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Vital Technical Services in Academic Libraries

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Introduction

Technical services departments in every type of library are affected by the state of modern librarianship. This is so most sharply for academic libraries. We have experienced a long journey of severe if unfair criticism, explicit or implicit threats of elimination, downsizing, and downgrading, and a deep experience of collective anxiety while our colleagues in public services and administration regarded us with suspicion and, simultaneously, we had to relearn our trade again and again. We seem to have come out of this prolonged trial period with our capabilities intact, our hearts filled with professional pride, and our expectations returned to normal within a revitalized profession. I believe along with many others that our future is brilliant, that our work is as wonderful as it ever was, and that we will have a better life during the coming decades.

Assuming that the above claim is true, I want to discuss five urgent topics that have been suggested to me by colleagues and that are dear to me as a result of my own work in recent years. The five topics are: ***access to information in print and nonprint media*** with special emphasis on the question of remote storage; ***leadership and management in library administration***; the ***new standard for monographic and serial holdings of materials*** in all formats; the ***restructuring of MeSH by the National Library of Medicine***; and the ***cataloging of computer files contained on discs***. I have arranged them in the order stated so that I can move from the most general to the most particular. The first issue affects all media of publication on an international basis; the second is a vital problem for all employees at all libraries; the third issue implies an advance in bibliographic control at the national level, as the standard propounded is an American National Standards Institute (ANSI) standard which all American academic libraries should follow; the fourth issue is a technical question for American health sciences libraries; and the fifth issue is a problem for libraries that collect physical types of electronic materials. I will start with a philosophical discussion of resource management in libraries with space problems and the need to balance the acquisition of print and nonprint materials.

Access to Print and Nonprint Media

Nothing seems more urgent in the field of library administration than new ways of providing access to information. Administrators are eager to find these new ways because the advent of a torrent of information resources in electronic formats is something previously unknown in human history. We simultaneously marvel and despair at the newly available texts, graphics, audio, and video files in a variety of "machine readable" forms. This torrent of resources calls for an originality of mind and vision with which to achieve clarity and

decisiveness.[1]   Library administrators need to make bold decisions about how to handle these new forms of information, how to select organizations which sell or distribute them, how to contract archiving agreements for whatever must be preserved, how to survive the competition of rivals, and how to operate within the law.

       While I welcome the perceived need for new and penetrating ideas in library administration today, I question the novelty of what we are discussing. I ask if the above-mentioned issues are truly new in any sense of the term,[2] or if we are repeating what we have more or less forgotten about the past, both remote and immediate. I do not propose to review the remote past, but I do intend to cover the relationship between the immediate past and the coming future. The past can not be changed, but thinking about it in the present is fair and even necessary in order to have a clearer picture of the future. In addition to discussing preservation of electronic resources, I also want to address the issue of the storage and preservation of *nonelectronic* resources that we want to preserve. I hope this approach will put the problem of shrinking storage space in context, while relating it to discussions of electronic resources.

       In brief, my thesis is that perhaps there is "nothing new under the sun" and that a fruitful way to address the question of remote access to library materials acquired in the past and "deselected" for reasons of lack of use and space is to think of it in parallel to the question of remote access to electronic materials in the present. In explicating my thesis to librarians, I propose an alternative to the "horizontal thinking" we all tend to follow in considering problems, and thus attempt to look at the question of access to library resources, old and new, print, electronic, and anything else, in terms of "vertical thinking."[3]   Please look at the issues involved with the assistance of the following diagram:

Substitute for the scheme: PAST → PRESENT → FUTURE
                            FUTURE
the scheme   PRESENT
                            PAST

Similarly, replace: STORAGE → LIBRARY → INTERNET
                            INTERNET
        with the model: LIBRARY
                            STORAGE

       I suggest that it is better to think about time, not as something discrete, passing from left to right on a flat plane in equal units (i.e., each century is the same, or each day, or each project, or each library, or each collection), but in the vertical style of agriculture, architecture, theology, and other disciplines, wherein we think of the past as the ground of the present, and of the future as the outcome of our lives and choices in the present. Instead of a flat, equal movement from day to day, acquisition to acquisition, set of books to set of books (or audiovisuals, discs, etc.), shelf to shelf, building to building (think of the Library of Congress), try to conceive of materials, collections, budgets, and history as an organic process that moves from its ground in time and life toward its immediate future. Instead of

the mere accumulation of thousands of books, microforms, films, diskettes, etc., which boggles the mind, gathers dust, and needs to be divided because of space limitations, think of a university's physical property (and responsibility) as an organism that lives in the midst of the collective mental existence of the university's faculty and students.

