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Autor: Kaltwasser, Franz Georg

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Kontakt/Contact

Digizeitschriften e.V.
SUB Göttingen
Platz der Göttinger Sieben 1
37073 Göttingen

info@digizeitschriften.de

The Library of the Future
The Old Book and the New Media - a Case for Free Access to Information

FRANZ GEORG KALTWASSER*
Munich

Recently, a weekly journal published an article with the headline: "Who prints lives in the past."[1] Does this imply as well as librarians, who still buy printed books, only live in the past? The article reports on the American computer scientist Alan Kay, a specialist working for Apple Computers and one of the masterminds of the personal computer. The headline of the article quotes Alan Kay, who said that "anyone who prints anything lives in the past", in the sense that in the future computers geared to particularly personal needs would continuously be updated with the latest information, so that it would be pointless to have it printed instead of gaining the most relevant data at a given moment from a so-called dynamic book, abbreviated as "dyna-book".

A video produced by Apple visualized this idea by showing a professor in conversation with a pocket-book sized machine called "Knowledge Navigator". The screen showed a friendly secretary, a real software creature, gathering material from various sources for the professor's intended lecture.

Unfortunately I have not yet been in a position to use this decive myself, so I apologize to you for having had to exercise my own brains when preparing today's lecture.

The motto of my lecture is "The Library of the Future. The Old Book and the New Media - a Case for Free Access to Information". To define the term "New Media", I prefer in the context of my lecture to exclude microforms, despite their importance as part of our collections and as subsidiary media for the preservation of endangered holdings, simply because microforms are basically still books, albeit in reduced size, if only the term "book" is defined broadly enough. When talking of "New Media" today, I refer to the future possibilities of electronic data processing and its products.

By this definition, the two terms "Old Book and the New Media" reflect a fundamental problem which not only our libraries are confronted with, but society in general has to cope with in the foreseeable future. "Old Books and the

* *Paper presented at the LIBER Annual General Conference at Lisboa, June 1993. Translated from the original German by Ingrid Rückert, Bavarian State Library.*

1 *Die Zeit* No. 27, June 26, 1992.

New Media": are these hostile or friendly brothers, do we regard them as parallel, concurring or as mutually excluding each other, do they clash or rather belong to two independent worlds, or are they maybe simply two sides of one coin?

I think we have arrived at a watershed, or if you prefer, at a crossroads, where we have to decide on the future tasks of our libraries.

You may think that I exaggerate, considering that we have successfully been using electronic data processing for cataloguing our books - which are all bound to be old books one day. It is of course evident to all of us that data processing has thus become an indispensable part of our libraries, replacing our old catalogue system by a system of databases.

When strolling through my old library, I notice how it has become routine for many users to take advantage of the many different search strategies offered by the OPAC terminals. No doubt the technology of quick bytes grants them hitherto unknown varieties of access to the data pertaining to the holdings in our libraries.

In this respect, our problems nowadays arise less from the need to devise logical structures for, or from lack of knowledge how to gain access to, the databases, but mainly from the vast amount of data conventionally listed on cards, which have to be converted for data processing. Data conversion is still extremely expensive, despite the progressive application of scanning and automatic categorizing.

Electronic data processing has tremendously improved our bibliographic instruments, our old sequential catalogues being rationalized to our great advantage by online access to databases and the possible further processing of data by personal computers. To an unprecedented degree, quick information is gained by access to external databases.

Yet we must not delude ourselves that technology, or rather its adaptation by information producers and publishers is continously advancing. We are now facing the possibility that data processing does not only serve as a tool for searching information in paper form, but to a certain extent even as a substitute for books or, preferably, journals. We all are aware of certain so-called electronic journals, abbreviated as "e-journals", such as the particularly well-known "Online Journal of Current Clinical Trials" published by the American Association for the Advancement of Science (AAAS) in cooperation with OCLC. They now amount to a few dozen, among them for instance "Postmodern Culture".

