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The Citation as Intertext: Toward a Theory of the Selection Process

Ross Atkinson

A model is needed to depict how individual selection decisions are made. This paper presents such a model based upon a typology of contexts according to which citations (in the sense of references) are understood and used for selection. Three contexts are defined: the "syntagmatic context" within the citation itself, the "contexts of supplementation" provided by the selection source, and the "context of resolution" derived from the selector's experience of the collection, the clientele, and the subject.

Selection is difficult to describe. Although the standard textbooks on collection development offer much detailed prescription as to how library materials should be selected, descriptions of the selection process itself—what actually occurs when selectors select—tend to consist for the most part of superficial and self-evident generalities. The explanation is that selection is always a private, cognitive activity that does not submit to precise observation or delineation. Yet if we are ever to understand how bibliography operates and what collection development is about, some extended and systematic description of selection—no matter how tentative—must somehow be posited. The only answer would appear to be a hypothetical model that can represent the selection process and serve as a basis for future description and discussion. The construction of such a model is the purpose of this paper.

While the model I will propose is designed to describe book selection in academic libraries, it is sufficiently broad to be applied—or at least adapted without much difficulty—to the selection of other types of materials in other kinds of libraries. Our aim will be to elucidate microdecisions, i.e., item-by-item selection, rather than macrodecisions, not because the latter are less significant but rather because they are derivative: macrodecision criteria consist for the most part of abstractions drawn from previous microdecision experiences. The model will center on the smallest meaningful unit of bibliography—the citation. Let us define citation as any string of natural-language signs that refers to
or represents, regardless of its textual location, a particular information source or set of sources. All selection must reduce ultimately to the manipulation of such texts that stand for other texts. To a great extent, therefore, our task will be to explain how citations are understood and used for selection purposes. Let us begin by noting briefly some special properties of citation.

**IMPLICIT AND EXPLICIT CITATION**

Reference to previously encountered texts is integral to the production of any document:

In very large measure, most books are about previous books. This is true at the level of the semantic code: writing persistently refers to previous writing. Explicit or implicit citation, allusion, reference are essential means of designation and proposition.

Steiner’s distinction between explicit and implicit citation deserves attention. We have recently become especially sensitive in library science to the applications of explicit citation to research and collection management. We have developed complicated statistical techniques that permit us to exploit with some apparent success the scholarly penchant for acknowledging direct textual origins and sources in published works.

There is, however, much more citation buried in any work than the explicit variety recorded in footnotes and rearranged in Garfield’s remarkable indexes. As Barthes has expressed it:

Every text, being itself the intertext of another text, belongs to the intertextual, which must not be confused with a text’s origins: to search for the “sources of” and “influence upon” a work is to satisfy the myth of filiation. The quotations from which a text is constructed are anonymous, irrecoverable, and yet already read: they are quotations without quotation marks.

To make sense of a text, in other words, is always to refer implicitly and for the most part unwittingly to texts one has previously experienced. “The ‘I’ which approaches the text is already itself a plurality of other texts.” The reader is very much the product of the texts he or she has come upon before; an individual’s ability not only to understand but also to evaluate and make other decisions about newly encountered documents (or other utterances) depends upon his or her reference to such personal textual experience.

A citation is also a text, and its understanding depends upon the reader’s referring, in turn, to other texts previously encountered and comparing and opposing those texts to the natural-language text of the citation. It is, therefore, to those other texts—to be found for the most part outside of the citation—that the selector must constantly turn wittingly and unwittingly in order to carry out his or her responsibilities. The citation, like any text, must function as an intertext: its use by the selector depends, in other words, upon the contexts in which the selector finds or puts it, for “any entity, and thus also any sign, is defined relatively, not absolutely, and only by its place in the context.” Decisions as to both the meaning of the citation and the appropriateness of the cited document for inclusion in the collection will be made, therefore, on the basis
of such contexts, and it is to the definition of these contexts that the remainder of this paper will be devoted. In my view there are three general categories: the syntagmatic context, the contexts of supplementation, and the contexts of resolution. These categories can be represented by the schematic shown in figure 1.

**The Syntagmatic Context**

Although most of the contexts affecting (and effecting) the selection decision exist external and in opposition to the citation, we must begin by recognizing the essential play of contexts that occurs within the citation itself. The citation, while perhaps not qualifying as a sentence, does nevertheless consist of a closed string of signs—primarily proper names and numbers—that represent certain qualities of the cited document. Convention dictates not only which qualities are selected for representation but also the order of their arrangement in the citation. Within such a closed, conventionalized construct, any element necessarily functions as the intertext of its neighbors. This is the relationship defined by Saussure as syntagmatic.

At the most basic bibliographic level, then, there exists a contextual relationship within any citation that permits the understanding and use of one element to be defined or influenced by another. (This relationship is represented in the schematic by the lines between the components of the citation.) Thus my assumptions about the nature of a treatise, say, on the history of the Jewish mercantile tradition will be different if I am expecting the citation to conclude “Zurich, 1982” and I find instead “Berlin, 1942.” My judgment will be similarly influenced if a document purporting to examine the philosophical foundations of the Enlightenment turns out to consist of seven pages rather than the seven hundred pages I was anticipating from the title. Another example of the use of the
syntagmatic context is the tendency to draw conclusions—usually totally unfounded—about an unknown publisher on the basis of the place of publication encountered previously in the citation.

The syntagmatic context, as we are defining it here, is thus based upon nothing more than the realization that any part of the citation can influence and be influenced by the citation as a whole.

**THE CONTEXTS OF SUPPLEMENTATION**

Citations used for selection are extracted from a variety of sources, most of which overlap notoriously in their coverage. One source is normally preferred over another because of the extent to which it provides or constitutes a supplementary context for the citations it contains. It is to these contexts that we now need to turn our attention. They can be divided into two general types that we will call direct and indirect supplementation.

Direct supplementation most frequently serves to increase the selector’s knowledge of the subject matter of the document cited. Such supplementary information may consist of a classification according to some standard system, or it may include subject headings as will be found in national bibliographies, for example, or in such sources as LC proof slips. This direct supplementation provides a special context that facilitates and complements the synoptic function of the cited title. At the same time we must admit, however, that classification of any kind tends also to close off or limit further speculation as to the potential qualities of the subject matter. Direct supplementation can therefore also have a negative effect on selection decisions. All tools employing classification, including especially our library catalogs, are powerful and subtle censorship devices that exclude all but a few of the subjects considered in the document. It is for this reason that in some cases we will want to use for selection a variety of sources that do overlap and provide independently the same type of direct supplementary data.

Further direct supplementation to the synopsis of subject matter in the citation may be supplied by annotations (as are found in subject bibliographies), and reviews (either in standard review sources like Publishers Weekly or scholarly journals). Yet direct supplemented need not always serve to improve our knowledge of the subject matter. Notes in a catalog, for example, may supplement the date information in the citation by identifying the document as a reprint. Antiquarian catalogs are especially rich in this kind of direct supplementation, frequently including essential information on the document’s physical or publishing history.

In all cases we must bear in mind, however, that these data remain, from a bibliographical point of view, supplementary. Anything outside of the citation has bibliographical significance only as context. Even the document itself, which serves as a context of supplementation when an approval plan is used for selection, is an addendum to the citation and is not necessarily, as has been recently maintained, “the best possible source of information” for a selection decision. Having the document in hand may provide a good context for the selector’s determination of the subject matter, but the selector’s decision as to the significance and ap-
propriateness of the document for the collection will depend far more heavily upon other contexts of supplementation, as well as other varieties of contextual data that we still have to define. The document itself is only one more context, and it itself must still be understood within other contexts. Indeed, it is a purpose in this paper to emphasize that the understanding and use of any text always depends on what is not in it—on other texts, on contexts. Thus while the document itself can serve as one useful context to the citation, it plays no privileged role in the selection decision precisely because its bibliographical value—like its literary or historical value—will depend upon the environment or context in which it is placed.

The other general type of supplementation provided by selection sources we will label indirect supplementation. While direct supplementation, as we have seen, increases the selector's understanding of individual components of the citation, such as the title or the date, indirect supplementation tends normally to increase or influence our estimate of the citation as a whole and thus our conclusions about the cited document. The context provided by indirect supplementation derives from the material in the source not directly linked to the particular citation being considered, i.e., from the other citations listed as well as the purpose and quality of the source itself. Thus it is possible to infer from a citation in a national bibliography no special quality except the country of publication. A citation in a packet of vendor slips implies a conscious act of selection by a vendor based on his interpretation of a prearranged profile. A citation in a core list such as Books for College Libraries or a citation drawn from citation studies of core journals also provides a context from which the selector can infer certain qualities of the cited documents.

In some rare cases, moreover, the indirect supplementation can be used as the sole foundation for a selection decision. If, for example, an American library collects contemporary fiction, then that library will almost certainly select a novel reviewed on the front page of the New York Times Book Review regardless of who wrote the novel, where it was published, what it is about, or even what the review says about it. The decision is made on the basis of the citation context with little regard at all for any information contained in the citation itself. Another example is provided by the use in research libraries of book reviews in core journals covering scholarly subjects: the citation's status in such cases comes not so much from the direct supplementation of the conclusions in the review as from the indirect circumstance that the document represented by the citation was reviewed in such an important journal.

Indirect supplementation can also add to the selector's view of the accessibility of the cited document. Published library catalogs, the National Union Catalog, or national databases such as RLIN or OCLC are also used as sources for selection—although frequently after the citation has already been found in another source. Routine interlibrary cooperation, to the extent that it is practicable, depends initially upon relating citations for works under consideration to the larger supplementary context of multilibrary catalogs or databases.

We must, finally, not overlook the indirect supplementation provided
when the source of the citation is a library user. The character and legitimacy of the user can and frequently does in such cases supplement indirectly the selector’s understanding and use of the citation. In extreme situations the nature of the citation can be totally eclipsed by the status of the requester, for bibliography, like any other human activity, must often be carried out within a political context.

**THE CONTEXTS OF RESOLUTION**

While the syntagmatic context and the contexts of supplementation are represented by discrete texts fairly easily discernible on a case-by-case basis, the third and most unique context category upon which selection depends belongs primarily to the selector and is not immediately available for general scrutiny. These contexts of resolution, as I will call them, are at once the most crucial to selection and the most elusive, for while their presence pervades the selection process, their individual qualities are ultimately visible only as mirrored in their product—the collection. The realization that selection as a branch of librarianship, consists of “the exercise of choice and judgment,”10 the charge that selection is an art rather than a craft, or the suspicion that subjectivity in selection is unavoidable—these conclusions follow logically from the fact that the suitability of the cited document is finally determined on the basis of a context that can only be privately assembled and applied.

The contexts of resolution are a set of three interrelated and competing contexts: the archival, the communal, and the thematic.11 I have arranged these in the schematic vertically above the linear citation.) The archival context is equivalent to the selector’s knowledge of what is already in the collection. The communal context is the selector’s understanding of the research needs and interests of the clientele. The thematic context is the selector’s awareness of what is being (or has been) published on the subject. Like all texts, these have their origins in individual experience and, since no two individuals have ever had the same combinations of experience, no two selectors can ever operate with exactly the same contexts of resolution. Also, like all other texts, these are constantly evolving as the selector gradually increases his or her experience of what the collection consists of, what the users are concerned with, and what the subject is developing into.

The final selection decision is, therefore, normally made by relating the linear components of the citation, as influenced by each other (i.e., syntagmatically) and as supplemented directly and indirectly by the source, to the contexts of resolution. (This process is symbolized in the schematic by those points at which the vertical lines from the citation and the horizontal lines extending from the three contexts of resolution intersect or connect.) The configuration of such connections will, of course, vary radically from one citation to another. Some of the connections will not be made at all, others will be of minor—or merely supportive—importance in the decision, while a few will play a major role in judging the document’s appropriateness. A simplified, generalized example of a selection decision might therefore proceed as follows: “While this subject is currently in fashion (title in thematic context), I will not select it
because none of my constituency is currently working on it (title in communal context); and even if I am wrong on that account and someone is working on this subject, that individual would probably want a newer document (date in communal context); above all I feel justified in not ordering this document in any case because it is published by a vanity press and except in highly unusual cases we do not by policy collect vanity press publications (publisher in archival context).” There are, needless to say, a vast variety of combinations of connection and emphasis. Often a major connection will cancel out the less significant connections, while at other times minor connections can gang up on a major connection, obstruct its authority, and bring about the opposite selection decision.

Why, then, do certain connections within these contexts of resolution have greater influence on the selection decision than others? In the first place this influence can proceed from inferences drawn from the syntagmatic context or from supplementation supplied by the selection source. But this variant significance that we note in these contextual connections has another origin as well: the inevitable weighting in different situations of the three contexts. Depending upon such factors as the goals of the library, the nature of the subject, the status of the subject within the library, and the predilections of the individual selector, the three contexts will be prioritized. One context will always take precedence over the other two. There are, in other words, archival and thematic and communal libraries and subjects and selectors. While such weighting is inevitable, however, the contexts are in my experience seldom if ever exclusive. All three will play a role in virtually all selection: one will normally tend to dominate, but its dominance will be tempered by the other two.

Probably the clearest example of the dominance of the archival context in selection decisions will be found in a special collections department. While special collections selectors will obviously take into account the state of the subject under consideration and the patterns of use in the library, their primary consideration in selection will normally be—and should normally be—what is already in the collection. The communal context, on the other hand, becomes dominant in smaller academic libraries, small or medium public libraries, and in the development of working collections in larger academic libraries. Finally, research collections are produced for the most part by giving primary emphasis to the thematic context: the selector’s concern is to construct a collection that reflects what is occurring (in the sense of what is being or has been published) in the subject.