In this way, you might be able to look at your large collections as a beautiful but overgrown tree that needs trimming in order to keep it alive, strong, and beautiful. Your physical environment and your intellectual environment suddenly begin to mesh, and it may be as sensible to have a break under a group of trees in a quiet area of the campus as to have a meeting in some special room of one of the buildings which house a part of the library's collection. Instead of throwing away all the older materials that have not been used for a certain number of years, you will keep a good amount of them in a remote storage facility with the understanding that classics, unique holdings, local materials, specialty items, etc., are as valuable as any new acquisitions recommended by your tenured faculty members, or the best looking and most complete, free or purchased, resources found in the almost infinite niches of the Internet which your reference librarians pursue every day. Those preserved older books which you acquired some time ago are continuing to live their proper lives as the published treasures which they were and still are in their right new place, thanks to the intelligent decisions of your staff. Each one of them will be granted an assisted life in the nursing home that you have remodeled for the senior members of the collections. As those books are either circulated again to the occasionally interested scholar, or remain in storage to help preserve the memory of academia, they should be living a full and dignified life in their own right. There may be even time and funds to have some of them rebound, deacidified, microfilmed, or digitized.

Concerning criteria for deselection from the main collection or the just mentioned upgrading of their physical condition, again, the truth may be that there is nothing new to add to the established truth of previous library practice. Statistical information about external and internal use at the library in recent years, quantified extra life from interlibrary loan reports, numbers of citations reported in citation indexes, considerations about numbers of copies, original and present day price, availability in print or lack of same, and holdings in member libraries of consortia to which the library belongs, are sufficient for making decisions. If anything could be added to that, I would point to the welcome new emphasis on nonquantifiable or nonmeasurable criteria. At last, the professional literature is again referring to qualitative criteria for deselection, such as categories of use (faculty versus student versus outsider), the importance of a particular edition or printing of a text, personal recommendations of specialists with profound and extensive knowledge of a given scientific literature, and others.[4] A set of quantitative and qualitative criteria regularly updated by the collection management librarians should suffice for the library to have a satisfactory policy in place for the benefit of all.

In addition, and at the risk of being charged with a personal bias, I would argue that the ultimate key to the successful separation of the collections into two or more categories resides with the cataloging department of the library. All materials removed to permanent storage need to be faithfully and fully represented in the library's catalog (with no exceptions at all, whether it be slide sets, pamphlets, special collections, rare books, or anything

else). Any given copy of anything might as well be thrown out if it is not represented by an adequate bibliographic record (shared in a national utility) and an accurate holdings record in the local OPAC. The only other possible solution, and a much more costly one, is the already mentioned digitizing of the entire document and the addition of a hot link to it on the library's web catalog.[5]

Let me try at this point to draw again the vertical model I have presented earlier:

(Written Policies) RESOURCE MANAGEMENT (Staff participation)
(Searching) INTERNET (Web Page Construction)
(Selection) LIBRARY (Cataloging)
(Deselection) STORAGE (Preservation)

I have now added some terms on the left and right sides of the vertical triad in order to recover the use of the horizontal dimension, and to amplify the meaning of the three single terms I used first. Vertical, or, if your prefer, organic thinking, does not intend to deny the reality and appropriateness of horizontal thinking, but only to make it more vital and true by means of a radical change of perspective. Traditional library functions and processes, such as searching, acquiring, cataloging, processing, weeding, preserving, etc., still have and will always have room in any legitimate professional practice. The traditions we come from are alive and important. On the other hand, the negative views of some contemporary proponents of an extreme electronic approach to information seeking are unbalanced and perhaps even dangerous. As Michael Gorman has repeatedly argued, there have not been yet any formats that cannot be successfully subjected to normal Anglo-American cataloging standards.[6] In spite of the suspect intentions of some authors and vendors, all Internet documents are accessible, reproducible, and controllable by traditional library means. And every new conceptual advance or technological development can be taught by professional instructors to all sorts of learners independent of age, background, field of specialty, and so on. I believe that the recent creation of "headers" for documents written in standard markup languages and "locators" (less or more permanent) for resources which can be embedded in bibliographic records will soon allow more exact control of materials than we ever had dared to imagine. We are fortunate that the profession as a whole has conveniently forgotten the very recent fad that was so-called "cataloging simplification."[7]

The refined model displays a greater number of terms, and any of us could have a good time adding more, in the approximate shape of a tree with roots, trunk, and branches. The total life of the tree is made up of the composite life of all its parts. As in nature, multiple relations among the parts are responsible for the specific vitality of the one tree that will represent each library system. Thus, again, the right storage collection is a vital part of the total life of the library. With the storage and library collections as a foundation, librarians and patrons should then continue to aggressively explore the Internet in search of documents, files, archives, etc. The result of this exploration will replicate, complement, revitalize, change, and improve the print, microform, and audiovisual collections of the past. The introduction of new viewpoints, modes of access, ways of working, and revolutionary changes in teaching and learning techniques, while not easy for many in certain ways, are a necessity and a gift for all. Vertical thinking and living require effort and

direction from human beings, properly grounded in the past, who cannot resist the pleasure of letting their minds grow.

