challenges.

Indeed, digitalization belongs to the tough issues. It is not always a solution to problems but can also raise problems that require solution. A certain amount of scepticism is at place in order to mitigate exaggerated enthusiasm for technology. However, its representatives might ask the sceptics: do you really want to return to typewriters or even to feather, and to handwritten books? A suitable answer would be: of course not, but let us be sober with technology, enjoying real books as well as using digital services. As to feather, it belongs to history, but what is still recommendable is to use fountain pen while writing the first version of a manuscript. This is much more enjoyable than working under the premises of a computer. Moreover, also calligraphy can be recommended.

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