The origins of the selector’s experience, from which such contexts of resolution evolve, also vary considerably depending upon the emphasis given in selection to one context over the others. The individual selector, in other words, can and normally will attempt to mold or control his own experience. If the archival context plays less of a role in selection than the other contexts—as will be the case, for example, in the building of smaller academic collections—experience from which that context derives will tend to consist for the most part of the previous selection deci-
sions made by that particular selector. The more weight given the archi-
vival context, the more systematized its construction will be, frequently in
the form of written policy, and the greater the concern to measure the
accuracy of selection decisions through some form of collection evalua-
tion. It is a quality of the archival perspective, moreover, that the results
of evaluation tend to be used as the primary basis for the formulation of
collection policy. The patterns of previous development—regardless of
whether they have evolved from accident or design—provide a powerful
foundation for decisions on future development. Strong areas of a collec-
tion built with archival emphasis will continue to be strengthened, while
weaker areas will continue to be ignored.

Like the archival context, the communal context can be developed ei-
ther casually or intensively, depending on the degree of significance as-
cribed to that context in the selection process. If it is considered less im-
portant, the communal context will evolve piecemeal as a result of
day-to-day contact with users. If it is understood as having greater sig-
nificance, it will develop through systematic and aggressive use and user
studies. In extreme forms of communal context dominance, the users
themselves can become the selectors, at which point the archival and the-
ematic considerations become increasingly suspect and suppressed. The
purpose of the communal context is to respond to the needs of the users,
and in such extreme forms easily discernible user actions—normally in
the form of circulation—will tend to define those needs to a large extent.
Evidence of the dominance of the communal context will be found not
only in the recent user-defined selection approaches in Baltimore but also in Gore’s vision
of the Alexandrian menace, as well as in the infamous Pitt study.

The thematic context derives its origin from exposure to publishing
trends. Like the other two contexts, the attention given to the develop-
ment of the thematic context also depends on the significance attributed
to it in the selection process. If it is seen as less significant, the selector
will develop it in the course of routine selection by noting generally in
selection sources which subjects are being treated. If, on the other hand,
the thematic context is to play a dominant role in selection, then the se-
lector will actively endeavor to increase his exposure to the main trends
in the subject by, among other things, more reading of the secondary
subject literature.

Of the three contexts, the thematic is the one that is most susceptible to
charges of accepting the fallacy of comprehensiveness. The purpose of
the library from the thematic perspective, however, is not to collect
everything on the subject (which is neither possible nor desirable), but
rather to acquire a judiciously selected representation of not only the
topics that are being publicly considered but also in the proportion they
are being so considered. Thus while the library clearly does not seek
comprehensiveness, it does attempt to maintain generally the same pro-
portions between subject areas that a theoretically comprehensive collec-
tion might maintain. While the communal context, moreover, is inten-
tended to provide the selector with the capacity and the responsibility to
respond to the needs of the clientele, the thematic context is intended
rather primarily to create such needs—needs that the library may or may not be able to satisfy. In some cases information needs will be generated that no library can satisfy, and the user will consequently be obliged to discover or invent such information for himself.

The thematic context is predicated to a great extent upon the assumption that the user should make his or her own selections from among library holdings. If different points of view and approaches have been published, then the user must have the opportunity to make a choice among them. And selection always entails rejection. From the communal perspective, therefore, there must always be a certain amount of wastage in any thematically developed collection. We must recall, however, that to decide not to use a book is to use it. For the researcher to decide that nothing but trash has been published for the last five years in his subject, that trash must be available in the library to be identified as such.

The thematic context is especially important in the university library because it forms the basis for an unwritten contract between the faculty and the library. The faculty has increasingly abrogated its responsibility for selection on the assumption, I believe, that the library will continue to provide a representative collection that the faculty can use to determine the current condition of the various subjects treated at the institution. This approach represents a significant difference between the way research collections used to be built by the faculty and the way they are currently built by subject selectors.

It should also be noted that in a collection development effort dominated by the thematic context, deselection and preservation become especially problematic. In collections or subjects where the communal or archival contexts dominate, such decisions are relatively straightforward. The communally dominated library preserves items people are using (i.e., borrowing) and weeds the rest. The archivally dominated library will normally avoid much weeding and will preserve what it defines as its collections of distinction. In the thematically dominated library, however, the selectors have trained themselves—frequently with considerable difficulty—to suspend judgment. By operating according to a system that leaves to the user the responsibility for evaluating the quality of individual documents, selectors deny themselves an easily accessible scale of value that could serve as a basis to determine what to keep and what to discard, what to preserve and what to allow to disintegrate. This is an especially alarming situation since clearly most of the preservation must be done by larger research libraries, the building of which is primarily thematically oriented. The solution to this situation has been either to abandon the thematic approach in favor either of the archival method of preserving strong collections or the communal-eclectic method of preserving whatever turns up in circulation requiring repair. The other alternative has been to maintain the thematic perspective as much as possible but to diffuse its effects through interinstitutional cooperation.

The final ingredient in our description of the selection process must inevitably be the budget. Clearly the budget does figure conspicuously
in any selection decision, but just as clearly it should not be used as a
basis for selection. Its purpose should rather be to regulate the extent to
which such contexts of resolution are applied. Generally speaking, this
regulation is accomplished in the course of routine selection by allowing
the opposition between the three contexts to become increasingly equal
and thus to restrict each other. The better the budget, in other words, the
more one context can achieve dominance and be more fully imple-
mented. The tighter the budget, however, the more the selector must
allow the contexts to play against each other, suppressing the excesses of
the dominant one. In thematically dominated selection, for example, the
selector will base cutbacks on the communal criterion that no one is do-
ing research on the subject in his or her institution. Conversely, in a
communally based selection situation, reduction can be made using the
thematic criterion that a particular area of the subject is not receiving
much attention generally, and that material on that subject should be of
less interest to specific scholars at the institution.

CONCLUSIONS

Although the contexts of resolution are, as we have seen, weighted,
and although that weighting can be consciously adjusted by the selector,
evertheless, these contexts remain in their aggregate both unique to the
individual selector and self-justifying. Written policies may, of course,
be used to provide some regulation and coordination among selectors,
but such policies no matter how detailed must still always be interpreted
by each selector on the basis of his or her personal experience at the time
of each selection decision. While it is possible to establish certain guide-
lines that can be more or less mechanically applied on the basis of infor-
mation discernible in the citation and in the surrounding supplementary
data provided directly or indirectly by selection sources, there can be no
final, impartial, objective determination as to precisely what belongs in
a particular collection and what does not; for every citation remains
from the standpoint of every individual a single intertext in a vast net-
work of personal and constantly evolving contexts that influence deci-
sively the citation’s meaning and significance.

This is not to purport, of course, that selection is chaotic. Contexts
overlap greatly between individuals, so that most instances of selection
invite little dispute. But overlap is not coincidence, and creativity and
interpretation must therefore not only be accepted but also respected
and even encouraged as essential to the conduct of effective and respon-
sible selection.

NOTES AND REFERENCES

2. It has recently become fashionable to distinguish references from citations so that the
‘‘number of references a paper has is measured by the number of items in its bibliog-
raphy as endnotes and footnotes, etc., while the number of citations a paper has is
found by looking it up in some sort of citation index and seeing how many other
papers mention it’’ (Derek J. De Solla Price, “Citation Measures of Hard Science,
Soft Science, Technology and Nonscience," in Communicating among Scientists and Engineers, ed. Carnot E. Nelson [Lexington, Mass.: Heath, 1970], p.7). I have preferred not to adopt this convention because the word citation has a well-established and specific meaning, while the term reference should be reserved for more general uses, including the primary activity of the citation.


8. Ferdinand de Saussure, Course in General Linguistics, trans. Roy Harris (London: Duckworth, 1983), p.121–23. Throughout the discussion I have omitted reference to the other relationship posited by Saussure, the "associative" or what we now call the paradigmatic. To the extent that the paradigmatic implies the facility to establish some form of lexical meaning, its presence does not require special note since I am assuming that the selector can understand the natural language of which the citation is composed. To the extent that the paradigmatic is understood as the "axis of opposition," i.e., that sense is made of signs by opposing them to other signs in the language, the "contexts of resolution" that I formulate in the latter half of this paper are intended to serve precisely that function in the selection process.


11. Dan C. Hazen, in his "Collection Development, Collection Management and Preservation," Library Resources & Technical Services 26: 7–8 (Jan./Mar. 1982), has carefully posited "five distinct but interrelated factors" as the basis for collection development decisions: (a) "academic activity or user demand," (b) "historical precedent," (c) "volume and cost of materials," (d) "availability of alternatives to purchase," and (e) "discipline-specific models of access to information." While I would certainly endorse the particular significance of these five factors, I believe (as apparently does Hazen) that they are, nevertheless, very different kinds of knowledge which will be used differently in selection decisions. Hazen’s factors a, b, and c correspond roughly to the communal, archival, and thematic contexts, respectively, that I am formulating. Hazen’s factor d I would relegate to—in my nomenclature—the contexts of supplementation. Finally, as I will note at the end of this paper, I believe the budget should be viewed not as a criterion for selection but rather as an influence upon the relative extent to which selection criteria are acted upon.


Profiling Vendor Performance

James K. Bracken and John C. Calhoun

Giving a single wholesaler virtually all of the Knox College Library's firm orders, in return for promises of better delivery and discount, necessitated a change in the method of evaluating wholesaler performance. Unable to compare our vendor with his competitors, we instead attempted to profile the vendor's performance, coding the firm orders by response time in weeks and then arranging them by accounts (or subject areas) and by publishers. This method allowed us to identify specific strengths and weaknesses in our vendor's stock and to determine how well he could serve the particular needs of the library. About thirty-six hundred orders in twenty-nine accounts (or subject areas) and forty trade and academic publishers were analyzed, with the results indicating that, despite the vendor's claims for the comprehensiveness of his stock, in fact, only 40 to 50 percent of our orders could be filled from his stock, and, furthermore, his performance with regard to both subjects and publishers varied as much as 50 percent. The findings suggest that order periods should be shortened from twenty or twenty-four weeks to sixteen or twelve weeks to encourage delivery and that a vendor's performance with specific subjects and publishers should be considered before placing orders.

Heretofore most evaluation of jobbers, suppliers, and wholesalers has been comparative—either of vendors to publishers' or domestic dealers to one another. Although the effect of differing subjects or publishers is sometimes noted in passing (medical versus nonmedical books, or BIP versus non-BIP titles), most studies concentrate on delivery and discount (whether in theory, or in practice). Insofar as we know, no one has attempted an analysis of vendor performance by subject and publisher, the way a dealer attempts to profile a library for an approval program.

In 1981, the Knox College Library was splitting about half of its firm orders between two major jobbers in closest geographical proximity (one in Momence, Illinois, and the other in Bridgeton, Missouri) and sending the other half to some two hundred publishers directly. Early in 1982, in order to reduce the number of invoices the publisher-direct orders produced, the library concluded an agreement with one of its two major suppliers which would give that wholesaler virtually all (93 percent) of the library's firm orders, both domestic and foreign, in return for a promise of better delivery and discount. For the remaining 7 percent (260 titles), we were instructed to place orders with six other deal-

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ers: an art retailer, a paperback publisher, and a record dealer in New York, a Spanish-language retailer in San Diego, a Parisian exporter, and a London bookseller.

This consolidation necessitated a change in the evaluation procedures, since we could no longer compare our vendor's performance to a competitor's as recommended by Melcher. We had certain subjective impressions (that recently reviewed titles were easier to obtain than replacement titles, or, as Ford has noted, that titles from commercial publishers were easier to obtain than those from academic presses), but these impressions were difficult to verify, and we began to feel the need for a report more sophisticated than one which measured only response time and discount.

Since we were in the habit of sorting our statistics file by account and publisher, a folder from our major vendor describing his approval program, which used a list of subject descriptors and included a list of preferred publishers, suggested the design of the new report. If we could code the firm orders by response time in weeks and then arrange them by accounts (subject areas) and publishers, the elements of the dealer's performance would become clear. After seeing these elements grouped by weeks, we might know better whether we would like to see them in larger blocks (semimonthly, monthly, or bimonthly) also.

Early in 1983, the director of the college's Data Processing Center wrote two short programs that permitted us to do this. The first calculated a time-period code by subtracting the date ordered from the date received and inserted the result into each record of the statistics file. The length of the time period could be one or several weeks, at our convenience. The second printed the titles of a specified dealer from the edited statistics file, which had been sorted by the code and subarranged by account or publisher, and summed the number of titles of each time period. By the end of the fiscal year, we had gathered enough data to test our impressions. We examined 3,621 orders in twenty-nine accounts, or subject areas, paying particular attention to the forty publishers we thought to be most valuable to either an academic or public library. Although we used a computer, there is no reason that the method could not be used with edge-notched cards to indicate response time in weeks and alphabetized within each group by account or publisher, realphabetizing if the file is blocked in longer periods.

**RESULTS OF THE STUDY**

**Vendor's Overall Performance**

What we discovered as the result of our efforts confirmed some of our initial subjective impressions: 224 of 233 titles (96 percent) ordered from the one-week account (titles of contemporary interest selected from Library Journal, New York Times Book Review, Publishers Weekly, and The Times Literary Supplement) were delivered within twenty weeks, while only 78 of 147 titles (53 percent) ordered from the replacement account were received in a similar period. It also became apparent, however, that not all commercial publishers were equally easy, nor all academic presses equally difficult to obtain. Despite the dealer's claims for the compre-
sensiveness of his stock, his performance with regard to both subjects and publishers varied a good deal.

Since almost all of the library's firm orders were for titles identified in the major reviewing sources (Choice for most departmental orders, and Library Journal and Publishers Weekly for most general orders) and, in any case, all were for titles then in print, we anticipated speedy fulfillment; but, in fact, of the 3,621 firm orders sent to the vendor in 1982–83, only 1,790 (about half) were filled within ten weeks, and within the entire twenty-week-plus order period, the dealer supplied only 2,924 titles (81 percent). We were still concerned that the vendor could fill only four out of five orders, just as we had been the previous year with a cancel-if-not-received-in-sixteen-weeks policy; but also we were now concerned with the pattern of fulfillment we found, illustrated in figure 1. Apparently only about 40 to 50 percent of our orders could be filled from stock, that is, within two or three months, while 30 to 40 percent required several months additional handling time.