If this development is accepted without question, a library is defined as modern and performance-oriented according to the quantity of "modular and integrated electronic information of unlimited access, far beyond the mere

availability of books and periodicals".[2] Yes, indeed! But where is this going to end?

Fundamentally, we librarians have to ask ourselves if we want to turn into mere information suppliers, or if we insist on additionally storing information for the future.

In this context, the most current technical device still is CD-ROM, supplying bibliographical data or full text, their retrieval being based on individual letters or on the visual recognition of letters and graphics[3] stored in simple form or in a network. CD-ROM offers many different ways of access, its use being made difficult however by the lack of standardization. Frequently the contents of CD-ROMs are simultaneously available on paper, and the printed version can be stored by libraries intent on it, albeit at twice the price. Partly, the printed version turns out to be the primary medium, partly CD-ROM and printed version are parallel copies of a database.

It is impracticable to rely on CD-ROM alone as a storage medium, considering less the aspect of the durability of the disks than the continous development of both hardware and software, which means that the old disks are going to be unreadable long before they are decayed. With regard to long-term storage, it is therefore quite unimportant if publishers only lease CD-ROM or sell them. To keep the contents of old CD-ROMs, as they are produced nowadays, available for use in the long run, we would need a continously growing number of more or less historical tools for deciphering them and simultaneously an extensive documentation on non-standardized programmes, combined with expert staff. As this would be incomparably more difficult than playing old shellac disks, this is definitely no solution for future information storage.

As a result, information would inevitably be lost, and partly even has been lost. Newspapers have reported that in American archives computerized information has already become unreadable. As Bob Wise, the chairman of the Subcommittee for Data and Information in the U.S. House of Representatives, has said: "The capability of reading historical records of the nation tends to be hampered by the intricacy of modern computers. In the national archives you can find computerized records which can no longer be read." He said that older records of this kind would be in danger of turning into a "data mixture of letters, numbers and computer symbols like the Egyptian hieroglyphs before the

2 Neubauer, Karl W.: Kolloquium CD-ROM-Netze in Bibliotheken. In: *CD-ROM-Netze in Bibliotheken*. Bielefeld 1992, p. 3.

3 Tenopir, Carol: Full Text on CD-ROM. In: *Library Journal* July 1992, pp. 50-51. According to this article, 382 of the 1030 CD-ROMs mentioned in the *Directory of Portable Databases* are fulltext databases.

discovery of the Rosetta Stone".[4] We should be greatly alarmed by such statements.

If libraries decide no longer to store for the future the information they make available to their users, either because they think it is necessary or because they are lacking the technological means, academic libraries in a great quantum leap will lose their traditional role as storage-houses of knowledge, as they have fundamentally conceived themselves. This fact has cooly to be considered, there is no way out, and we have to assess its consequences.

A first step is the necessary budget differentiation. The money spent on mediated information must necesssarily be different from the expenses for the storage of knowledge, the "acquisition" proper. Contrary to merely transitory information, which is simply part of the services offered by the library, the acquisition of information, regardless of the carrying medium, has to be defined as an investment by the authority responsible for funding the library. Please understand that this is meant to be a purely terminological differentiation without implying any value judgment.

In consequence, the Bavarian State Library has asked its maintenance authority to differentiate in the section of the federal budget provided for the library from 1993 onwards between the acquisition budget proper and funds for mere information supply. In my view, the budget is obliterated by the practice conventionally applied by libraries to register payment for mediated information, to be more precise, for CD-ROMs, in the acquisition budget. The Bavarian Ministry of Cultural Affairs has agreed to our proposal, so that from the annual budget for 1993 onwards a difference will be made between funds of real acquisition on the one hand and funds for merely transitory information, as I should like to call it.

Frequently this difference has not yet been realized, but this may well change in the future. Much more alarming and touching fundamental issues is the opinion held by certain libraries that abandoning permanent information storage by cancelling journals is less expensive than simply offering mediated information, by electronically ordering needed journals articles, if possible, or else by demanding copies from the last great libraries stupid enough not to share this view.