I have included a fourth term at the top of the tree, Resource Management, again to follow tradition, but also to argue that intelligent management of our means is the most we can do, and that such management implies our professional efforts to teach the best to the new generations. In that sense, you can relate standard terms like "Bibliographic Instruction" or "Education" to the term Resource Management. [8] In closing this section, I will argue that, as in the case of storage, librarians have the responsibility of selecting which electronic resources are to be made available and which should not be included in the offerings that workstations present to patrons. There are all the constraints of limited funds, hardware, software, instructors, space, and time, but it is our duty and privilege to balance those concerns with our responsible choices from the universe of electronic publishing. That choice is the core of our instructional task.[9] Let us select with care any and all of the resources that are available at either the storage facility, or in the stacks of the library, or at the computer workstations in the library and elsewhere.   In doing so, we will have discharged our duty. Compare with my idea what Carol A. Mandel and Robert Wolven wrote recently about the Web: "Information on the World Wide Web could be likened to a library in which authors shelve their own books, haphazardly, rewrite them overnight, and move them from place to place without warning."[10] I think we all should want something better than that. I surely do.[11]

Leadership and Management in Library Administration

Before I speak of the particular areas of technical services, I want to add to the philosophical discussion of administrative issues a specific discussion of personnel administration, simply because there cannot be libraries without librarians, and if the librarians are not infused with "the spirit of the times"[12], libraries will not fulfill the needs of today's library patrons. This section is largely indebted to John R. Secor, the founder and chief executive officer of the Yankee Book Peddler company, a successful bookseller in Contoocook, New Hampshire. During 1996-97, Secor published on his company's Web page a three-part essay entitled "Dry Bones,"[13] which has helped me to consolidate my own ideas about the so-called "human resources" which we think parallel the other "resources" that we supposedly "manage" in our libraries. In proper scholarly fashion, Secor credits some of his ideas to respected authors in the field of management such as Warren Bennis and Burt Nanus, John P. Kotter, Steven R. Covey, Robert G. Eccles and Nitin Nohria, Max De Pree, James C. Collins and Jerry I. Porras, Charles Handy, Howard Gardner, and others,[14] but I will simplify my presentation by referring to Secor alone.

Secor, with good reason, is deeply alarmed by the mania for change that has invaded many companies, the mental laziness of the American population that wants everything to be easy and quick, the dependence of many organizations on various management ideologies, the sad phenomenon of extensive job dissatisfaction among workers, the obsession with numbers alone, and the lack of understanding of the very purpose of many organizations by their own leaders.[15] Instead of such ideas and others commonly on the horizon of our management practice, Secor proposes a moderate view based on the revitalization of certain

traditional values and an eagerness to readapt and renew at every turn as the world keeps evolving. He summarizes his long essay in the very direction of my defense of "vertical thinking" when he says to his audience, "I've pointed you back to your roots."

Before continuing to discuss Secor's ideas let me draw a new tree arrangement of the fundamental terms in personnel administration:

HUMAN RESOURCES
WORKERS
MANAGERS
LEADERS
COMPANY HISTORY

Starting with a strong defense of the need for a true self identity on the part of all members of a company's staff, Secor proposes a new idea of leadership which should make us rethink our notions of the relationship between leaders and followers. Armed with an awareness of the company's origin and nature, leaders are responsible for the introduction of change while watching out for the company's stability, and for the creation of a team in which everybody gets retrained as the changing content of each person's work demands and in which everybody contributes willingly to the total effort according to his or her own abilities.[16] Secor writes, "If it's a team sport, then personal and interpersonal training is part of the conditioning." And, "Skills training and personal and interpersonal effectiveness training are critical building blocks for personal and organizational renewal."

If one wants to disagree with the idea that a company's life is a "team sport" and prefers to believe it is an individual's privileged domain only, then there is no need to continue this discussion. But if the fundamental notion of "team sport" is granted, then Secor's point about the radical need to think and learn continuously and to renew oneself, whether we are talking of leaders, managers, or workers, should be at the center of a new theory of management for the contemporary company. Then, more specifically, Secor neatly distinguishes the concepts of "leader" and "manager" as pertaining to two quite distinct skill sets and personality types, and asserts that any healthy organization needs to have some of both if it wishes to endure.[17] The leaders are charged with the creation of a credible vision for the future and they must try to understand that human nature means the workers will feel uncomfortable with the tensions that accompany all change. Capable managers will also be needed to bring about the change involved and help all workers adapt to it. And, of course, old and new workers will have to be employed to carry out the business of the company, following the lead of the leaders, and responding to the management of the competent managers, in a spirit of full participation and never of blind submission. Leaders, managers, and workers should join in the pursuit of the legitimate goal of the organization and for the good of all, the company itself, and its customers.