Our experience from the previous year had suggested that the lengthening of the firm order period from three or four months to five or six months insured only that the last 10 percent came in later than ever, and the data in table 1 support that conclusion. To compel its vendor to pro-

Figure 1
Graph of Vendor Performance by Weeks
TABLE 1
Vendor Performance by Weeks

<table>
<thead>
<tr>
<th></th>
<th>No. of Titles</th>
<th>Cumulated Total</th>
<th>Cumulated Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third week</td>
<td>561</td>
<td>561</td>
<td>15</td>
</tr>
<tr>
<td>Fourth week</td>
<td>404</td>
<td>965</td>
<td>27</td>
</tr>
<tr>
<td>Fifth week</td>
<td>175</td>
<td>1,140</td>
<td>31</td>
</tr>
<tr>
<td>Sixth week</td>
<td>131</td>
<td>1,271</td>
<td>35</td>
</tr>
<tr>
<td>Seventh week</td>
<td>100</td>
<td>1,371</td>
<td>38</td>
</tr>
<tr>
<td>Eighth week</td>
<td>148</td>
<td>1,519</td>
<td>42</td>
</tr>
<tr>
<td>Ninth week</td>
<td>100</td>
<td>1,619</td>
<td>45</td>
</tr>
<tr>
<td>Tenth week</td>
<td>171</td>
<td>1,790</td>
<td>49</td>
</tr>
<tr>
<td>Eleventh week</td>
<td>137</td>
<td>1,927</td>
<td>53</td>
</tr>
<tr>
<td>Twelfth week</td>
<td>178</td>
<td>2,105</td>
<td>58</td>
</tr>
<tr>
<td>Thirteenth week</td>
<td>177</td>
<td>2,282</td>
<td>63</td>
</tr>
<tr>
<td>Fourteenth week</td>
<td>174</td>
<td>2,456</td>
<td>68</td>
</tr>
<tr>
<td>Fifteenth week</td>
<td>81</td>
<td>2,537</td>
<td>70</td>
</tr>
<tr>
<td>Sixteenth week</td>
<td>66</td>
<td>2,603</td>
<td>72</td>
</tr>
<tr>
<td>Seventeenth week</td>
<td>51</td>
<td>2,654</td>
<td>73</td>
</tr>
<tr>
<td>Eighteenth week</td>
<td>53</td>
<td>2,707</td>
<td>75</td>
</tr>
<tr>
<td>Nineteenth week</td>
<td>31</td>
<td>2,738</td>
<td>76</td>
</tr>
<tr>
<td>Twentieth week</td>
<td>41</td>
<td>2,779</td>
<td>77</td>
</tr>
<tr>
<td>Twenty-first week</td>
<td>46</td>
<td>2,825</td>
<td>78</td>
</tr>
<tr>
<td>Twenty-second week</td>
<td>33</td>
<td>2,858</td>
<td>79</td>
</tr>
<tr>
<td>Twenty-third week</td>
<td>47</td>
<td>2,905</td>
<td>80</td>
</tr>
<tr>
<td>Twenty-fourth week</td>
<td>19</td>
<td>2,924</td>
<td>81</td>
</tr>
<tr>
<td>Not received</td>
<td>697</td>
<td>3,621</td>
<td>100</td>
</tr>
</tbody>
</table>

To provide more expeditious service, a library might well consider shortening its order period from twenty or perhaps twenty-four weeks to sixteen or even twelve weeks rather than extending it. This action would allow a library to reorder the unfilled titles from competing dealers before the unprofitable later weeks of an extended order period.

We were able to test this thesis in January when 274 orders unfilled by our major vendor were placed with six competing dealers, who were not told that we had previously tried to obtain the titles from another vendor. Of these 274 orders, some 103 (38 percent) were filled in ten weeks and 165 (60 percent) were filled in twenty weeks. One of these vendors, the one whose services were severely curtailed upon reaching agreement with our major vendor, managed to supply within ten weeks 21 of 43 titles (49 percent) from the orders sent to him; and another vendor, from his eastern affiliate in Blackwood, New Jersey, was also able to provide in twenty weeks 26 of 37 titles (70 percent). The 274 orders placed with the six different dealers represented almost 40 percent of the 697 titles unfilled by our major vendor. Had all of the unfilled orders been similarly placed and filled at the rate the six dealers averaged, we could have received 3,344 titles from the 3,621 orders (92 percent). As things were, use of the six vendors helped us to augment total fulfillment by 4 percent. We believe this performance indicated that our major vendor could, at a
minimum, have improved his performance by 4 percent, and, were he to work as hard as his competitors all year long, by 11 percent—since we are confident that he had as much access to the publishers of the titles he did not stock as the six dealers had.

RESULTS BY ACCOUNTS

After compiling the data in table 1, we decided to examine the performance after ten weeks and after twenty weeks. For convenience, we have also arranged the accounts and publishers into four distinct performance groups in tables 2 and 3.

Titles from three accounts or subject areas (the one-week account, philosophy and religion, and psychology) were readily available more than half of the time and could eventually be obtained a little more than nine-tenths of the time. We characterized this as the best performance.

Eleven accounts or subject areas (audiovisual account, economics and business administration, English, French, history, international relations, the librarian’s account, physical education and athletics, the reference account, technical services account, and theater and speech communications) were readily available half the time and could eventually be obtained more than three-fourths of the time. We characterized this performance, which was also typical of our vendor’s overall performance, as average.

However, five other accounts or subject areas (biology, chemistry, education, physics, and Spanish) were readily available less than half the time, although they could eventually be obtained a little more than four-fifths of the time. We characterized this performance as slow.

And finally, ten accounts or subject areas (art, classics, geology, German, mathematics and computer science, music, political science, the replacement account, Russian, and sociology and anthropology) were readily available less than half the time and could eventually be obtained only a little more than two-thirds of the time. We characterized this as the poorest performance.

RESULTS BY PUBLISHER

Publications from five commercial houses (Academic Press, Basic Books, Doubleday, Knopf, and St. Martin’s Press) and eight outstanding academic presses (Indiana University, Johns Hopkins University, Princeton University, Southern Illinois University, University of Chicago, University of Minnesota, University of North Carolina, and Yale University) were readily available from the vendor more than half the time and could eventually be obtained a little more than nine-tenths of the time. We characterized this performance as the best (see table 3).

Material from eight large commercial publishers (Barnes & Noble, Harper, Lexington Books, Little, Brown, Norton, Random House, Viking Press, and Westview Press), together with two outstanding academic presses (Columbia University and Cornell University), was readily available about two-thirds of the time and could eventually be obtained more than three-fourths of the time. We characterized this performance as average.

However, publications of seven large commercial houses (Pergamon
TABLE 2
EVALUATION OF VENDOR PERFORMANCE BY ACCOUNT

<table>
<thead>
<tr>
<th>Account Titles</th>
<th>Orders Placed</th>
<th>Orders Received</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>In 10 Weeks</td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td><strong>Group 1—Best performance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One-week account</td>
<td>233</td>
<td>204</td>
</tr>
<tr>
<td>Philosophy and religion</td>
<td>121</td>
<td>83</td>
</tr>
<tr>
<td>Psychology</td>
<td>127</td>
<td>72</td>
</tr>
<tr>
<td><strong>Group 2—Second best performance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audiovisual account</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Economics and business administration</td>
<td>142</td>
<td>90</td>
</tr>
<tr>
<td>English</td>
<td>250</td>
<td>143</td>
</tr>
<tr>
<td>French</td>
<td>26</td>
<td>21</td>
</tr>
<tr>
<td>History</td>
<td>265</td>
<td>145</td>
</tr>
<tr>
<td>International relations</td>
<td>145</td>
<td>80</td>
</tr>
<tr>
<td>Librarian’s account</td>
<td>632</td>
<td>329</td>
</tr>
<tr>
<td>Physical education and athletics</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Reference account</td>
<td>155</td>
<td>78</td>
</tr>
<tr>
<td>Technical services account</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Theater and speech communications</td>
<td>85</td>
<td>45</td>
</tr>
<tr>
<td><strong>Group 3—Third best performance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biology</td>
<td>96</td>
<td>42</td>
</tr>
<tr>
<td>Chemistry</td>
<td>36</td>
<td>16</td>
</tr>
<tr>
<td>Education</td>
<td>72</td>
<td>33</td>
</tr>
<tr>
<td>Physics</td>
<td>64</td>
<td>19</td>
</tr>
<tr>
<td>Spanish</td>
<td>49</td>
<td>18</td>
</tr>
<tr>
<td><strong>Group 4—Poorest performance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art</td>
<td>50</td>
<td>22</td>
</tr>
<tr>
<td>Classics</td>
<td>128</td>
<td>18</td>
</tr>
<tr>
<td>Geology</td>
<td>158</td>
<td>44</td>
</tr>
<tr>
<td>German</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Mathematics and computer science</td>
<td>166</td>
<td>67</td>
</tr>
<tr>
<td>Music</td>
<td>69</td>
<td>28</td>
</tr>
<tr>
<td>Political science</td>
<td>150</td>
<td>54</td>
</tr>
<tr>
<td>Replacement account</td>
<td>147</td>
<td>34</td>
</tr>
<tr>
<td>Russian</td>
<td>28</td>
<td>8</td>
</tr>
<tr>
<td>Sociology and anthropology</td>
<td>198</td>
<td>80</td>
</tr>
</tbody>
</table>

*Group 1: vendor supplied more than 50 percent of the orders in ten weeks and more than 90 percent in twenty weeks. Group 2: vendor supplied 50 percent or more of the orders in ten weeks but less than 90 percent in twenty weeks. Group 3: vendor supplied less than 50 percent of the orders in ten weeks but more than 80 percent in twenty weeks. Group 4: vendor supplied less than 50 percent of the orders in ten weeks and less than 80 percent in twenty weeks.

Press, Plenum Publishing, Praeger Publishers, Prentice-Hall, Routledge & Kegan Paul, Springer-Verlag, and John Wiley & Sons) and four outstanding academic presses (Cambridge University, New York University, University of California, and University of Texas) were readily available less than half the time, although they could eventually be obtained a little more than four-fifths of the time. We characterized this performance as slow.

And finally, books published by three commercial houses (W. H.
Freeman, Greenwood Press, and McGraw-Hill) and by three outstanding academic presses (Harvard University, Oxford University, and University of Illinois) were readily available only a third of the time or less and could eventually be obtained only about two-thirds of the time. We characterized this as the least satisfactory performance.

The forty publishers of table 3 form a core of about half the 3,621 firm orders from the twenty-nine accounts of table 2 and, together with the exclusions noted in the second paragraph (the modifiers of the vendor’s profile), comprise the elements of a delivery capability statement after the model of a Boolean literature search strategy.

<table>
<thead>
<tr>
<th>Publisher Name</th>
<th>Orders Placed</th>
<th>Orders Received In 10 Weeks</th>
<th>Orders Received In 20 Weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1—Best performance*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Press</td>
<td>81</td>
<td>41</td>
<td>51</td>
</tr>
<tr>
<td>Basic Books</td>
<td>20</td>
<td>17</td>
<td>85</td>
</tr>
<tr>
<td>Doubleday &amp; Co.</td>
<td>26</td>
<td>20</td>
<td>77</td>
</tr>
<tr>
<td>Indiana University Press</td>
<td>38</td>
<td>35</td>
<td>92</td>
</tr>
<tr>
<td>Johns Hopkins University Press</td>
<td>39</td>
<td>25</td>
<td>64</td>
</tr>
<tr>
<td>Alfred A. Knopf</td>
<td>42</td>
<td>34</td>
<td>81</td>
</tr>
<tr>
<td>Princeton University Press</td>
<td>63</td>
<td>42</td>
<td>67</td>
</tr>
<tr>
<td>Southern Illinois University Press</td>
<td>11</td>
<td>10</td>
<td>91</td>
</tr>
<tr>
<td>St. Martin’s Press</td>
<td>60</td>
<td>50</td>
<td>83</td>
</tr>
<tr>
<td>University of Chicago Press</td>
<td>50</td>
<td>38</td>
<td>76</td>
</tr>
<tr>
<td>University of Minnesota Press</td>
<td>11</td>
<td>9</td>
<td>82</td>
</tr>
<tr>
<td>University of North Carolina Press</td>
<td>12</td>
<td>11</td>
<td>92</td>
</tr>
<tr>
<td>Yale University Press</td>
<td>49</td>
<td>30</td>
<td>61</td>
</tr>
<tr>
<td>Group 2—Second best performance*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barnes &amp; Noble Books</td>
<td>26</td>
<td>19</td>
<td>73</td>
</tr>
<tr>
<td>Columbia University Press</td>
<td>26</td>
<td>16</td>
<td>62</td>
</tr>
<tr>
<td>Cornell University Press</td>
<td>38</td>
<td>23</td>
<td>61</td>
</tr>
<tr>
<td>Harper &amp; Row</td>
<td>48</td>
<td>33</td>
<td>69</td>
</tr>
<tr>
<td>Lexington Books</td>
<td>20</td>
<td>17</td>
<td>85</td>
</tr>
<tr>
<td>Little, Brown &amp; Co.</td>
<td>24</td>
<td>19</td>
<td>79</td>
</tr>
<tr>
<td>W. W. Norton &amp; Co.</td>
<td>32</td>
<td>19</td>
<td>59</td>
</tr>
<tr>
<td>Random House</td>
<td>37</td>
<td>26</td>
<td>70</td>
</tr>
<tr>
<td>Viking Press</td>
<td>25</td>
<td>14</td>
<td>56</td>
</tr>
<tr>
<td>Westview Press</td>
<td>27</td>
<td>15</td>
<td>56</td>
</tr>
<tr>
<td>Group 3—Third best performance*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cambridge University Press</td>
<td>110</td>
<td>48</td>
<td>44</td>
</tr>
<tr>
<td>New York University Press</td>
<td>16</td>
<td>7</td>
<td>44</td>
</tr>
<tr>
<td>Pergamon Press</td>
<td>26</td>
<td>8</td>
<td>31</td>
</tr>
<tr>
<td>Plenum Publishing Corp.</td>
<td>19</td>
<td>6</td>
<td>32</td>
</tr>
<tr>
<td>Praeger Publishers</td>
<td>43</td>
<td>19</td>
<td>44</td>
</tr>
<tr>
<td>Prentice-Hall</td>
<td>45</td>
<td>19</td>
<td>42</td>
</tr>
<tr>
<td>Routledge &amp; Kegan Paul</td>
<td>22</td>
<td>8</td>
<td>36</td>
</tr>
<tr>
<td>Springer-Verlag</td>
<td>57</td>
<td>16</td>
<td>28</td>
</tr>
</tbody>
</table>
### TABLE 3 (Continued)