Apart from the fact that this may well be a miscalculation by the institutions concerned, this opinion is bound to accelerate the vicious circle which in Anglo-American institutions for quite some times now has been discussed as "Serials Crisis".

We all know that journals prices have risen more quickly than almost any other prices, and they are bound to rise even faster with a decreasing number of subscribers. In the Bavarian State Library, we have extrapolated that soon after

4 *Süddeutsche Zeitung* No 2, January 3, 1991, p. 52.

the year 2000 the entire budget will be needed for the subscriptoon to the approximately 20,000 journals which are regularly bought, so that no money will be left for the acquisition of monographs, not to mention retrospective and antiquarian acquisition.

New and even more specialized journals with a probably even smaller circulation are still mushrooming, but this can no longer go on. American libraries have protested against the development in connection with the "Serials Crisis". Under their director, Donald Koepp, the libraries of the renowned Princeton University have in a spectacular move cancelled part of the journals published by Pergamon Press on account of their inordinate pricing. As the "Library Journal" recently reported,[5] the so-called Aqueduct Action Group of American Serials Librarians (the name of the group being derived from a conference building on the campus of the University of North Carolina in Chapel Hill) in collaboration with the Association of Research Libraries and the Association of College and Research Libraries have drafted an action agenda for preventing the "Serials Crisis".

I do not know, however, if the menace of cancelling important journals and simultaneous appeals to publishers are going to serve their purpose. Great publishers of academic journals evidently see their future more and more in electronic publishing, and in a new technology which is going to outdate even CD-ROMs and their distribution.

Smart publishers propagate the idea of establishing database monopolies to offer electronc copies of data and articles for payment. As electronic copying can be more easily controlled and billed, publishers would simultaneously solve the problem of uncontrolled photocopying, which they regard as discrediting to their business. Indeed, parts of the media industry evidently intend to ask payment for any single use of an individual work.[6]

Reality, however, is turned upside down when Robert Campbell, the Managing Director of Blackwell's, Oxford, writes that "Users may be prepared to pay a charge sufficient to compensate publishers for at least the loss in subscritption revenue",[7] which is likely to rise even further in the future. If this becomes true, it will mean a stab in the back to the journal in the traditional sense.

In my view, the enthusiastic inventors have chosen the right comparison for the model proposed by them. They explain that "It is similar to the telephone

5 *Library Journal*, May 15, 1992, pp. 12-14.

6 Müller, Harald: CD-ROM in Bibliotheken und geltendes Recht, Einige kritische Anmerkungen aus der Sicht der DBI-Rechtskommision. In: *Bibliotheksdienst* Vol. 26, 1992, pp. 677-686; vide p. 685.

7 Campbell, Robert: Document Delivery and the Journal Publisher. In: *Scholarly Publishing* Vol. 23, No 4, July 1992, pp. 213-221; vide p. 221.

system which knows who has made a telephone call to whom when. The caller pays for the call and the phone company bills him for the connection."[8] The caller is the user and the called the publisher. According to this model, libraries will be reduced to the merely intermediary role of the phone company sending the bill to the user.

Technologically, this model may be realized in several different ways. It may be based on printed journals articles which by scanning the pages are subsequently stored as bit-mapped images. Being only part of an image, however, single letters cannot be retrieved electronically, and naturally the same applies to keywords taken from the text, and the like. The advantage of this system is that images and graphics can also be transmitted. This procedure is for instance applied by the company Carl Systems, Inc., Denver, for its system UnCover 2, which is based on the company's original database containing about two million titles of articles for initial search. The full text of demanded articles is ordered electronically from libraries holding the journals in question. Tulip (The University Licensing Program) established by Elsevier is meant to function similarly, with the difference that articles of certain journals will immediately be stored as images regardless of demand.[9]