It seems to me that Secor must have been thinking about libraries when he wrote, "Most organizations do need to make fundamental changes in how they do business so that they can adapt faster and faster to their changing environments." Our library environments seem truly to change faster and faster, and thus far we librarians have failed to respond faster and faster to such changes. The reasons for this are obvious to me. The responsibility for

this failure rests with all of us—leaders, managers, and worker alike. First, our leaders often do not know how to lead, do not care for stability but only for abstract change and newness, do not communicate to library managers and workers clear visions that need to be shared by all, do not empower their managers with the proper responsibility, and do not respect the humanity of their workers. Second, many library managers do not care to manage but want to lead only, do not help their workers to adapt to the continuous changes, and do not attempt to understand the organization's purpose and goal but care only to produce high figures and stay out of trouble.[18] And, third, too many workers do not want to work but only manage or lead in spite of their lack of qualifications for such tasks, do not join managers in any form to sustain a collective effort, and do not care about the organization's past or future but are only interested in a self-serving, short-term benefit. [19]

To correct this situation, we need to go back to the drawing board, and for that we have the scheme presented by my new tree for the vertical organization of a library's life. Thanks to the horizontality of our thinking, I would suppose that most persons trying to draw this tree of personnel would have placed the workers at the root level and the leaders at the branch level. We do not call certain powerful employees "top" executives for no reason. However, since the role of the leader is the decision-making that provides direction to the life of the organization, we need to correct our customary incremental thinking and properly situate the "leaders" at the root level. Their work infuses the whole organization with the vital substance which flows through all its parts. "Managers" do fit in the middle where we draw the tree's trunk. They must be the strongest members of the staff, involved as they always are of necessity in sustaining the company's life, whatever the circumstances.   And the "workers" should be placed at the level of the branches. They can change departments, they sometimes waver in their endeavors, they are visible to outsiders, they grow rather obviously when they educate themselves further, etc. When things are well in a company, we all know it has to do with having good leaders and managers first, but, also and decisively, with having good workers on the front line. Whether these workers are mechanics, programmers, or masons, the point is the same always. So, we do need "top" librarians in all good libraries—"top" reference specialists, "top" catalogers and indexers, "top" searchers, etc.

Most companies today have a human resources department to watch over the workers and their human needs and to help with many delicate management issues and help "leaders" communicate with "managers" and "workers" In so doing, they are responding to the true reality of the organic life of a company in spite of our collective faults in thinking. Without the fundamental direction of the "leaders," there will not be a tree or company at all but, instead, the company will wither away (as it is the case with many in the real world of economic and social competition, and whether or not they have tried "downsizing" or "re-engineering.") Without "managers" who sustain the whole edifice of the organization, well-rooted in the vision shared by the "leaders" from its roots, there will be chaos in the organization.   And without true "workers" there will not be the product that makes a company recognizable and appreciated.

In the case of a library, the "leaders" can be the directors of national associations or consortia as well as the local heads of the largest libraries. The "managers" are, independent

of their titles, the directors or head librarians of the smaller (school, public, special, corporate) libraries or the department heads of the sizable academic libraries. And the "workers" are the beginning professional librarians, the best of the paraprofessional staff, and even the expert veterans in all sorts of specialties whether degreed or not. The relationships among all of them, their understanding of the roles they play in library organizations, and their commitment to a vital vision of the place of libraries is what makes or breaks the real and effective existence of libraries in our society.

New Standard for Monograph and Serial Holdings

Having presented a model for vertical thinking about organizations, and having discussed the general issues of access to materials and personnel administration, I want to discuss next a more particular topic that is closely related to the issues of access and storage. That topic is the extremely important new ANSI standard Z39.71 for the display of holdings of both monographs and serials in all media, physical or electronic, and whether manual or automated means are used to keep records. This new standard was approved unanimously by National Information Standards Organization (NISO) representatives after very careful consideration by many organizations (including all the national library associations), and it has just been readied for publication.[20]

The importance of the standard lies in its direct and positive confrontation of some mistakes of our past and its responsible attitude toward new ways of delivering information. It reverses the old separation of serial and nonserial publications, and thus it justly proclaims to have made obsolete the two earlier standards for the display of holdings for those two sorts of publications (respectively ANSI standards Z39.44 and Z39.57). It also claims to apply to the display of holdings statements of bibliographic items in any format at either summary or detailed levels, or even a mix of the two for libraries that cannot create fully detailed holdings statements for their older publications. It is independent of any particular cataloging system or code, and it leaves librarians free to choose among several alternatives to make practice possible under different local needs and possibilities. This is the same spirit of the latest revisions of AACR2 and new documents like the 1994 *ALA Guidelines for Bibliographic Description of Interactive Multimedia.*[21] At last, the participation of all of us in the field, and in particular in technical services, is now continuously requested and appreciated. In this case, the standard was developed in full consultation with many specialists in American libraries, and credit for that must be paid to the chairpersons of the committee that drafted it, Ellen Rappaport and Martha Hruska.

The main goal of standard Z39.71 is to make holdings statements consistent in all sources for such data and therefore make it possible to communicate the data across computer systems. The standard, however, only addresses the display of holdings, not their communication. The latter is the job of the MARC holdings format, and the acceptance of Z39.71 will require some changes to that format.