<table>
<thead>
<tr>
<th>Publisher Name</th>
<th>Orders Placed</th>
<th>Orders Received</th>
<th>In 10 Weeks</th>
<th>In 20 Weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of California Press</td>
<td>48</td>
<td>22</td>
<td>46</td>
<td>43</td>
</tr>
<tr>
<td>University of Texas Press</td>
<td>11</td>
<td>5</td>
<td>45</td>
<td>11</td>
</tr>
<tr>
<td>John Wiley &amp; Sons</td>
<td>93</td>
<td>41</td>
<td>44</td>
<td>77</td>
</tr>
<tr>
<td><strong>Group 4—Poorest performance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W. H. Freeman &amp; Co.</td>
<td>33</td>
<td>13</td>
<td>39</td>
<td>22</td>
</tr>
<tr>
<td>Greenwood Press</td>
<td>61</td>
<td>10</td>
<td>16</td>
<td>46</td>
</tr>
<tr>
<td>Harvard University Press</td>
<td>132</td>
<td>34</td>
<td>26</td>
<td>95</td>
</tr>
<tr>
<td>McGraw-Hill</td>
<td>28</td>
<td>12</td>
<td>43</td>
<td>22</td>
</tr>
<tr>
<td>Oxford University Press</td>
<td>118</td>
<td>49</td>
<td>42</td>
<td>88</td>
</tr>
<tr>
<td>University of Illinois Press</td>
<td>42</td>
<td>9</td>
<td>21</td>
<td>21</td>
</tr>
</tbody>
</table>

*Group 1: vendor supplied more than 50 percent of the orders in ten weeks and more than 90 percent in twenty weeks. Group 2: vendor supplied 50 percent or more of the orders in ten weeks but less than 90 percent in twenty weeks. Group 3: vendor supplied less than 50 percent of the orders in ten weeks but more than 80 percent in twenty weeks. Group 4: vendor supplied less than 50 percent of the orders in ten weeks and less than 80 percent in twenty weeks.

### CONCLUSION

It is in the interests of every acquisitions or collection development librarian intent on obtaining the best services for the money to develop for each of the dealers serving the library a performance profile that measures the handling of subjects ordered and publishers from which the library customarily orders. The effort will identify the unique strengths and weaknesses of each vendor’s stock. No jobber, supplier, or wholesaler can be expected to supply a library with information of this kind. As Lincoln concluded, to do so would be to “give their competition free information.”

Unlike evaluations that compare different dealers in the most general terms of fulfillment and delivery, profiling by subjects and publishers enables a librarian to assess a dealer’s performance in the particular and, ultimately, to calculate the chances of fulfillment and rates of delivery for any currently-in-print title the library might consider ordering from that vendor. Such knowledge can profitably be put to use to enhance overall fulfillment and delivery.

Vendor performance profiling which considers subjects and publishers can identify specific segments of a library’s acquisitions program in need of additional attention in order to increase fulfillment and delivery. Equipped with this information, the librarian can apply considerable leverage on the vendor’s representatives to improve service in specific subject fields. Suggesting to the vendor’s representatives that the library might be better served by ordering directly from the publisher can encourage attentiveness to a library’s needs.

Vendor profiling provides the librarian with a better understanding of the limitations of a vendor’s services than any vendor representative dares to provide. It also indicates that acquisitions and collection development librarians today must learn to take advantage of conditions in
what can only be described as a buyer's market. Because jobbers, suppliers, and wholesalers need the business of many libraries, they are obliged to weight their stock toward the subjects and publishers that guarantee quantity sales. Even those with the most comprehensive stock are inclined to handle certain subjects and publishers more than others. The effect for a library is, of course, uneven service. Unless adjusted through alternative methods of fulfillment, this kind of service results in an imbalance in the development of the collection. It is, therefore, necessary for the librarian to take the initiative, using the information from vendor profiles to make sensible decisions to satisfy the library's needs.

REFERENCES

Budget Justification:
Closing the Gap between Request and Result

Sally F. Williams

WHAT, YOU ARE WONDERING, can Harvard say about library materials budgets that can possibly be of any use to others? After all, everyone knows Harvard is very big, Harvard is very wealthy, Harvard is very old with long-established traditions of library support. Therefore, Harvard libraries, you say, are different. There you are wrong. Certainly Harvard is all of these things but its very size and the extent and age of its collections bring special responsibilities and obligations for caring for and sharing its collections that impose a correspondingly enormous financial burden. In short, the Harvard libraries' needs are greater than the funds available; moreover, the competition for the funds is very keen in an institution where almost all departments can make this very same "special responsibilities" argument. This situation puts the Harvard libraries in the same boat as every other library scrambling for what it considers its fair and rightful share of a larger body's funds.

I speak today of the Harvard College Library, a group of eleven libraries that accounts for more than one-half of the Harvard University Library system. The Harvard College Library has been successful in getting good library materials budgets. The success cannot be dismissed by wealth alone, for the fact is that the Faculty of Arts and Sciences, the principal funding source, has often been in deficit. Why is a funding agent willing to put itself in such an "adverse and ill-advised" financial position? I believe that success in securing adequate budgets is principally due to the confidence of the Faculty of Arts and Sciences in the library administration. This confidence was not gained overnight but has been built steadily by successive administrations who exhibited the characteristics that I will now boil down, in gross oversimplification, into what I call the four P's and four S's.

1. Preparation—careful preparation not only of the budget itself but
prenotification of administration, users, and staff. This goal can be accomplished only by frequent contact with all three.

2. Proven Performance—that is, financial performance according to budget plan and promise.

3. Participation—as a willing partner with the administration in setting budget priorities and in seeking the appropriate funding solutions, whether from Harvard or from outside.

4. Persistence—with patience and principles.

Though only four P’s have been listed, I was pleased to discover a plentiful supply of potential P words from which to pick: surely priority, pertinent, and prominent have a place somewhere in this vocabulary.

In preparation and presentation of the budget, I urge the rule of the four S’s:

- Keep it SIMPLE
- Keep it SALIENT—the point must be prominent and immediately recognizable as pertinent.
- Keep it SCRUPULOUS—we are all honest and our budgets should be too.
- Pull no SURPRISES—we all like to think we are in control of the situation by being aware of what is going on—if you throw a curve at the last minute, you put the administration off balance and jeopardize your credibility.

Some of you here will no doubt write off the four P’s—Prepare, Perform, Participate, Persist—as platitudes, and some will try to treat them as a prescription. My intention is neither. My intention is to sift through the Harvard College Library budget process, identify a few elements that I believe are linked to the success the library has had, and tell you about them.

“Prepare” is advice that cannot be stressed enough. In real estate the stock phrase for the three elements of value in a piece of property is location, location, location. In the performing arts, the stock advice is practice, practice, practice. In seeking funding support, it is prepare, prepare, prepare. The point is obvious but the reason it is good advice is that we so often fail to live up to it. The first “Prepare” is to prime the administration well in advance. Administrations need time to sort out priorities and arrange funding and seldom like surprises. Much of the Harvard success was due to a ten-year plan written by an earlier library administration covering the period 1966–76. More recent years are covered in a report prepared and updated by an independent financial consulting firm. In addition there are the annual reports and the regular meetings between the library staff and a faculty library committee whose membership includes the chief financial officer of the Faculty of Arts and Sciences. Equally important, in my opinion, are the frequent informal contacts—lunches, receptions—and frequent telephone contact not only at budget time but throughout the year.

The second “Prepare” is to prepare the staff. At the Harvard College Library the heads of the major departments and libraries work directly with the library Budget & Planning Office in arriving at a mutually satisfactory budget. The annual budget process takes three months. General
Budget guidelines are issued by the university in December, but the university allows the library to set price increase guidelines for library materials and this task usually begins in the Budget & Planning Office of the Harvard College Library. The information gathered at the ALA Midwinter Meeting from the Library Materials Price Index Committee of the Resources Section of the Resources and Technical Services Division and from vendors is enormously influential in this process as are the latest reports of price increases and foreign currency exchange rates. This information is distributed by the library Budget and Planning Office to the Harvard libraries in January and forms the basis for discussion with the library departments, which takes place in February. The budget is due in March. Since Harvard library collections are for the most part mature collections and collections of which a high percent is purchased abroad, the budget discussion centers on price increase information and expectations of the strength of the dollar, information more easily supplied by the Budget & Planning Office. Changes in curriculum and emphasis in research as well as unanticipated changes in funding also must be considered in arriving at a budget figure for each library, and this information is usually offered by the head of each library.

The price information tools we use are listed in "Selected Sources of Published Library Materials Price Information" at the end of this article. Up-to-date price studies of foreign materials are the most difficult to find. There is a disturbing trend for publications reporting these prices to cease, and the increased delay in publishing this information in those still in existence negates their value in an annual budget process. For example:

- The journal Library Association Record has stopped publishing British book prices. Academic libraries have a substitute that may be even more appropriate to their setting, the reports of the Centre for Library and Information of the Loughborough University of Technology (e.g., "Selected Sources," Hart), but the fact remains that there is one less source of information now.
- Library of Congress has stopped publishing LC Acquisitions Trends. The price information formerly contained there will be published in LC Information Bulletin, but the time delay in publishing the information may be lengthened.
- 1983 preliminary U.S. periodical prices were not published until the May/June issue of RTSD Newsletter, six months after the information had been compiled and too late to be incorporated into the budget cycle.

Price information is extremely important to library budget preparation, and rapid publication will help enormously in formulating budget requests that account for price reality.

Partly in response to the difficulty of obtaining price information and partly to answer the question of the relevancy of the published price indexes in producing the most pertinent information, the Widener Library, the central research collection in the humanities and social sciences of the Harvard College Library, began compiling its own index of periodical prices. By comparing the Widener Library prices for the last
thirteen years with those of some published prices, we have discovered that although average prices can differ considerably, there is a strong correlation in the rate of increase. By applying the regression analysis method of least squares, Widener Library can predict its average periodical prices from the Blackwell Humanities and Social Sciences Index with an accuracy of ±1.4 percent. Discovering this relationship between Widener price patterns and Blackwell price patterns has saved the library much energy in that it spares us the chore of having to compile each year our own average periodical prices, but it highlights the dependency of libraries on published sources of price information.

Price increase information cannot be used in isolation but must be associated with some budget base, and so the library’s own expenditure figures and budget variance figures are needed. Harvard financial information comes from two sources—reports from the university financial system and reports from an in-house automated acquisitions system, which is a shadow accounting system that allows us to keep track of encumbrances. As any budget officer knows, it is of the utmost importance to have the right figures immediately in hand. The Harvard University financial system is automated and produces monthly budget statements sorted in three ways—by library or user group, by type of expenditure, and by source of funding. The Harvard College Library has about one hundred of these library or user groups (subdepartments we call them) and more than eight hundred individual funds and accounts. There is a universitywide expenditure class for “books” and fifty expenditure classes available at the discretion of the library, of which five are currently used to describe library materials. The university accounting system allows the library to sort and report its expenditures in ways that are convenient to isolate and compare to library materials price studies, for example, by format—microforms or sound recordings or government documents or periodicals or a combination of each. From the in-house acquisitions system, which tracks payments at the order record level, average costs per order can also be obtained by subject and indirectly by country of publication. Through the university financial system, which is newly online using the general database management system FOCUS, the library is able to generate its own reports incorporating expenditure and budget performance information for the last three fiscal years. At budget time, January, the library also has results of the first six months of the current fiscal year as well as monthly projections for the full year based upon historical patterns. In the online system, preliminary data can be entered after each budget session with library departments, and progress toward matching income with expense can be measured daily. Budget analysis can be conducted immediately, whereas in the past the burden of manually adding up the thousands of combinations of subtotals inhibited not only analysis but the comprehensive understanding of the relationship of the library materials budget to the total budget and the ability to respond with adjustments.

Once the total level of support for the collections is determined, the process of determining the appropriate level of support from the various
sources of funding begins. At this stage, accurately estimating the income of the four categories of funding, and particularly of the eight hundred or so funds and accounts, takes on increasing importance. The university financial system produces an estimate of the income of each of the 650 or so endowed funds, and the library estimates the income from its own receipts and from government contracts. The balance must come from the Faculty of Arts and Sciences. In periods where endowment income, receipts income, and government funding are increasing less than the cost of library materials (the usual case), the Faculty of Arts and Sciences is called upon to bear a disproportionately higher share of the increase. By having access to an online budgeting system which incorporates university reports with various library projection models, the Harvard College Library has greatly shortened the time needed to compile this complicated budget. It can advise the Faculty of Arts and Sciences of its needs at an earlier date, and with increased accuracy and precision. This capability contributes greatly to the confidence with which the Faculty of Arts and Sciences greets the library budget.

While the college library budget itself is complex and the preparation of the budget is complex, we try to keep the justification of the budget simple. The more we are in oral contact with the Faculty of Arts and Sciences, the less the need to justify in writing. Each year only one or two of the most pertinent arguments for support of the collections are presented. Usually performance of a price index is presented along with any special considerations of changes in scope of the collection or significant changes in funding (such as loss of a government contract). One of the persuasive sources of information was the index of Effective Exchange Rate published by the International Monetary Fund in its periodical *International Financial Statistics*. This index was used to show that although the dollar was strong, it was not as strong as the administration had hoped or indeed had suggested, when compared to the inflation of library materials. The administration appreciates succinctness in budget presentations; pictures lend themselves much better to this concept than long, involved tables or figures where the message is not immediately apparent. The particular point about the relative strength of the dollar is readily grasped from a graph. Thus the budget justification is kept simple and salient. Because of the frequent contact with the Faculty of Arts and Sciences, there are no surprises in the budget request and the justification serves more as a quick and useful reminder to the administration of what has been discussed previously.