Tulip is an experiment initiated in January 1992 by fourteen American universities in collaboration with Elsevier, which is about to reach its critical stage this year and will be terminated in December 1994. The articles published in 42 journals (35 by Elsevier and 7 by Pergamon) are being stored and delivered according to defined profiles to university libraries via Internet (Engineering Information, in short, "Ei", simultaneously serving as a host and as an Internet server). The universities have to pay only for articles copied from journals which they do not hold in paper form.[10]

This model is exemplified by the perhaps most widely known Adonis Project with its nice telling name. As early as in 1982 we heard that this handsome youth of Greek mythology had been reborn - for a change as an electronic vision.[11] According to the myth, young Adonis had to die soon, but he also symbolizes resurrection. And indeed, since 1991 Adonis has been available for commercial use, in the spring of 1992 with forty-two publishers (among them Blackwell,

8 Electronic Publishing: Threat or Opportunity? In *Rights: Copyright and Related Rights in the Service of Creativity* Winter 1990-91, Vol. 4, No 4, pp. 4-7; vide p. 6.

9 Burckel, Nicholas C.: Electronic dissemination of Fulltext Journal Articles. In: *College & Research Libraries News* May 1992, Vol. 53, No 5, pp. 322/323.

10 Letter from Elsevier to the Bavarian State Library dated from August 17, 1992.

11 Kaltwasser, Franz Georg: Document Supply in the Humanities. In: *Large Libraries and New Technologcal Developments. Proceedings of a Symposium held on the Occasion of the Inauguration of the New Building of the Royal Library, The Hague, 29 September - 1 October 1982*, München et al. 1984, pp. 53-70; vide p. 53.

Pergamon, Elsevier and Springer) participating together with the British Library. Articles are supplied to the final user as electronically stored images based on conventionally printed journals, either by libraries or without an intermediary.[12]

All these systems similarly charge as many steps involved in the use of information as possible. Yet I agree to publishers thinking that we here probably witness only the first steps towards a fundamental revolution of the journals system. But this development is bound to enter an even more critical stage once journals or other data will only electronically be supplied and might be subject to constant alterations.

Then, for reasons of free access to generally relevant information, libraries as well as the public must come to conclusions entirely different from the naive evaluation joyfully evoked by publishers when they compare information supply to telephone calls.

In my view the future role of libraries must not be restricted to simply being an "information broker". It cannot be in the interest of either the states or the libraries to content themselves with simply running a "telecom system for transmitting information". At least some libraries should remain responsible for perpetuating information in the future as well.

Society as a whole is greatly endangered by the commercialization of information, as we all may lose free access to information. Particularly Third World countries will suffer from a growing knowledge gap.

Moreover, we are threatened with a collective "loss of memory" once the - commercially oriented or just thoughtlessly accepted - "visions" of permanently changing databases as storehouses of knowledge will have been realized, as they may be updated in seconds, at the price of "forgetting" the intermediary steps, the historical stages of evolutionary growth.

We usually learn from our mistakes only after having realized their bad effects, but maybe we should try from the beginning to avoid certain mistakes, which may clearly be anticipated, instead of waiting for our users to ask for knowledge which had been available before it was "dynamically" obliterated and forgotten.

Let us also bear in mind that in the context of this situation institutions of learning, such as academies or universities, might independently from conventional libraries try to establish their own information networks.

Alan Kay's "dyna-book", which seems to be such a convincing idea at first sight, represents a new attitude expressed by the judgement that "Anyone who prints, lives in the past". But is this really a new concept considered in all its consequences, or is it merely an uncritical and enthusiastic response to the possibilities offered by technology? This attitude finds expression not only in the

12 Campbell, Robert: Document Delivery and the Journal Publisher. In: *Scholarly Publishing* Vol. 23, No 4 July 1992, pp. 213-221.

concept of the "dyna-book" but is also noticed when the problems connected with CD-ROMs are reduced to the difficulty of a non-pollutive "waste disposal" of CD-ROM disks as "special refuse".[13]

Such an attitude, if it is the result of deliberate reflection, sees knowledge in constant flux, considering as relevant only the latest information, to sum it up in the sentence (falsely) attributed to Heraclitus: panta rhei, there is permanent flux.