My recommendation is that catalogers and serials librarians must adopt the directions of Z39.71 as fully as local circumstances allow, and try to use its four levels of specificity intelligently. While single part titles can be satisfactorily recorded at the first level, multipart

titles, titles with supplements, indexes, accompanying materials or any other sort of secondary bibliographic units, and serial titles—all still represented by a single bibliographic record—can only be satisfactorily treated at the second, third, or fourth levels of specificity. The second level provides only "general" information about holdings. The third level provides a compressed summary statement of holdings. The fourth level provides detailed holdings information, either compressed or itemized, which, it seems to me, will deliver completely successful retrieval by computer in every conceivable case, no matter what complexity the record might include.

For the purposes of my organizational model, the two older standards (for monographic and serial holdings) were another expression of horizontal thinking, while the new standard makes more sense from the point of view of vertical thinking..

Re-structuring of MeSH

While the Z39.71 standard is an important new tool for descriptive cataloging, the restructuring of MeSH—*Medical Subject Headings*—the medical vocabulary of the National Library of Medicine (NLM) represents an important advance in subject analysis.[22] The 1999 version of MeSH was prepared by the Cataloging Section of the NLM to exploit the capabilities of their new Voyager library automation system. The head of the Section, Christa F.B. Hoffmann, made the rounds of meetings held last year by various library organizations to communicate NLM's new plans and invite criticism and commentary regarding them.[23]

The new MeSH proposes to overcome the old difference between cataloging and indexing that has been an impediment for medical librarians and their patrons. NLM will now perform subject analysis in cataloging the same way as it does in indexing. This should result in a new equality in the treatment of all materials relevant in medical information seeking. No longer will there be two parallel systems: one for the analysis of journal articles by indexers and another for the analysis of books, audiovisuals, and computer software by catalogers. Beginning in 1999, any document in any format will be analyzed the same way, with subject headings distributed mostly in terms of descriptors subdivided topically, while earlier form, linguistic, and geographical subheadings will become genre, language, and geographic descriptors. Up-to-date automated systems will be able to retrieve and combine such new headings with more powerful and accurate results.

In keeping with the same spirit of liberty and participatory responsibility mentioned above, NLM has opened a dialog with other medical libraries to present them with three choices for the use the new vocabulary structure depending upon local traditions, computer characteristics, and relationships among libraries. Recognizing that many medical libraries are associated with other types of libraries in many university systems, the first choice still allows for the stringing of headings and subheadings done in previous years, a technique which is much closer to the style of LC subject analysis that will continue to appear in most bibliographic records of those universities. The second choice is to comply with NLM's new practice. A third, intermediate choice is a hybrid of the other two that might take advantage of the strengths of both systems. I have taken the position that, if at all possible, medical

libraries should follow NLM's lead and convert to its new practice as soon and as fully as possible, given staff retraining considerations, the economics of conversion, etc. The advantages of a unitary system of subject analysis that covers the article databases, the indexes, and the online catalog seem to me enormous.[24]

In terms of my proposed vertical model, the new use of MeSH should represent the revitalization of the branch of practical knowledge that is cataloging in its relation to the branch we call indexing and to the main trunk of all library work. The pruning of the previous MeSH will be a painful procedure, but it should result in a more rational and vital tool which will serve us well for years to come. An example of the greater intellectual correctness of the new vocabulary is that, at last, the topical subheadings epidemiology and ethnology will be exclusively related to geographic subject headings (and therefore will be stored in a subfield of MARC field 651, not 650). On the other hand, in spite of the change a few years ago of the two topical subheadings **legislation** and **statistics** to **legislation & jurisprudence** and **statistics & numerical data** respectively, catalogers in many medical libraries have still been using them as equivalent to the form subheadings **legislation** and **statistics** and in practice applying only or mostly the form subheadings. This change illustrates the need to reform the structure of the vocabulary. One cannot substitute a form subheading for a more precise topical heading and then expect success in the retrieval of pertinent literature. Discussions of laws are not enough like a collection of the texts of those laws, and the same applies to the second case about statistical data.

The classical concatenated string of headings and multiple subheadings is an extreme example of horizontal thinking, with all its advantages and disadvantages. By contrast to LC vocabulary, MeSH has always had a built-in tree structure of concepts related vertically, and now it will be cleaned and polished as horizontal strings are replaced by vertical sets of subjects that apply to a given document.[25] If only we could now go further and also clear up the horizontal relations among the various trees to make MeSH the perfect "forest."