I have emphasized today the effect of budget preparation in building the confidence of the administration. I do not mean to imply that the others—proven performance, participation, and persistence with patience and principles—are not equally important, but they are concepts more self-evident. Be that as it may, I would like to share with you an example of cooperation at Harvard where participation with administration in seeking appropriate funding solutions paid off. It is not an example of telling you how to find a "sugar daddy," but a case of maximizing the library's own income from receipts by enlisting Faculty of Arts
and Sciences support as a willing partner to change the university’s investment and accounting policies. Years ago the library and the Faculty of Arts and Sciences reached agreement on the uses of library income. Income generated from fees for library privileges, interlibrary loan, and photocopying was to be applied to the general unrestricted operating income, a procedure that meant it could be used only in the year in which it was earned. Income generated from fines and sale of duplicates or gifts could be applied to book budgets and deposited in accounts where the balances could be carried forward from one year to the next. Each library, and indeed some fifty subdepartments, had their own accounts. Under the university investment policy, however, these types of accounts earned no interest for the library. The university, of course, was investing the balances but under conditions of uncertainty as to the total amount available to invest. With the encouragement and support of the Faculty of Arts and Sciences, the library pooled all of its small accounts of this type into a single account and pledged a reserve balance which the university invests in minimum periods of six months. Annual interest accrues to the library at the three-month Treasury bill rate plus 1 percent if the reserve balance is not violated. The college library in turn distributes interest to its library participants in proportion to reserve balances pledged. The investment time period of six months allows even the libraries close to the edge of their budgets to participate in the first six months of a year by using other funds first or by staggering orders against the investment fund to encumber only in the first half of the year and pay out in the second half. The scheme benefits the Faculty of Arts and Sciences because it relieves some of the financial burden; it benefits the university because it provides more certainty of the level of funds available for investment; it benefits the library because it puts more control into library hands. The libraries are more aware of the financial status of their own funds and that means smoother operations for all concerned.

In summary the Harvard College Library has been given good budget support and I believe this support is directly related to the four P’s of budget preparation—preparation, performance, participation, persistence with patience and principles—and the four S’s of budget presentation—keep it simple, salient, scrupulous, with no surprises. This is not a prescription for 100 percent success even at Harvard, but I believe the more closely we follow through with these at Harvard, the more confident we can be that the budget that results is the best budget possible.

References

SELECTED SOURCES OF PUBLISHED LIBRARY MATERIALS PRICE INFORMATION


*Buch und Buchhandel in Zahlen.* Frankfurt am Main: Buchhändler-Vereinigung GmbH., 1983.


Forecasting Price Increase
Needs for Library Materials:
The University of California Experience

Dennis Smith

To provide adequate library resources for its various campuses in the changing financial climate of the last decade, the University of California has taken steps to establish an adequate base book budget and to measure price increase needs to maintain budgeted acquisition rates. These steps were taken within the context of the University of California library development plan, which had been adopted in 1977 with the twin goals of reducing the rapid rise in library costs and improving library service. To achieve these goals, the plan recommended as its main objective increased cooperation among the libraries of the university and the creation of a library system that would serve all university library users, regardless of campus or location. This paper will concentrate on that portion of the plan that resulted in book budget increases and a balanced budget acquisition rate among the campuses.

Efforts to Establish
An Adequate Book Budget

When the university’s library plan was being prepared, it was clear that there was no way in which the university could return to the acquisition rates of the 1960s when the annual compound growth rate in the collections was about 10 percent, producing an acquisition rate of more than 650,000 volumes per year.

It was evident, though, that the acquisition rate was undeniably inadequate. By 1974–75, budgeted acquisitions had fallen to about 519,000 volumes per year or approximately 14 percent below the university’s needs. It was evident also that the individual campus acquisi-


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tion rates were out of balance. Several of the smaller campuses actually had a budgeted acquisition rate higher than Berkeley or the University of California at Los Angeles (UCLA), the reason being that the campus distribution of budgeted acquisitions had not been changed since the early 1960s when the smaller campuses were establishing their base collections. By the middle 1970s this inequality could no longer be justified.

In addition, the need for an overall increase in the acquisition rate was evident because of (a) the increase in the user population, both students and staff, (b) the growth in published information, (c) the number of serial subscription cancellations, (d) the need for the replacement of worn-out and lost materials, and (e) the need for retrospective materials.

In an attempt to solve this problem, the Office of the President of the University of California established the Ad Hoc Committee on Library Acquisition Policy, under the leadership of Charles Susskind, the systemwide coordinator of academic affairs in the Office of the Academic Vice President. The committee used as the basis for its final recommendation an acquisitions model developed by Melvin J. Voigt, who at that time was the university librarian at the San Diego campus. The model, because of the committee’s extensive modifications, eventually became known as the Voigt/Susskind Acquisitions Model and was incorporated into the university’s library development plan.

**THE VOIGT/SUSSKIND ACQUISITIONS MODEL**

The Voigt/Susskind Acquisitions Model is displayed in table 1. While a detailed description of the model is contained in the library development plan, the key factors are as follows:

1. A base rate of forty thousand volumes per year is established for each of the university’s general campus libraries. This is intended to cover all undergraduate and master’s programs, and most doctoral programs, except for those in certain professional fields. The base allocation is also intended to include general materials not identified with a particular discipline.

2. Additional volumes are provided for doctoral programs with a high degree of independence in their literature, namely, foreign languages, social sciences beyond the three required for the base level, and earth sciences and astronomy.

3. Volumes are provided for graduate professional programs with a high degree of independence in their literature, e.g., agriculture, engineering, and medicine-related professions.

4. A certain portion of the acquisition rate is related to undergraduate students. For those campuses with large numbers of undergraduates, funds are provided for more duplicate copies of current volumes. Similarly, reductions are made for campuses with particularly small numbers of undergraduate students.

5. An acquisition supplement is provided for campuses with large graduate enrollments—an allowance of one thousand volumes for every one thousand graduate students over five thousand.

6. There is a “sponsored research” supplement. The committee con-
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cluded that extramurally funded research creates extra demands on libraries in proportion to the number of additional users added, i.e., the number of appointees paid from restricted funds.

7. An adjustment is made for "non-budgeted" acquisitions. These are materials received in addition to purchased volumes from such sources as gifts, exchange agreements, and federally funded programs. The adjustment amounts to a reduction in the acquisition rate equal to 20 percent of the total nonbudgeted volumes received by the campus to compensate the campuses that have to purchase materials other campuses receive free of charge.

The inclusion of the Voigt/Susskind Model in the university's library development plan had a very positive effect on book budgets. When the plan was approved and funded by the state, the acquisition rate was increased to 609,000 volumes per year, representing a 16.4 percent increment, or a programmatic increase of $2.8 million.

SECURING ADEQUATE FUNDING FOR PRICE INCREASE NEEDS

The first concerted universitywide effort to measure inflation needs for the book budget began in 1974. It was prompted by these two considerations. First, the need for inflation funds for book budgets was based largely on the consumer price index, the same measurement used for determining general price increase funds for nonsalary expenditures, and, second, the university was receiving an inflation adjustment for book budgets of only 4 to 7 percent, which was about the same as that being received by the public libraries in California. This amount was totally inadequate to maintain the quality of the university's research collections.

As the negotiations with the state began for the university's budget for 1975-76, the universitywide budget office decided that it was time to separate book fund expenditures from aggregated nonsalary expenditures and to relate the need for price increase funds to the national indexes for library materials as reported in The Bowker Annual. The university's request was stated in very simple terms in that an estimate was made of the amount of book funds being spent by the campus libraries for hardcover books, periodicals, and serial services. This request represented a major departure from past budgetary practices, and it prompted the state to review its policy on determining price increase needs.

After intensive review and negotiation, the state agreed to the new approach using the indexes reported in The Bowker Annual, and even agreed to review the adequacy of the previous year's allocation for inflation funds for library materials. If the allocation was found lacking, then an adjustment was made to correct the deficiency. Conversely, the state said that negative adjustments would be made if the allocation was too high. This policy remained in effect until the inflation rates began to skyrocket. For the university the result of this policy change was astounding—an overall price increase adjustment for library materials of 13 percent for fiscal year 1975-76.
The university’s Library Council took note of this breakthrough and decided in the fall of 1976 to form a working committee called the Task Group on the Cost of Library Materials. The charge was as follows: “To design and recommend methods for documenting increases (or decreases) in the actual costs of library materials acquired by the University of California libraries.”

The council added, “It is anticipated that this group, in pursuing its charge, will probably need to recommend standardized definitions for various types of materials, and standardized methods of reporting costs.”

The committee began its efforts by focusing on the method that had produced the 13 percent price increase adjustment for fiscal year 1975-76. In doing so, the following issues were raised:

1. Are national price indexes adequate for use with the university’s book budgets?
2. Is the concept of using national book and serial indexes sound for the purpose of requesting gross book budget adjustments?
3. Should the university libraries try to modify the preparation of national price indexes so that they might be more useful for academic libraries?

In the course of addressing these questions, the committee ultimately recommended that the university should continue to use the indexes in Bowker as the basis for book price increase requests until there are “better data and a better rationale for using different figures.” In issuing this recommendation, however, the committee also expressed its reservations in using the indexes and urged that the application of the indexes to book expenditures be modified. For example, it was concluded that Bowker’s hardcover book index is based on a broader spectrum of materials than that purchased by academic libraries. Thus, it was decided that certain subject areas reported by Bowker should be excluded, such as “Travel” and “Sports, Recreation.” It was concluded further that it was not really clear if the rate of inflation for academic research libraries is higher or lower than that reported by these national indexes, and that the price index for periodicals in Bowker covers a more limited set of items than the university’s subscription titles, continuations, and standing orders.

The committee noted another problem with the national indexes in that subject categories are different for each class of material; e.g., there are sixteen subject areas for hardcover books, twenty-two for periodicals, and seven for serial services. Also, each subject list seems to lack comprehensiveness. Thus, some subject areas must be lumped into a category labeled “other.”

The committee noted also that the university should continue to use the Bowker index for serial services even though very few of the university campus libraries separated, or for that matter could even identify, expenditures for serial services in their book budgets. This was the most controversial recommendation of the committee. Most of the campuses could only give a “best estimate” of these expenditures. In the end, however, the libraries agreed to report serial services as a separate category because of the high cost of each title and the large percentage of the serial budgets spent on serial services.
To help the libraries isolate serial service expenditures, the committee decided to use the American National Standard Institute’s definition with some modification as follows:

A periodical publication which revises, cumulates, abstracts, or indexes information in a specific or general field on a continuing basis by means of a new or replacement issue, pages, or cards, intended to provide information otherwise not readily available. It also includes cover to cover translations of foreign language serials.

The committee then turned its attention to the reporting of expenditure data to the systemwide offices by the campus libraries. It was determined that even though the national price data would never precisely match the experience of any particular campus library, expenditure data would be systematically reported by each for hardcover books, periodicals, and serial services. This was a major breakthrough for systemwide planning, because up to that time, the libraries were very reluctant to support a unified effort to provide this kind of data to the Office of the President. The reason for this was that the data was difficult to get because book expenditures did not fall “neatly” into one of the three categories. It was decided that the solution was to modify the expenditure data reported by the libraries to include all library materials purchased with book funds under one of the three categories, and to link expenditure data by subject category to LC subject classifications; e.g., expenditures for monographs with LC classification “S” are reported by UCLA as the percent of its expenditures for monographs in the “Bowker” agriculture subject category (see figure 1).

Date Prepared April 20, 1983

UC, Los Angeles Campus

Library Book Price Increase Justification

1983-84 Percent (1)

I. Monographs, Subscriptions and Serial Services (2)
   A. Percent of Total Book Budget for Monographic Acquisitions. (3) 41.08
   B. Percent of Total Book Budget for Subscriptions. (4) 50.83
   C. Percent of Total Book Budget for Serial Services. (5) 8.09

II. Subject Breakdown
   A. Percent of Monographic Budget for Acquisitions in the Following Areas:

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<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S</td>
<td>N</td>
<td>HF</td>
<td>L</td>
<td>A</td>
<td>C,D,E,F</td>
<td>P-PN 1551; PN 3311-PZ</td>
<td>K</td>
<td>R</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.81</td>
<td>2.84</td>
<td>.79</td>
<td>2.49</td>
<td>4.06</td>
<td>10.13</td>
<td>11.43</td>
<td>5.77</td>
<td>8.76</td>
<td>3.30</td>
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</tbody>
</table>

Figure 1

Library Book Price Increase Justification
<table>
<thead>
<tr>
<th>12. Philosophy, Psychology</th>
<th>B-BJ</th>
<th>1.91</th>
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</thead>
<tbody>
<tr>
<td>13. Drama (Performing Arts &amp; The Drama)</td>
<td>PN 1560-3299</td>
<td>1.54</td>
</tr>
<tr>
<td>14. Religion</td>
<td>BL-BX</td>
<td>1.86</td>
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<td>15. Science and Technology (7)</td>
<td>Q, T-TT</td>
<td>16.57</td>
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<tr>
<td>16. Sociology, Economics</td>
<td>HM-HX; HB-HE; HG-HJ</td>
<td>15.94</td>
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<tr>
<td>17. Other:</td>
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<td>11.72</td>
</tr>
<tr>
<td>e.g. Geography (G-GF); Anthropology (GN-GT); Recreation (GV); Political Science (J); Military &amp; Naval Science (U-V); Bibliography &amp; Library Science (Z)</td>
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<td></td>
</tr>
<tr>
<td>18. Total</td>
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<td>100.00</td>
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### B. Percent of Subscriptions Budget for Acquisitions in the Following Areas:

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<thead>
<tr>
<th>LC Class</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
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<td>Agriculture</td>
<td>S</td>
</tr>
<tr>
<td>Business &amp; Economics</td>
<td>HB-HJ</td>
</tr>
<tr>
<td>(excluding Labor—HD 4801-8942)</td>
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</tr>
<tr>
<td>Chemistry &amp; Physics</td>
<td>QC, QD</td>
</tr>
<tr>
<td>Education</td>
<td>L</td>
</tr>
<tr>
<td>Engineering</td>
<td>T-TP</td>
</tr>
<tr>
<td>Fine &amp; Applied Arts</td>
<td>N</td>
</tr>
<tr>
<td>General Interest</td>
<td>AP</td>
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<tr>
<td>History</td>
<td>C,D,E,F</td>
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<tr>
<td>Home Economics</td>
<td>TX</td>
</tr>
<tr>
<td>Journalism &amp; Communications</td>
<td>PN4699-5650; P 87-96</td>
</tr>
<tr>
<td>Labor &amp; Industrial Relations</td>
<td>HD 4801-8942</td>
</tr>
<tr>
<td>Law</td>
<td>K</td>
</tr>
<tr>
<td>Library Science</td>
<td>Z</td>
</tr>
<tr>
<td>Literature &amp; Language</td>
<td>P</td>
</tr>
<tr>
<td>Math, Botany, Geology &amp; General Science</td>
<td>QA, QK, QE, Q, QH</td>
</tr>
<tr>
<td>Medicine</td>
<td>R</td>
</tr>
<tr>
<td>Philosophy &amp; Religion</td>
<td>B</td>
</tr>
<tr>
<td>(excluding Psychology—BF)</td>
<td></td>
</tr>
<tr>
<td>Physical Education &amp; Recreation</td>
<td>GV</td>
</tr>
<tr>
<td>Political Science</td>
<td>J</td>
</tr>
<tr>
<td>Psychology</td>
<td>BF</td>
</tr>
<tr>
<td>Sociology &amp; Anthropology</td>
<td>HM-HX; GN-GT</td>
</tr>
<tr>
<td>Zoology</td>
<td>QL</td>
</tr>
<tr>
<td>Other:</td>
<td></td>
</tr>
<tr>
<td>e.g. General Works (AC-AN, AS-AY); Geography (G-GF); Social Sciences (General) &amp; Statistics (H-HA); Music (M); Science (QB, QM-QR); Technology (TR-TT); Military &amp; Naval Science (U-V)</td>
<td></td>
</tr>
<tr>
<td>24. Total</td>
<td></td>
</tr>
</tbody>
</table>

### C. Percent of Serial Services Budget for Acquisitions in the Following Areas:

<table>
<thead>
<tr>
<th>LC Class</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>HF</td>
</tr>
<tr>
<td>General and Humanities</td>
<td>A,B(ex. Psych.—BF)</td>
</tr>
<tr>
<td>C,D,E,F,M,N,P</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1 (Continued)
### Forecasting Price Increase Needs

The library materials price increase model that resulted from the committee’s deliberations is illustrated by figure 1 and tables 2–4. This is the kind of analysis that is presented each year to the state by the university to justify its request for price increase funds. Note that figure 1 and tables 2–4 were used as the basis for the university’s request for price increase funds for fiscal year 1984–85.

Figure 1 represents the campus estimate as to how book funds are being spent. The form displayed here is from UCLA and is typical of the data that is provided annually by the campus libraries. Note that expenditure data is provided by type of materials (monographs, periodical, and serial services) and by subject area as determined by LC subject classifications. This pattern results in uniformity in the reports from the campus libraries. Note that expenditures are reported as percents of total expenditures by type of library material. This method is used because it is difficult for the libraries to determine funding sources for purchased materials.
acquisitions, i.e., whether an acquisition was purchased by state general funds or gift or grant funding. The price increase adjustment provided by the state applies only to expenditures from general funds.

Table 2 gives the average annual price increase data for monographs as reported in *The Bowker Annual*. A similar table is prepared for U.S. periodicals and serial services. Columns 1 and 2 are used to determine an average price increase over a three-year period. Column 4 is the three-year geometric mean over this three-year period. The use of a geometric mean rather than a simple average to estimate price increase needs was the result of a meeting with analysts from the State Department of Finance. The state analysts urged that the geometric mean be used because it is less affected by extremes than the arithmetic mean. They also pointed out that it is a calculated value dependent upon the size of all values and that for any series of items it is always smaller than the arithmetic mean.

The university agreed to use the geometric mean, but it must be pointed out that there are disadvantages. It is not widely known and more difficult to compute. Recently this became evident because one of the questions raised by Department of Finance analysts who were not part of the discussions in 1976–77 was, “What is a geometric mean?” Once the rationale was explained as to why the geometric mean was being used, they agreed that its use should be continued.

Table 3 provides calculations that produce the price increase estimate

### TABLE 2

**University of California**
**Office of the Assistant Vice President—**
**Library Plans and Policies**
**Average Annual Price Increases—1979–82**
**Monographs**

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>1979 Final</th>
<th>1982 Preliminary</th>
<th>% Increase</th>
<th>3-Year Geometric Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>$20.94</td>
<td>$32.76</td>
<td>(56.4)</td>
<td>(16.0)</td>
</tr>
<tr>
<td>Art</td>
<td>21.95</td>
<td>31.62</td>
<td>(44.1)</td>
<td>(13.0)</td>
</tr>
<tr>
<td>Business</td>
<td>23.11</td>
<td>35.19</td>
<td>(9.0)</td>
<td>(3.0)</td>
</tr>
<tr>
<td>Education</td>
<td>15.10</td>
<td>21.00</td>
<td>(39.1)</td>
<td>(11.7)</td>
</tr>
<tr>
<td>General Works</td>
<td>28.56</td>
<td>36.35</td>
<td>(27.3)</td>
<td>(8.4)</td>
</tr>
<tr>
<td>History</td>
<td>19.79</td>
<td>26.99</td>
<td>(36.4)</td>
<td>(10.9)</td>
</tr>
<tr>
<td>Language &amp; Literature</td>
<td>17.95</td>
<td>21.78</td>
<td>(21.3)</td>
<td>(6.7)</td>
</tr>
<tr>
<td>Law</td>
<td>29.44</td>
<td>35.63</td>
<td>(21.0)</td>
<td>(6.6)</td>
</tr>
<tr>
<td>Medicine</td>
<td>29.27</td>
<td>38.71</td>
<td>(32.3)</td>
<td>(9.8)</td>
</tr>
<tr>
<td>Music</td>
<td>18.93</td>
<td>26.83</td>
<td>(41.7)</td>
<td>(12.3)</td>
</tr>
<tr>
<td>Philosophy &amp; Psychology</td>
<td>17.98</td>
<td>23.28</td>
<td>(29.5)</td>
<td>(9.0)</td>
</tr>
<tr>
<td>Poetry &amp; Drama</td>
<td>15.83</td>
<td>19.45</td>
<td>(22.9)</td>
<td>(7.1)</td>
</tr>
<tr>
<td>Religion</td>
<td>14.83</td>
<td>17.76</td>
<td>(19.8)</td>
<td>(6.2)</td>
</tr>
<tr>
<td>Science &amp; Technology</td>
<td>29.21</td>
<td>41.93</td>
<td>(43.5)</td>
<td>(12.8)</td>
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<tr>
<td>Sociology &amp; Economics</td>
<td>43.57</td>
<td>48.61</td>
<td>(11.6)</td>
<td>(13.7)</td>
</tr>
<tr>
<td>Average*</td>
<td>$23.96</td>
<td>$30.59</td>
<td>(27.7)</td>
<td>(8.5)</td>
</tr>
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</table>

*Some of the subject areas on which the Bowker averages are based have been omitted from this table.

TABLE 3

UNIVERSITY OF CALIFORNIA OFFICE OF THE ASSISTANT VICE PRESIDENT—LIBRARY PLANS AND POLICIES

MONOGRAPHS: ESTIMATED PRICE INCREASE NEEDS FOR 1984–85

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>3-Year Compound Average</th>
<th>UCB</th>
<th>UCD</th>
<th>UCLA</th>
<th>UCR</th>
<th>UCSD</th>
<th>UCSC</th>
<th>Shared Acquisition Program</th>
<th>Total</th>
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<td>Agriculture</td>
<td>$ 67,152</td>
<td>62,255</td>
<td></td>
<td>$ 15,656</td>
<td>18,890</td>
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<td></td>
<td>$ 11,059</td>
<td>7,987</td>
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<td>Inflation Est.</td>
<td>(16.0)</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Art</td>
<td>71,919</td>
<td>77,818</td>
<td>$ 24,039</td>
<td>54,892</td>
<td>37,779</td>
<td></td>
<td>$ 48,532</td>
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<td>176,937</td>
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<tr>
<td>Inflation Est.</td>
<td>(13.0)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>44,770</td>
<td>62,255</td>
<td>$ 24,039</td>
<td>15,269</td>
<td>9,445</td>
<td>16,177</td>
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<td></td>
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</tr>
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<td>Inflation Est.</td>
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<td></td>
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<tr>
<td>Education</td>
<td>22,386</td>
<td>15,564</td>
<td>$ 12,020</td>
<td>48,127</td>
<td>18,880</td>
<td>16,177</td>
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<td>Inflation Est.</td>
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<td>Inflation Est.</td>
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<tr>
<td>History</td>
<td>358,182</td>
<td>77,818</td>
<td>$ 156,256</td>
<td>195,793</td>
<td>141,672</td>
<td>323,549</td>
<td>$ 4,570</td>
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<tr>
<td>Language &amp; Literature</td>
<td>335,742</td>
<td>155,636</td>
<td>$ 180,296</td>
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<td>Law</td>
<td>70,661</td>
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<td>111,323</td>
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<td>Inflation Est.</td>
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<tr>
<td>Medicine</td>
<td>44,770</td>
<td>171,200</td>
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<tr>
<td>Music</td>
<td>67,152</td>
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</tr>
<tr>
<td>Philosophy &amp; Psychology</td>
<td>111,919</td>
<td>31,912</td>
<td>$ 48,079</td>
<td>36,917</td>
<td>37,779</td>
<td>48,532</td>
<td>6,555</td>
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<tr>
<td>Poetry &amp; Drama</td>
<td>44,770</td>
<td>31,127</td>
<td>$ 12,020</td>
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<tr>
<td>Religion</td>
<td>44,770</td>
<td>15,564</td>
<td>$ 35,950</td>
<td>35,950</td>
<td>37,779</td>
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<td>Inflation Est.</td>
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</tr>
<tr>
<td>Science &amp; Technology</td>
<td>447,673</td>
<td>399,039</td>
<td>$ 240,395</td>
<td>320,266</td>
<td>132,228</td>
<td>372,081</td>
<td>56,806</td>
<td>342,816</td>
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</tr>
<tr>
<td>Sociology &amp; Economics</td>
<td>246,222</td>
<td>62,255</td>
<td>$ 132,217</td>
<td>308,089</td>
<td>85,003</td>
<td>113,242</td>
<td>4,370</td>
<td>44,234</td>
<td>71,882</td>
</tr>
<tr>
<td>Inflation Est.</td>
<td>(13.7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>246,222</td>
<td>140,072</td>
<td>$ 120,198</td>
<td>228,071</td>
<td>85,003</td>
<td>161,776</td>
<td>6,554</td>
<td>44,233</td>
<td>111,816</td>
</tr>
<tr>
<td>Inflation Est.</td>
<td>(8.5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>$2,309,042</td>
<td>$1,556,363</td>
<td>$1,201,973</td>
<td>$1,932,807</td>
<td>$944,488</td>
<td>$1,617,745</td>
<td>$218,485</td>
<td>$1,105,858</td>
<td>$798,692</td>
</tr>
<tr>
<td>Inflation Est.</td>
<td>239,850</td>
<td>157,100</td>
<td>$ 123,226</td>
<td>200,517</td>
<td>93,605</td>
<td>169,151</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent</td>
<td>(10.4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Monographic Budget as a Percent of the Total Book Budget</th>
<th>(54.8)</th>
<th>(47.0)</th>
<th>(49.0)</th>
<th>(41.1)</th>
<th>(51.0)</th>
<th>(60.0)</th>
<th>(34.0)</th>
<th>(46.0)</th>
<th>(52.0)</th>
<th>(100.0)</th>
<th>(50.7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Book Budget</td>
<td>$4,213,581</td>
<td>$3,311,410</td>
<td>$2,453,007</td>
<td>$4,704,982</td>
<td>$1,851,927</td>
<td>$2,296,241</td>
<td>$692,604</td>
<td>$2,404,039</td>
<td>$1,535,946</td>
<td>$794,318</td>
<td>$24,608,055</td>
</tr>
</tbody>
</table>

*The locations of the University of California campuses in the order listed in table 3 are as follows: Berkeley, Davis, Irvine, Los Angeles, Riverside, San Diego, San Francisco, Santa Barbara, and Santa Cruz.
for monographs. A similar table is prepared for subscriptions and another for serial services. On each of the tables the geometric mean (column 2) is multiplied by the estimated amount of book funds spent in the base budget year in that subject category. For example, for the subject area agriculture, the three-year geometric mean is 16 percent. Berkeley estimates that 2.9 percent of its monographic budget is spent on these acquisitions ($67,152). Multiplying the 16 percent by this number results in an estimated inflation need of $10,744. This same technique is used for each of the subject areas by type of material. The estimated price increase for monographs for 1984–85 is 10.2 percent or $1,278,498.

Note that the model produces very useful management information. On the average, the university is spending approximately 50.7 percent of its book funds for monographs. The range is from 34 percent at the San Francisco campus (UCSF) to 60 percent at the San Diego campus. UCSF, of course, must acquire materials for its medical programs and would naturally have the lowest expenditures for monographs. It is this type of data that a number of librarians in the university system have indicated is useful for planning for the target budget year.

The analysis of expenditures for periodicals prepared for the 1984–85 budget request indicated that approximately 40.7 percent of the university’s book funds is spent on these acquisitions. The estimated need for price increase funds in 1984–85 is an increase of 14 percent or $1,400,098.

It should be noted that when the university decided to adopt this model to estimate its price increase needs, it was agreed that if the data proved not to be advantageous as one would hope, the results of the analysis would still go forward to the state. For example, in the past the data has actually shown that in some subject areas the university’s estimated price increase need proved to be too high. The state has made negative adjustments accordingly. But, since the model has been used by the university, the overall inflation estimate has proven to be in the university’s favor when all of the subject areas are aggregated.