If this attitude is going to prevail on a great scale, we will witness a tremendous cultural hiatus. Books can be characterized as static and permanent. At least this is intended by many authors, even if their ungreateful public in many cases consigns them to oblivion. To us, old books have always been indispensable witnesses of our ancestors whom we seek to understand for our own benefit.

Up to now, our cultural evolution has been based not only on language and its visual representation by signs, letters, or, in a broader sense, even by bits and bytes, but also on the durability of documents fixed on stone, clay, papyrus or parchment as a roll, a codex, or a book. This is not only a subsequent historical interpretation but was intended right from the beginning. Our cultures, the Jewish, Christian, Islamic, and other cultures as well, are founded on the book and characterized by the sometimes almost morbid urge to perpetuate, and, if necessary, even to reconstruct the precise formulations of both divine revelation and individual thought.

The "dyna-book" symbolizing the concept of constantly changing information in clinging to the term "book" only by nostalgia, or maybe with regard to the superficial resemblance that the pocket book invented by Aldus Manutius is as easily portable as the future personal computer, which, as Alan Kay puts it, we are going to "weave into our T-shirts" one day.

We notice that, as a durable medium for perpetuated information, the book in the real sense of the term, including journals, has to face competition by the new media.

Asking ourselves how artists, whom we consider to be more acutely aware of changes in our society, feel about this phenomenon, we are surprised to see how fascinated they are even nowadays by the book in particular as a medium for artistic expression. Anselm Kiefer, for instance, has not only cast in lead an entire library with reference to Mesopotamia, where libraries have originated. He also uses the real book, the pages that can be turned, as a medium for his artistic concerns. In the Bavarian State Library we recently documented how in the twentieth century artists have recurred to the book in an exhibition called "Papiergesänge" (Paper Songs), which means book art in the twentieth century,

13 Reinitzer, Sigrid: CD-ROM-Netze in Bibliotheken. In: *ABI-Technik* 12, 1992, pp.138-140; vide p. 138.

press books, painters' books, artists' books.[14] The exhibition conveyed the heightened sensibility of artists concerning the book, and simultaneously the vigour, even self-reliance inherent in the book, which naturally adapts itself to artistic purposes. If this exhibition, however, is taken as a farewell song to the book, it is a finale furioso to celebrate an age when the book disseminated and perpetuated ideas and knowledge.

Whichever way you take it, the artistic interpretation of our subject is as ambivalent as the Delphic Oracle, and we must assume our own responsibility for our thoughts and deeds.

The fact that the book, which for centuries, even for thousands of years has been the exclusive preserve of our profession, is no longer uncontested, represents the most vital challenge for us librarians in our times and in the near future. New technology has essentially changed the dissemination of information particularly in fields where libraries have always been active.

To an unprecedented degree, a vast amount of easily manipulated information is being electronically stored and made accessible via full-text databases and the electronic journals mentioned above. Attention must particularly be focused on the e-journals, considering that the term "journal" in reality no longer applies to them. A journal is defined by, and recorded according to, annually compiled issues, which as a rule comprise several articles. This is no longer true for the electronic journal, which may, if at all, be defined only by the articles contained in it and recorded correspondingly. Basically, these journals can be summed up as a number of electronically stored small monographs. As a result, the periodical, up to now the preeminent source of academic research, is about to disappear.

Evident advantages of this tendency consist in the speedy availability of new information, the tremendous variety of access via keywords, for instance, and possibly a reasonable price once a far-reaching network between databases, suppliers and users will have been built up as an infrastructure. To some, this also promises a solution for the "Serials Crisis".

In this field, technology is likely to advance even further. It is conceivable that texts, to be more precise, academic texts, will be linked to moving images and spoken language. Then we will of course be even further removed from the traditional journal to face an entirely different medium for information supply.