Policies for Cataloging Computer Files on Disc

Another, and still more specific, example of the need for vertical thinking is in the development of policies for cataloging nonaudio compact discs, i.e., CD-ROMs. We face an interesting situation with compact discs. On one hand, we do not look at them with the same awe of a few years ago, when their novelty and characteristics made them a hit among librarians as well as the public at large. On the other hand, they still are being published and distributed in large quantities and in many fields, from pornography to scholarship and anything in between. If anything, it appears that more and more of our traditional materials are either accompanied by a compact disc (e.g., textbooks, print journals, directories) or are reissued in this contemporary technology (e.g., dictionaries, encyclopedias, books). The pressing issues for libraries seem to be their preservation and "fair use," which has led to discussions about the necessity or convenience of arranging a new collection of discs at the reserve desk. The bibliographic character of CD-ROMs is also an issue, including traditional questions such as monograph or serial, accompanying material or independent publication.[26]

By now, LC has prepared draft interim guidelines for cataloging electronic resources (excluding Internet documents).[27] Their proposals seem quite reasonable and sufficient, and, if followed prudently, they provide the basic elements for a local policy on compact discs. In practice, the most difficult aspect may be establishing whether the material is a reproduction (whether with the same title of the original or not) or a new publication. After that, it is a question of determining whether the disc stands alone or is part of a larger package.

If the disc is truly a separate publication which stands on its own, a new bibliographic record must be prepared, with the MARC fields 007, 300, 516, and 538, which will fully describe its physical characteristics and the hardware required to use it. If the disc is accompanying material for another published item, then its physical description must be subsumed in subfield e of the 300 field for the primary bibliographic unit, and an 006 field should also be included to reflect that relation between the two. One should not conflate these approaches with the excuse that the primary bibliographic unit is not present or that it has not been possible to establish what is the case.

It has been said that the difference between the two kinds of discs described above can be clearly shown by asking whether the publication "is" a disc or "has" a disc. This also illuminates the added problem of discs that are only forms of advertisement (then the book "has" not a disc), or are part of a multimedia package (then the package "is" not just the disc). The ultimate goal has to be, as always, the full level cataloging of any disc worth adding to the collection, and of course the provision of means to insure proper preservation of the materials.

A new factor in the situation with optical discs is that, instead of being used at readers placed around the library, many libraries are now mounting them on local networks to make them available to several patrons simultaneously. Some librarians even want to put them on the Web to make remote access possible, but this appears to be prohibitively expensive. If they are added to the Web, MARC fields like 538—System Requirements and 856—Electronic Location and Access would have to be adjusted in order to keep users informed of the physical or electronic availability of each product. LC's guidelines call these two uses of discs "directly accessed" and "remotely accessed" electronic resources and they cover both of them equally.

In terms of my model of vertical thinking and management in libraries, it is horizontal thinking when discs are looked at as an intermediate technology between print (e.g., books, indexes, etc.) and remotely accessed electronic resources.[28] Every day we have more discs to catalog, separately or as accompanying material, because publishers avail themselves of this technique of reproduction for many purposes, without having it replace or be replaced by something else. As a successful technology, discs will continue to have their place in library collections, which helps keep healthy the live trunk of the green trees libraries are.[29]

Conclusion

We have now completed an excursion through five issues that loom large in the immediate horizon of technical services operations in academic libraries. This excursion

probably needs to be repeated with other issues of equal importance that I have not dealt with in this paper. As we moved from the general to the specific, we were moved more and more clearly from the historical roots of our field to the branches which it sustains in our time. Technical services has much to offer the profession and the academic world of research and learning generally. But we need to keep pruning our limbs during the proper season in order to keep up with the demands imposed on us, and the continuous development of technology.

There may be or not be anything "new under the sun" but, as Gregory Wool[30] has written, the proven prescription for a bride, with a slight alteration which still rhymes, is applicable to the state of affairs in our field. Cataloging, encoding, communication, retrieval, and use of bibliographic resources in all formats entail "something old, something new, something borrowed, something to do." And if we want to prove our critics wrong, we will do it until it is "blue" (or *we* are "blue"—my favorite color!)

In summary, cataloging titles in a new format, using a restructured vocabulary for analysis of medical materials, adhering to a new standard for the display of collection holdings, deselecting the titles least used and managing humanely involve "something borrowed," "something new," and "something old." What we have to do with all those elements is to practice our technical services specialties as the branches of knowledge they legitimately are while being conscious of the vitality of the profession as a whole.[31] Without knowledge, libraries, continuous growth and development, and our dedication to our specialties there is no life of the mind, there is no humanity. But to remain truly human and alive first of all means, as Freud and many other sages have impressed upon us, that we stand erect on our feet and, thinking "vertically," looking beyond the horizon. To all of us in libraries I say, let us practice our art and science in such a spirit, and even if, truly, there is nothing really new under the sun.

References

1. On "vision" see reference 13 below.

2. On "management" see reference 13 below.

3. A good number of years ago the great German and American philosopher Paul Tillich wrote in his essay "The Conquest of Intellectual Provincialism: Europe and America," (*Theology of Culture*, edited by Robert C. Kimball. London: Oxford University Press, 1959, p. 159-176; first published in *The Cultural Migration: the European Scholar in America*, W. Rex Crawford, editor. Philadelphia: University of Pennsylvania Press, 1953, p. 138-156): "The whole history of America has turned the American mind in a horizontal direction ... which is quite different from the predominantly vertical thinking in Europe. ... The European danger is a lack of horizontal actualization; the American danger is a lack of vertical depth." (at p. 167-168). These concepts appear on a number of his many other publications. One of the articles not collected in any of his books was "Vertical and Horizontal Thinking," *American Scholar*, v.15 (1), Winter 1945-46, p. 102-112. I most gratefully admit the decisive influence of Tillich's thought on my ideas.