As previously mentioned, information about expenditures for serial services is the most difficult to obtain. The university’s best estimate is that it is spending about 8.6 percent of its book funds for these purchases, and the analysis of the data for each campus library indicates that an increase of 11.7 percent or $246,810 will be needed in 1984–85.

Table 4 summarizes the university’s request to the state for price increase funds for the library materials budget for 1984–85. The estimated overall need is for $2.9 million or an increase of 11.9 percent.

**SUMMARY AND CONCLUSIONS**

In an era when adequate funding for state-supported institutions is increasingly difficult to obtain, one of the success stories is the efforts of the University of California to establish an adequate base book budget and to estimate inflation fund needs. One of the key reasons for this success is relating book fund needs to academic and research programs as contained in the Voigt/Susskind acquisitions model. It is important to
TABLE 4

University of California
Office of the Assistant Vice President—
Library Plans and Policies
Estimated Price Increase Needs for 1984–85

<table>
<thead>
<tr>
<th></th>
<th>1983–84 Book Budget</th>
<th>1984–85 Estimated Price Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount</td>
<td>Amount</td>
</tr>
<tr>
<td>Monographs</td>
<td>$12,479,766</td>
<td>$1,278,498</td>
</tr>
<tr>
<td>Subscriptions</td>
<td>10,010,968</td>
<td>1,400,098</td>
</tr>
<tr>
<td>Serial Services</td>
<td>2,117,321</td>
<td>246,810</td>
</tr>
<tr>
<td>Total</td>
<td>$24,608,055</td>
<td>$2,925,406</td>
</tr>
</tbody>
</table>

Remember, though, that once the base is established, estimated price increase needs are of the utmost importance.

The university has discovered that by providing the state with detailed information on book fund expenditures, a major breakthrough occurred in establishing the credibility of its price increase needs. Through the years various state analysts in the Department of Finance and the Legislative Analyst’s Office have expressed satisfaction with the university’s willingness to provide expenditure data by subject area. They have pointed out that this produces a weighted average, and relates book expenditures to academic and research programs. It gives credence to the university’s claim that our funding needs are different from those of public libraries.

It is important to remember that the university would never have been able to obtain the necessary information on how book funds were being spent without the cooperation of the campus libraries. The consistent and compatible data their reports made possible established the university’s credibility with the state’s analysts.

One must keep in mind, though, that in constructing a detailed price increase model, it is absolutely necessary to know the nature of the data. To illustrate this point, the university encountered a unique problem in its negotiations for price increase funds in 1982–83. Each year the State Department of Finance issues a document called the “Price Letter,” which estimates inflationary increases for various types of commodities purchased by state agencies. One section of the letter always estimates the increases expected for library materials. For 1982–83 the state projected a price increase of 1.9 percent for monographs. Since the university spends at least 51 percent of its book budget on monographs, and the estimate had no relationship to the actual experience of the university libraries, the alarm was sounded.

The university had to reacquaint itself with the fact that the unit prices reported in Bowker represent the volumes currently being cataloged by the Library of Congress. Further, books in the subject category of sociology-economics accounted for 16.5 percent of the volumes cataloged by LC in 1980, and prices decreased for this one subject category by 21.6 percent. It was obvious that the average unit price for monographs was being skewed because prices increased in every other subject.
area except for business, which showed a small decline of – 2.5 percent. The university was quick to point out to the Department of Finance that if books in sociology-economics were omitted, the average price per volume increased 15 percent (1980 over 1979). Also, the university’s monographic purchases in sociology-economics accounted for only 8.5 percent of the total expenditures for monographs. Subject areas in which 37 percent of the university’s book budget is spent increased as follows: law, 14.6 percent; art, 24.1 percent; education, 2.7 percent; medicine, 15.1 percent; science-technology, 23 percent; and philosophy-psychology, 25.5 percent. Because the university could provide such expenditure detail, the negotiations for 1982–83 had a happy ending; the libraries received an overall price increase adjustment of 11.8 percent for the book budget.

Besides knowing the nature of the data being reported, it is important to remember that once a methodology is established for determining price increase needs, the request should be as consistent as possible in succeeding years. If new elements are introduced, such as an analysis of library materials purchased in foreign countries, the budget officer should make sure that all who analyze the request understand the rationale for including these new elements.

One should remember also that the state analysts change with the passage of time, both in the library system and on the state level, and, therefore, there has to be a continuing effort in educating the people supplying the basic data or reviewing the request. It is unwise to assume that a new state analyst understands the methodology so familiar to the library professional.

The final point to be made is that what “works” today in articulating your need for an adequate base book budget and price increase funds to maintain acquisition rates will not necessarily work forever. An acquisition model or inflation model will age and eventually require modification or even an entirely new approach to convince state analysts of your need for adequate funding. The cautionary note here is to be prepared for the change that comes naturally with the future.

**References**

2. Ibid.
3. Ibid., p.2-3.
A Cost Model for Retrospective Conversion Alternatives

Stephen H. Peters and Douglas J. Butler

A cost model is presented for use by librarians desiring to investigate various alternatives for accomplishing retrospective conversion. Advice on taking a random sample and gathering information is given, and the steps necessary to cost the project are set out. A hypothetical example using two alternative methods is provided.

The development of automated circulation systems has set the stage for the automation of other library processes and the development of online catalogs. A necessary condition for all of these projects is the conversion of some or all of the bibliographic records to machine-readable form. In most instances librarians have been thinking in terms of current and recent monographs—those that circulated most often. But the changes brought about by AACR2 have made other forms of the public catalog very attractive, especially since many card catalogs have become unwieldy and victims of large filing rearrangements. In addition, declining financial resources have forced libraries to depend upon each other, and state and regional automation projects have become an important agenda item. At the heart of almost every project is the idea that all members will convert their records to machine-readable form.

LITERATURE REVIEW

The literature on retrospective conversion is quite scanty, but contains enough information to be very useful to librarians planning retrospective conversion projects. Several general discussions can be very helpful in the planning stages. Butler, Aveney, and Scholz prepared an analysis for Library Technology Reports, which outlines the basic steps and discusses specific vendors. Although the vendor information is out-of-date now, the basic outline is still useful for guiding librarians through the steps necessary to accomplish a high-quality retrospective conversion. A second useful general source is Retrospective Conversion, prepared by the Association of Research Libraries. This collection of documents

Stephen H. Peters is Associate Professor and Cataloger, Olson Library, Northern Michigan University, in Marquette, and Douglas J. Butler is Assistant Professor and Cataloger, Morrison-Kenyen Library, Asbury College, Wilmore, Kentucky. The authors thank Stephen P. Harter, Associate Professor, School of Library and Information Science, Indiana University, for his advice and assistance in the preparation of this paper and Vera Fessler of General Research Corp. for providing data for the example.
includes the report of the OCLC Internetwork Quality Council, a set of draft guidelines from the Research Libraries Group, a summary from PALINET, and individual project descriptions and instructions from several libraries. A paper about the council’s report, which found that libraries opposed lowering of quality standards for retrospective conversion, was published in Library Resources & Technical Services.1

Although instructions for projects currently under way are readily available, only three projects have been reported in detail in the literature. Walton reported that Old Dominion University used optical character recognition (OCR) input to match its 286,000 titles against the Blackwell/North America database.2 More than 80 percent of the records produced exact matches, and non-hits and records needing bibliographic changes were processed through OCLC. Items not found on OCLC, about 3 percent of the total, were evaluated for retention in the collection. Walton did not give any cost information. Krieger recently reported on the project under way at the Hamilton campus of Miami University of Ohio.3 This project lacks both extra staffing and outside funding, and it is being carried out using OCLC. The average time for converting a title has been 3.34 minutes, but the cost figures reported included only the OCLC charge. Johnson described the project under way at the University of South Carolina using OCLC.4 For the general collection, 67.1 percent of the records produced exact matches or required only minor editing, and 13.4 records were updated for each hour of staff time. Although the hit rate was 92.7 percent, procedures used resulted in twice as much staff time being used for offline steps as for the online steps. The major portion of the costs was for salaries and wages.

NEED FOR A COST MODEL

Missing from the literature of retrospective conversion is a general method by which librarians can determine the approximate cost of various alternative procedures. The general discussions, such as were provided in Library Technology Reports, outline the broad steps necessary under any procedure, but they do not give specific information or provide the details for each step. The purpose of the present paper is to provide a detailed model that can be used to determine the approximate cost of any alternative method, in-house or vendor, for accomplishing retrospective conversion. The major problem to be solved is the selection of the most effective method of carrying out a conversion. Most effective does not necessarily mean the lowest-cost method, but the method that will best meet the standards set for the project at the lowest cost.

Thus the first and most important step is to establish standards for the project. Then, on the basis of the data gathered in the random sample, the library can estimate the cost of a conversion project carried out according to the desired standards by the various methods available.

THE RANDOM SAMPLE

If it has not been done recently, the library will need to take a random sample of its shelflist. Even the smallest shelflist is of a size which precludes using the entire shelflist to develop a profile of the collection. It is
important to include all segments of the shelflist that are to be converted in the sample in order to avoid any bias toward a particular segment. The results of the sample will provide part of the basis for determining the values of some of the variables examined in the four steps listed below, particularly staff time, editing, charges imposed by utilities and vendors, and the time required for project completion. In addition, the results of the sample will be necessary for the library to analyze its collection in order to submit requests for cost estimates to vendors.

For those not familiar with the sampling process, a good discussion of the procedure can be found in Ray L. Carpenter and Ellen Storey Varu’s *Statistical Methods for Librarians*. Also, Butler, Aveney, and Scholz provide a useful method for sampling a shelflist in the appendix to their report. In calculating the size of the sample, the librarian must first determine how much error can be tolerated in the sample. Most librarians will not need greater accuracy than that generated by using 2 to 5 percent error limits at the 95 percent confidence level. These sizes are shown in table 1. To provide some margin of safety, it is recommended that the sample size be increased to the next even 100 records, e.g., using 400 records instead of 384. If greater accuracy is desired, it can be obtained in two ways: using a smaller error rate (1 percent requires a sample size four times the size of a 2 percent sample), or increasing the confidence level to 99 percent, which will increase the sample size by 73 percent. Items which should be tallied in examining the sample include the numbers of materials by each type, the number of foreign-language items (often requested by outside vendors), the number of items with Library of Cong..rt card numbers, and the number of MARC records. All of these counts must be converted to percentages of the sample for estimating purposes.

**TABLE 1**

**Minimum Random Sample Size at the 95 Percent Confidence Level for Estimating Costs of a Retrospective Conversion Project**

<table>
<thead>
<tr>
<th>Estimated Percentage of the Collection to be Converted</th>
<th>2% Error</th>
<th>3% Error</th>
<th>4% Error</th>
<th>5% Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>2401</td>
<td>1067</td>
<td>600</td>
<td>384</td>
</tr>
<tr>
<td>40 or 60</td>
<td>2304</td>
<td>1024</td>
<td>576</td>
<td>369</td>
</tr>
<tr>
<td>30 or 70</td>
<td>2016</td>
<td>896</td>
<td>504</td>
<td>323</td>
</tr>
<tr>
<td>20 or 80</td>
<td>1536</td>
<td>683</td>
<td>384</td>
<td>246</td>
</tr>
<tr>
<td>10 or 90</td>
<td>846</td>
<td>384</td>
<td>216</td>
<td>138</td>
</tr>
</tbody>
</table>

**Comparing the Random Sample with the Database**

Before this process is begun, it is important to determine both what will be considered a matching record and what level of completeness of cataloging is desired. The experience reported above with OCLC at the University of South Carolina, and the authors’ own experiences with
Here we are in the midst of a new age, and everyone seems to be asking for more and more information...more quickly, more economically, more conveniently. That's why University Microfilms International created UMI Article Clearinghouse, a new service that enables you to electronically order articles from nearly 8,000 periodicals.

You can order articles over the OCLC ILL Subsystem, through ITT Dialcom (the system that supports ALANET) and CLASS OnTyme. Other online systems will soon be offering the service as well.

Article availability is guaranteed. You have the assurance that you are obtaining articles from a licensed agent.

Your order will be shipped by first-class mail within 48 hours.
The cost is just $4 to $6 per article for deposit accounts, and $8 if ordered by credit card.

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Find out about UMI Article Clearinghouse. We want to make it easy for you to get information in the Information Age.
OCLC at Northern Michigan University and Asbury College have indicated that although a high percentage of the samples was matched in the OCLC database, about half of the match groups did not meet the standards set for the local projects.

The first step in comparing the sample with the selected database is to define what an exact match will be. An exact match can range from matching the shelflist card in all bibliographic details to matching the author and title only. However, a minimum of author, title, edition, and all publication data would provide a closer match to the actual material and would be more useful to potential users. When matching has been completed, the sample should be searched against the bibliographic utility database used by the library (OCLC, RLIN, etc.) or sent to a commercial vendor for searching against that database. If the library has no previous time study statistics, and if it is considering in-house conversion, this is also the time to collect data on the average number of records searched per hour. These calculations will be needed later.

When samples are searched against the database, distinct categories of records can be isolated. These are

1. Acceptable as is.
2. Minor editing needed (changing existing call numbers and headings, correcting misspellings).
3. Major editing required (adding fields of all types or fixed field coding).
4. Not matched in the database.

It is important to note the percentage of records in each category for an in-house project because each category requires a different amount of time to process. This searching will also enable the library to supply a vendor with information such as the number and types of fields which will need to be edited or added.

**Gathering Information**

The second step in determining retrospective conversion costs is to gather as much information as possible on the alternative methods of conversion. One obvious source is commercial vendors who undertake conversion projects. They can supply information about the size of their databases, the kinds of records included, the quality of those records (whether AACR2 heading forms are used, whether subject tracings or call numbers have ever been updated, fields present on the records, etc.), and their general procedures for processing a conversion. Vendors will also indicate what they expect a library to do and at what steps there is the option of having either the library or vendor process the records. They may also be able to provide examples of records which they have converted. Examples would be useful for comparing the abilities and performances of various vendors. A good way to gather this information is to talk with vendors at conferences because the specific library situation can then be discussed. But a letter of inquiry should not be dismissed, for it can at least result in general information and, if the inquiry is specific enough and includes the data from the random sample about the collection, very specific answers can be provided by vendors, includ-
ing costs. But remember that the vendors' interests lie in selling their service, so they will place themselves in the best light possible.