The libraries of the Massachusetts Institute of Technology (MIT) have recently set up a task force to focus on the problems connected with the new electronic journals. At the moment, the agenda issued by this group probably is

14 Hernad, Béatrice and Karin von Maur: Papiergesänge. Buchkunst im zwanzigsten Jahrhundert. Künstlerbücher, Malerbücher und Pressendrucke aus den Sammlungen der Bayerischen Staatsbibliothek München. München 1992 (Bayerische Staatsbibliothek. Ausstellungskataloge; 60).

the most comprehensive analysis of problems that are likely to arise from the new media in the future. You may understand that in my lecture I will refrain from enumerating all the aspects considered by these libraries, from acquisition to cataloguing and the availability of the data concerned. One of the main aspects discussed by the MIT task force was the question of permanently archiving data.[15] In my opinion, the perpetuation of information is indeed one of the paramount issues we have to analyse.

For this purpose, our profession has the vital task of defining anew how information supply and information storage will be combined in an age of tremendous technological possibilities.

We have several choices: On the one hand, libraries might want to remain institutions for the collection and supply of books, the old books we are already holding and the new books which despite all Casssandra's warnings will of course be published for many subjects and needs in the future as well. If we simultaneously leave contemporary technologcal information supply to separate new institutions, libraries might develop a growing affinity to museums.

On the other hand, we might prefer both to collect books and to provide transitory information within the same institution. This option is most widely practised, but in my view this is an unpremeditated and unconvincing solution. To put is bluntly, a library relying on this compromise is bound to be transformed into a modern information broker with an additional nostalgic department of old books. But, as these are two different ways of providing information, this is no solution for the future.

But finally, we must try to find a common denominatior to combine the old and the new tasks not only superficially but in a convincing way. Possible solutions must be based on the key concept that it is not enough merely to supply electronically conveyed information. We must in addition preserve information regardless of its medium for the future as well.

Basically the same idea was formulated at the 10th Annual Conference of Research Library Directors on the subject of "Research Library Delivery of Electronic Information: The Performance and the Promise", which was organized by OCLC in Dublin, Ohio, on March 8 and 9, 1992. The final conference speaker, Professor Robert M. Hayes (Professor Emeritus, Graduate School of Library and Information Science, University of California at Los Angeles) emphasized that all kinds of institutions might make electronic data available for use, "But only libraries can ensure that the published record of the past will be preserved. If libraries forfeit their roles as collectors and preservers

15 Report of the Electronic Journals. Task Force MIT Libraries. In: *Serials Review* Vol. 18, No 1-2, 1992, pp. 113-129.

of knowledge, we will have lost library values, lost our role in the society, lost our soul and our birthright."[16] Strong words indeed!

In detail, this task can only be tackled after initial discussions by cooperation between publishers, academics and librarians, Preliminary talks have already taken place between librarians and publishers who feel responsible for, and are concerned about, keeping the links of the scholarly communications chain intact.

On an international level, the IFLA section on Acquisition and Exchange encourages such discussions among libraries. During the IFLA conference at Stockholm in 1990, a workshop called "Will the chain break?" chaired by Ulrich Montag, the experienced head of the acquisition department of the Bavarian State Library, focused attention on the financial causes of the "Serials Crisis", proposing to rely on less expensive, publicly funded information networks.[17] During the IFLA meeting at Barcelona this year, the workshop "New ways of information delivery and their impact on libraries" intents to discuss as a related topic the consequences of abandoning printed paper as the prime medium for information.

These problems were also analysed at the congress "Knowledge for Europe: Librarians and publishers working together" organized by the European Foundation for Library Cooperation (EFLC) in collaboration with the Working Group of European Librarians & Publishers (ELP), which took place in Brussels from November 11 to 13, 1992.

Moreover, an "IFLA Permanent Committee for contacts with Publishers and Booksellers/Information Brokers" will be founded to establish a group of librarians ready for future talks with publishers and booksellers, who have fortunately become more and more interested in such discussions.