4. Please see the illustration in Peggy Johnson, "Selecting Electronic Resources: Developing a Local Decision-Making Matrix," in *Electronic Resources: Selection and Bibliographic Control,* Ling-yuh W. Pattie and Bonnie Jean Cox editors. New York : Haworth Press, 1996 (first published as an issue of *Cataloging & Classification Quarterly*).

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5. Please compare here the double approach to the problem of access to electronic documents taken by OCLC when mixing their InterCat and NetFirst projects.
Confirming my view, the latest news from OCLC is that a new project will replace both InterCat and NetFirst. See Thomas Hickey, "Cooperative Online Resrouce Catalog Explores Uses for Catalog of Internet Resources." *OCLC Newsletter*, September/October 1998, p. 15-19.

6. Recently in Michael Gorman and Pat Oddy, "*The Anglo-American Cataloguing Rules*, Second Edition: Their History and Principles: a Paper for the International Conference on the Principles and Future Development of AACR2, Toronto, October 1997" (handout). All the conference papers are available at http://www.nlc-bnc.ca/jsc/index.htm.
Also in Michael Gorman, "AACR3? Not!"in *The Future of Descriptive Cataloging Rules: Papers from the ALCTS Preconference, AACR2000, American Library Association Annual Conference, Chicago, June 22, 1995.* Edited by Brian E.C. Schottlaender. Chicago: ALA, 1998. p. 19-29.

7. See Michael Gorman, Michael Gorman, "AACR3? Not!" op. cit., p. 26-27.
For a selection of strong papers on issues related to the cataloging of electronic resources, see: Martin Dillon and Eric Jul, "Cataloging Internet Resources: the Convergence of Libraries and Internet Resources," in *Electronic Resources*, op. cit.; Patrice A. Clemson, "An Inside Approach to Networked Document Cataloging,"*Journal of Internet Cataloging*, 1 (2), 1997, p. 57-64; Les Hawkins, "Serials Published on the World Wide Web: Cataloging Problems and Decisions," *The Serials Librarian*, 33 (1/2), 1998, p. 123-145; Steven C. Shadle, "A Square Peg in a Round Hole: Applying AACR2 to Electronic Journals," *The Serials Librarian*, 33 (1/2), 1998, p. 147-166; Pamela Simpson and Robert Seeds, "Electronic Journals in the Online Catalog : Selection and Bibliographic Control," *Library Resources & Technical Services*, 42 (2), April 1998, p. 126-132; Robin Wendler, "Branching Out: Cataloging Skills and Functions
in the Digital Age," *Journal of Internet Cataloging*, 2 (1), 1999, p. 43-54.

8. Again, on "management" see reference 13 below.

9. Simpson and Seeds have noted this in their paper mentioned in reference 7 (p. 129).

10. In "Intellectual Access to Digital Documents: Joining Proven Principles with New Technologies," *Electronic Resources*, op. cit.

11. Let me recommend an article by Geoffrey Nunberg in the latest issue of *The American Prospect*, available online at http://epn.org/prospect/41/41nunb.html. See also the recent article by Michael Gorman, "Metadata or Cataloging?: a False Choice," *Journal of Internet Cataloging*, 2 (1), 1999, p. 5-22.

12. I am borrowing this concept from Hegel's philosophy of history, not from common parlance today.

13. On the Internet at http://www.ybp.com/papers/drybone1.htm

14. The publication data are: Warren Bennis & Burt Nanus, *Leaders: the Strategies for Taking Charge* (New York: HarperPerennial, 1986); John P. Kotter, *A Force for Change : how Leadership Differs from Management* (New York: Free Press, c1990); Stephen R. Covey, *Principle-Centered Leadership* (New York: Simon & Schuster, c1991; Robert G. Eccles and Nitin Nohria, *Beyond the Hype: Rediscovering the Essence of Management* (Boston: Harvard Business School Press, c1992; Max De Pree, *Leadership Jazz* (New York: Currency Doubleday, 1992; James C. Collins and Jerry I. Porras, *Built to Last: Successful Habits of Visionary Companies* (New York: Harper Business, c1994); Charles B. Handy, *The Age of Paradox* (Boston: Harvard Business School Press, 1994); and Howard Gardner, *Leading Minds: an Anatomy of Leadership* (New York: Basic Books, c1995).

15. Compare here the ideas of an author not cited by Secor, Thomas North Gilmore, in his excellent book *Making a Leadership Change: How Organizations and Leaders Can Handle Leadership Transitions Successfully* (San Francisco: Jossey-Bass, 1988).

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16. This idea is usually attributed to Karl Marx in our times, but it was expressed in various forms by a number of earlier thinkers that Marx the scholar knew well and Marx the politician did not want to mention.