In Germany as well we have initiated talks with publishers to share future responsibilities in this matter.[18]

These efforts are basically stimulated by the idea that the presently available *distribution* channels, from CD-ROMs to databases for the exclusively electronic storage of journals, must be combined with permanent and generally accessible ways of *archiving* unmanipulated information.

16 Electronic Information: Narrowing the Promise / Performance Gap. In: *OCLC Newsletter* No 196, March/April 1992, pp. 17-24,; vide p. 23.

17 Will the Chain Break? Differential pricing as part of a new pricing structure for research literature and its consequences for the future of scholarly communication. Ed. by Ulrich Montag. München 1992 (IFLA Publication; 61).

18 Montag, Ulrich: Informationsvermittlung und/oder Bestandsaufbau. Erwerbungsprobleme wissenschaftlicher Bibliotheken im beginnenden Zeitalter elektronischen Publizierens. In: *Zeitschrift für Bibliothekswesen und Bibliographie* 37, 1990, pp. 494-503. Cf. also by the same author: Verdirbt CD-ROM die Preise? In: *Börsenblatt für den Deutschen Buchhandel* 159, No 4, January 14, 1992, pp. 24-27.

Some of these concepts are about to be realized now. We have been told, for instance, that the "Online Journal of Current Clinical Trials", instead of remaining an exclusively electronic journal, is going to be annually supplemented by a microfiche edition. Apart from these cursory beginnings, various other aspects must be taken into account for archiving: For instance, in view of the dynamic structure of electronic data supply, it is extremely important to differentiate as carefully between the altered versions as between different editions of a book. Moreover, the articles or basic units, whatever they will be called in the future, must be suitable for reference. Furthermore, we still have a long way to go before achieving the far-reaching standardization and formatting we are going to need. The MIT task force even calls this situation chaotic. Data storage must assure permanent readibility independent from hardware or software innovations, or the data must be transferred to other, technologically less intricate media ascertaining future readability, such as the optic devices necessary for reading microfiches. Of course, my enumeration is far from exhaustive, and very likely there are many more aspects involved in this problem.[19]

Our considerations will strongly be supported by the authors, who, as a rule, dislike the "dynamic book" for copyright reasons, as unlike the ancient Chinese writers, whose works are preferably recorded by their titles, they are not content with simply altering and improving given texts, but in the tradition of Occidental Humanism want to see their names connected with their intellectual products, for reasons of honour and immortality as well as for gaining profit.[20]

In all probability, entirely new concepts will be found for the administration and marketing of intellectual property, including the copyright questions involved. Authors are probably unwilling to cede their copyrights entirely to publishing houses or similar institutions, which may then bill any electronical delivery.

Of course our understanding of an author and his work is shaped by the tradition of Occidental Humanism. In his "Kultur der Renaissance in Italien" (The Civilization of the Renaissance in Italy), Jacob Burckhardt has very convincingly described the rise of the individual, the "uomo singulare" or "uomo unico". As he explains, "In the Middle Ages both sides of consciousness - one reflecting the outside world, the other the inner state of man - had remained in a

19 The Aqueduct Action Group of American Serials Librarians, which I have mentioned above, has demanded just the same in point 3 of its Action Plan, stating that "Standards, strategies, costs, and responsibilities for archiving electronic journals are uncertain. Librarians should respond to this opportunity by working with publishers and computer centers to create standards and costeffective strategies and to determine libraries' role in storing, accessing, and archiving electronic journals."

20 Lenk, Klaus: Perspektiven für Organisation und Recht des Publizierens. In: *Rechstsprobleme des elektronischen Publizierens*. Köln 1992, pp. 112-122 (Informationstechnik und Recht; 3).

veiled state similar to continous daydreaming. The veil consisted of faith, childlike mental shortcomings and delusions; the outside world and history alike were tinged with a miraculous hue, and man conceived his identity only in terms of race, ethnicity, faction, corporation, family or in any other general way. In Italy this veil is torn for the first time by an *objective* consideration and treatment of the state and everything else in this world; simultaneously, man is becoming powerfully aware of *subjectivity*, recognizing himself as in intellectual individual." Or, "The spell is completely broken, individuality has manifested itself, thousands of faces are becoming individual and special".[21] Jacob Burckhardt emphasized that objective academic research and individual authorship are inextricably intertwined. I do not intend to equate "race" and the "dynamic book", but we must remember our roots.