17. This is the person who is concerned with his or her rapid ascent in the organization at any cost and, after succeeding, believes in company policies that readily stamp the seal of "confidentiality," and in general acts defensively.

18. Thomas North Gilmore thinks quite differently on this issue. His concept of leadership is not distinct from his concept of management, as revealed in the statement, "I have used the term 'leader' to stress the strategic aspects of managing." (ibid., p. xiii). Curiously, Gilmore recognizes that, "Increasingly, both practitioners and writers in the academic community are drawing a distinction between leaders and managers" (ibid., pp. 8-9) and correctly credits the beginning of the distinctive conceptualization to A. Zaleznick, only to forget about it for the rest of his book.

    Another author who equivocates on the same concepts is Paul Hersey. Among others of his many publications see (co-authored by Kenneth H. Blanchard and Dewey E. Johnson) *Management of Organizational Behavior: Utilizing Human Resources*, 7th ed. (Upper Saddle River, NJ : Prentice Hall, c1996), at p. 7ff.

19. This has a great deal to do with the ridiculous and socially dangerous result of the so-called American Dream in many individuals who attempt to self-start a business only to see it fail, as sociological literature has revealed, in 90% of the cases.

20. Parts of this section have been published in the online newsletter of the Technical Services Section of the Medical Library Association. See http://library.umsmed.edu/ttrends/tt-13-1.html.

    It has been announced in the NISO Web page (http://www.niso.org/publctns.html) that Z39.71 will be available for sale in June of this year ($49.00). They are also advertising a guide for the application of the standard: C.J. Bibus, *Creating Holding Statements: a Self-Instructional Approach*, 1999 ($39.00).

21. Chicago : American Library Association, 1994.

22. Parts of this section have also been published in the online newsletter of MLA's Technical Services Section. See http://library.umsmed.edu/ttrends/tt-12-3.html. I thank the newsletter's editor Walter Morton for obtaining Christa Hoffman's critical remarks on my article. A somewhat different version has also been published in the newsletter of MLA's Philadelphia Chapter, *The Chronicle*, v. 17(2), 1999, p. 16 and I also thank its co-editor, Karen M. Albert for her fine editing.

23. See the latest version of her notes at http://library.umsmed.edu/ttrends/meshilsp.html.
In addition, "Application of MeSH for Medical Catalogers" has just been posted on NLM's Web page at http://www.nlm.nih.gov/tsd/cataloging/catmesh.html. The note at the bottom of p. 1 clearly reveals that these are provisional instructions for 1999 only.

24. Hoffman has reported that a survey conducted among medical libraries produced the very conservative result that 75 % of the libraries that responded planned to continue using for now the horizontal system of chains of headings and subheadings.

25. I think that you will smile if you read now the statement, "In a way, our use of the term cataloging has been very confusing ... Perhaps a better concept is indexing," attributed to Clifford Lynch by Norman Oder in his article "Cataloging the Net: Can We Do It?," in *Library Journal*, October 1, 1998, pp. 47-51, at p. 50.

26. A detailed check of bibliographic records listed in Patric McClain, "Top 100 Computer Files in WorldCat," *OCLC Newsletter*, July/August 1998, p. 16-18 reveals that a vast majority of them are in CD physical format, that almost all of them are serial records, and only ten have 856 fields to link to a remote access version of the same.

27. Available online at *http://lcweb.loc.gov/catdir/cpso/dcmb19_4.html*.

28. Think, for example, of the publishing life of *Psychological abstracts, PsycLit* and *PsycInfo*.

29. For purposes of practical training, please check for yourselves the following titles (they cover the spectrum from books with disc, to discs with book, to disc with supplementary discs, to disc serials):

The American Psychiatric Press Textbook of Psychiatry.   *OCLC #39857695*.
Fundamentals of Complementary and Alternative Medicine.   *OCLC # 33246850*.
LabVIEW Signal Processing.   *OCLC # 38495348*.
Medical Cell Biology.   *OCLC #37282626*.
Mosby's Guide to Physical Examination.   *OCLC #39236399*.
Dictionary of American Biography.   *OCLC #37887884*.
Proceedings of the 5th International World-Wide Web Conference. *OCLC #36188626*.
Documents Relating to the Committee's Hearing on the Proposed Tobacco Settlement ...   *OCLC #38591009*.
Additional Documents Relating to the Committee's Hearing on the Proposed Tobacco Settlement ...   *OCLC #40281254*.
The American Community Survey.   *OCLC #39496619*.
Mosby's GenRx.   *OCLC #38581827*.
Peterson's Interactive College Quest.   *OCLC #37229200*.

30. "A Meditation on Metadata," *The Serials Librarian*, 33 (1/2), 1998, p. 167-178.

31. I have been inspired for years by the arguments and writings of Herbert S. White in this respect. See, for example, his article, "The Politics of Reinventing Special Libraries," *Special Libraries*, Winter 1996, p. 59-62.