Over the millenia, libraries have considered the collection, supply and perpetuation of information to be inextricably linked, regardless of, and yet in close affinity with, the respective physical medium. If libraries offer electronic data only as intermediaries while preserving information only in books, this will mean a tremendous cultural hiatus.

Such an attitude, which nowadays is frequently regarded as progressive, seems to me extremely short-sighted in view of the impending electronic revolution which is about to have an impact on all aspects of information, the conversion of our catalogues to electronic databases having been only a negligible affair in comparison. Libraries in particular are bound to be fundamentally involved in this electronic revolution, being either swept away in its wake or trying to participate actively in it.

The "old book" entrusted to our profession, this familiar and useful device of easily turned written or printed pages between two covers, this often precious, sometimes artistic document over the centuries, has always been an efficient medium to carry free information, symbolizing the freedom of the intellect.

As ideas published in books have always been contradicted by other ideas expressed in books as well, this medium has also been instumental in breaking monopolies of power. This was true as early as in the manuscript era when texts were copied by assiduous hands, and it applies even more to the printed book. The intellectual ideas of the 16th century would have far less vehemently been disputed without their propagation by the fully developed technological device of the printed book and its multiple copies. The book became an important factor for the dissemination of ideas, a stronghold securing the freedom of information, as the many attempts of censoring, isolating, even burning it have finally been of no avail. Individual copies of a multiplied book have always escaped destruction.

21 Burckhardt, Jacob: *Die Kultur der Renaissance in Italien*. Ed. by Horst Günther. Frankfurt am Main 1989, p. 137f.

The propagation of multiple ideas is of prime importance, even if the ideas expressed in different books countervail each other. If books could sing, we might hear an incredibly discordant chorus when strolling along the kilometres of shelves in the stacks of ancient great libraries. This should be welcomed, as it stands for the freedom from being dominated by anyone decreeing his own opinion as the only valid truth. The jarring chorus of free opinion is by far preferable to the weak melody of seemingly absolute truth.

Even if our daily work basically consists in the administration of these stacks by acquiring, cataloguing and delivering books, we must always bear in mind our preeminent task of granting access to free information, which has been questioned ever and ever again by political authorities of different origins.

We must test the new media particularly with regard to this aspect of free, clearly defined and permanent availability of the ideas, opinions and facts transmitted by them. As they are technologically more "invisible", more easily manipulated and changed, they are more likely to be misused than the printed book or journal. They may be misused commercially, which is most acutely felt by the poor, for instance, by Third World countries, which for financial reasons are barred from many information they need for their survival.

Electronic media may also be abused economically or politically - in the present world of detestable fundamentalists even for ideological purposes.

Our professional efforts are worth to be undertaken to ascertain for the new media the same qualities that are inherent in the old book.

You may be surprised that I have delineated these problems without offering an immediate practical solution, but my lecture just intended to evoke new ideas. The old book and the new media should finally serve the identical purpose of enhancing the freedom of intellectual life.

In the context of these issues, we also have to face the challenge that in theory and practice we must improve our professional knowledge.[22]

22 Kaltwasser, Franz Georg: Altes Buch und Neue Medien. Gemeinsam in die Zukunft für die freie Zugänglichkeit zu den Informationen. In: *Biblos-Schriften* 159 (1993); cf. also: Bibliothek der Zukunft: Vermittlungsstelle für Informationen mit angeschlossener Nostalgie-Abteilung für alte Bücher? In: *Börsenblattt für den deutschen Buchhandel* 1993, 5 (19.1.1993), pp. 29-35.