To discover the pitfalls and problems of retrospective conversion—and there are many to trap the unwary librarian—it is necessary to talk to librarians who are carrying out a retrospective conversion project or have recently done so. They can detail their experiences and provide expert advice for the neophyte. In this way also specific problems and techniques can be discussed, and the librarian can determine if a method that worked for someone else will work equally well in his or her own library. What must be remembered is that each situation has unique aspects, and a procedure satisfactory in one library cannot necessarily be transplanted to another without modification. Discussion with those who have experience with retrospective conversion projects will also give the librarian an opportunity to gather data on the performance of various vendors. An evaluation of vendor performance may be as important as cost information in making the decision. Finally, a visit to a library currently carrying out a conversion project will be most useful to observe the actual procedures and learn what such a project entails.

**Costing the Project**

To arrive at an approximate cost for each alternative, four steps must be costed. These are (1) searching, (2) verification and editing, (3) coding and input of non-hits, and (4) obtaining final records. Variables which must be examined in these steps include the amount of staff time required, charges imposed by bibliographic utilities and vendors, and the time required to complete the project. The resulting costs will be a function of the various routines plus the cost of equipment and supplies. Although the costs may vary drastically, the procedure used to calculate the costs will not vary with regard to in-house or vendor production.

However, the librarian should be aware that the "Hawthorne effect" was probably operating during the evaluation of the sample records. The staff treated it as a welcome break from the usual routine and, knowing it was an experiment, achieved higher production rates than they would over a sustained period of several months or years. Thus the sample times should be regarded as maximums and the costs as minimums. An allowance will need to be made in the final costs for the long, tedious nature of the project.

There are three basic costs which must be applied as needed to each step in the procedure. These are labor costs, equipment/supplies costs, and vendor/bibliographic utility charges.

**Cost Factors**

*Labor.* Labor costs must be based on the total compensation actually given to all employees working on the project and will depend on the salary levels of the participants. For student or part-time help, the basis can probably be the hourly wage. This hourly rate of pay then is divided by the rate of production derived from the sample times or time studies. Suppose, for example, that for searching the database a library is going to use part-time student help paid the minimum wage of $3.35 an hour.
with no fringe benefits. Further suppose that the sample shows that an average of fifty records per hour can be searched. Labor cost per record searched is then:

\[
\frac{3.35}{50} = 0.067
\]

For full-time staff, compensation must be converted into an hourly wage by means of the following formula:

\[
\text{rate} = \frac{\text{salary} + \text{benefits}}{\text{(effective working days/year)} \times (\text{effective hours/day})}
\]

This formula takes into account the hidden compensations of fringe benefits, paid vacations, coffee breaks, and the like. It is good practice to allow at least one hour per day for full-time staff for coffee breaks, personal needs, and other contingencies.

**Equipment and Supplies.** Equipment and supply costs are dependent upon the vendor selected. Some of these costs will be fixed and some prorated. Some utilities and vendors require the purchase of terminals, computers, or special interfacing hardware such as OCR elements. These costs will be fixed. Another fixed cost will be any manuals, etc., which may be required. Certain costs, such as line charges and maintenance costs for an existing computer terminal, could be prorated by the percentage of time devoted to the project. Costs for materials, such as forms, will depend on the number of titles to be converted.

**Vendor or Bibliographic Utility Charges.** Vendor and bibliographic charges will depend upon the method selected and the vendor and/or utility chosen.

**Steps in the Project to be Costed**

1. **Searching.** Each record needs to be searched against the database used in the same manner as the random sample. This first step is important to isolate items that are not exact matches in the database.

   Labor costs for searching will depend upon the compensation rates of those assigned to search the records or construct search keys for use by a vendor.

   Most of the equipment and supply costs for the project will be encountered at this step since hardware must be in place to do the searching and documentation must be available. Supplies such as forms or floppy disks, if required, will also be needed for the searching process.

   Many commercial vendors and some bibliographic utilities will charge the library for each match encountered in their databases. These costs should be supplied by the vendor or utility.

2. **Verification and Editing.** The next step in the project is to verify that the record retrieved is the record desired, and then to edit it, if necessary, to conform to the standards set for the project. Again, labor costs will depend upon the level of compensation of the staff assigned the task. Verification is basically a matching process, comparing the shelflist record to the retrieved record to insure that the correct record was in fact retrieved. On a bibliographic utility, verification can be done immediately if the searching step is successful. A commercial vendor will send a
copy of the matching record, either in microform or hard copy, and will charge for this listing. Regardless of the method used, the amount of time necessary to examine a record should be comparable. If this figure was determined during the sampling procedure, it should be used. If it was not, a sampling should be made of current operations to determine the amount of time needed to verify and edit a record.

The editing procedure may include several steps, depending on the conversion method used. If conversion is being carried out through a bibliographic utility, editing includes updating the record, changing fields, completing fields, including the fixed field, and adding new fields. Each record must be updated, so this step should either be timed separately or included in the verification process. Changing, completing, and adding fields will apply to a smaller number of records and may be timed separately or included under general editing time. It is important to remember that this cost will apply only to the records being edited and should not be averaged out over all records. The percentage of records needing editing should have been determined during sampling. Labor costs will be the major portion of the costs for editing and will be determined by the level of employee assigned. If more than one level of employee is used, an average cost proportional to the amount of time each level devoted to this step should be used.

If the library is working with a commercial vendor, a slightly different editing procedure will be used. The changes and additions for each record would be added to the short record which had been sent for searching. No additional equipment charges would be incurred, but some measurement of typing time would have to be made so that labor costs could be determined.

3. Coding and Input of Non-hits. The third step in the conversion procedure is to determine how to proceed with the titles not matched in the searching step. There are three options. The unmatched titles can be searched through a bibliographic utility, edited and updated if found, or input if not found, in which case they are a subproject that should be separately costed using the above steps; or they can be prepared for vendor input, in which case the procedure is similar to the vendor editing procedure; or they can be turned over to the vendor for coding and input. In the first two alternatives, labor will be the major portion of the costs. The time under each of these alternatives can be taken from the sample survey, current operations, or a special sampling. In the third alternative, the only local cost is for preparing photocopies of the shelflist cards and mailing them to the vendor: labor, copying, and postage. In dealing with an outside vendor, it will be necessary to estimate mailing costs since vendors do not pay postage both ways.

Although there will be no additional equipment charges, there may be vendor or bibliographic utility charges based on the number of records added and input.

4. Obtaining Final Records. The cost of obtaining the final records of a conversion will vary and may include such items as a final tape charge, or costs for catalog cards, or a charge for adding holdings symbols to records in a utility database. The final tape charge is vendor dependent. Some vendors and utilities will supply a library with machine-readable
data for no extra charge, while others will require the tapes to be purchased separately. On the other hand, if the library is planning not to incorporate its tapes into an automated system immediately, it may wish to purchase catalog cards for the entries revised in the process of conversion. Replacement cards will be needed especially if a library has taken advantage of the conversion to update name access points, subject headings, or classification numbers. Another optional charge is that incurred for adding holdings symbols to records in a utility database by libraries whose conversion was accomplished by a vendor.

**Cost per Record**

Once the costs for the individual steps for each method have been determined, the total cost for each alternative, including any of the optional costs, can be calculated. The mean, or average per-item cost, is the total cost divided by the number of titles to be converted. The resulting per-item cost will reveal the method that is least expensive for the particular library.

**Examples**

To illustrate the application of the above model, suppose a library wishes to convert one hundred thousand titles. A random sample of the shelflist compared with OCLC showed that 25 percent of the titles were MARC records, 60 percent were non-MARC LC records, 10 percent were not LC cards, and 5 percent were not in the OCLC database. Further analysis revealed that 55 percent of the titles yielded records that were completely acceptable, 20 percent would need minor editing, such as changes to call numbers, subject headings, or other access points, and 20 percent needed major editing, such as adding fields and subfields, or coding the fixed field. Compensation rates at this library are $3.35 an hour for students, $5.50 an hour for clerical employees, $7.00 an hour for paraprofessionals, and $15.00 an hour for professional librarians.

Two methods of conversion will be costed using the data obtained from the random sample: (1) using OCLC for in-house conversion, and (2) using the services of a commercial vendor. Estimates of costs for each step using OCLC are shown in table 2 and for each step using a commercial vendor in table 3. The bases for the calculations are shown in the tables.

In the searching step, the base rate for OCLC is fifty titles an hour and for a commercial vendor, two hundred an hour. The searching calculations for the vendor method are more complex because of the smaller database oriented around LC records and the need for specialized supplies.

The estimate for verification and editing is based on the assumption that records retrieved will be saved and then called up later for checking and making any necessary changes. Since implementation of the automated system is assumed to be imminent, no cards will be ordered by the hypothetical library. All updating will be done during non-prime-time hours to obtain the lowest cost possible on OCLC.

The figures for the commercial vendor example assume that the ven-
<table>
<thead>
<tr>
<th>Step</th>
<th>Cost Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>1. Searching 100,000 titles with student labor—50/hr. at $3.35/hr.</td>
<td>$6,700 ($0.067)†</td>
</tr>
<tr>
<td>Total for searching</td>
<td></td>
</tr>
<tr>
<td>2. Updating 55,000 acceptable records with clerical labor—30/hr. at $5.50/hr.</td>
<td>$10,100 ($0.184)</td>
</tr>
<tr>
<td>Minor editing of 20,000 records with paraprofessional labor—20/hr. at $7.00/hr.</td>
<td>$7,000 ($0.35)</td>
</tr>
<tr>
<td>Major editing of 20,000 records with paraprofessional labor—10/hr. at $7.00/hr.</td>
<td>$14,000 ($0.70)</td>
</tr>
<tr>
<td>OCLC charge for updating 95,000 records in non-prime time at $0.25 ea.</td>
<td>$23,750 ($0.25)</td>
</tr>
<tr>
<td>Total for verification and editing</td>
<td>$54,850 $0.577</td>
</tr>
<tr>
<td>3. Coding and data preparation for 5,000 records with professional labor‡—3/hr. at $15.00/hr.</td>
<td>$25,000 ($5.00)</td>
</tr>
<tr>
<td>Inputting 5,000 records with clerical labor—6/hr. at $5.50/hr.</td>
<td>$4,600 ($0.92)</td>
</tr>
<tr>
<td>Proofreading and updating 5,000 records with professional labor—15/hr. at $15.00/hr.</td>
<td>$5,000 ($1.00)</td>
</tr>
<tr>
<td>Supplies: 5,000 workforms at $0.03 ea.</td>
<td>$150 ($0.03)</td>
</tr>
<tr>
<td>Total for input and coding</td>
<td>$34,750 $6.95</td>
</tr>
<tr>
<td>4. OCLC quarterly tape charge—assuming tapes are sent quarterly with each containing 10,000 records—$135/quarter</td>
<td>$1,350 ($0.0135)</td>
</tr>
<tr>
<td>OCLC tape handling charge—$35/tape</td>
<td>$350 ($0.035)</td>
</tr>
<tr>
<td>OCLC copying charge for 10,000 logical records per quarter records 1-1,000 at $0.06 ea. or $60/quarter = $600</td>
<td>$2,750 ($0.0275)</td>
</tr>
<tr>
<td>records 1,001-5,000 at $0.03 ea. or $120/quarter = $1,200</td>
<td></td>
</tr>
<tr>
<td>records 5,001-10,000 at $0.019 ea. or $95/quarter = $950</td>
<td></td>
</tr>
<tr>
<td>Total for obtaining final records from OCLC</td>
<td>$4,450 $0.0445</td>
</tr>
<tr>
<td>Grand Total</td>
<td>$100,750 $1.0075</td>
</tr>
</tbody>
</table>

*Estimates are based on the following projections from the random sample: Number of titles found = 95,000 (55,000 are acceptable as is; 20,000 need minor editing; 20,000 need major editing); Number of titles not found = 5,000. Estimates for labor costs have been rounded to the nearest $50; OCLC charges are current as of January 1984.
†The data in parentheses are the unit costs per item.
‡OCLC coding involves professional decision making and a thorough familiarity with the MARC format; the authors believe that professional labor is necessary for this step.
<table>
<thead>
<tr>
<th>Description</th>
<th>Cost Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Searching 85,000 titles with LC card numbers with clerical labor—200/hr. at $5.50/hr.</td>
<td>$2,350 ($0.0276)</td>
</tr>
<tr>
<td>Searching 15,000 titles needing short search with clerical labor—50/hr. at $5.50/hr.</td>
<td>$1,650 ($0.11)</td>
</tr>
<tr>
<td>2 IBM 915 OCR elements—$22 ea.</td>
<td>$44</td>
</tr>
<tr>
<td>40 boxes of OCR forms (2,500 forms/box)—$100/box</td>
<td>$4,000 ($0.04)</td>
</tr>
<tr>
<td>1 user manual</td>
<td>$25</td>
</tr>
<tr>
<td>Vendor charges for matching 85,000 titles with LCCNs and 10,000 titles with short search records—$0.05 ea.</td>
<td>$4,750 ($0.05)</td>
</tr>
<tr>
<td><strong>Total for searching</strong></td>
<td><strong>$12,819 $0.128</strong></td>
</tr>
<tr>
<td>2. <strong>“COM Edit List” containing 95,000 records—$0.02/title</strong></td>
<td><strong>$1,900 ($0.02)</strong></td>
</tr>
<tr>
<td>Master fiche containing 1,000 records/fiche—$3.00 ea.</td>
<td><strong>$285 ($0.003)</strong></td>
</tr>
<tr>
<td>Extra copies of fiche</td>
<td><strong>$20</strong></td>
</tr>
<tr>
<td>Checking 93,000 records in “COM Edit List” and editing 40,000 of the records with paraprofessional labor—20/hr at $7.00/hr.</td>
<td><strong>$33,250 ($0.35)</strong></td>
</tr>
<tr>
<td><strong>Total for verification and editing</strong></td>
<td>**$35,455 <strong>$0.373</strong></td>
</tr>
<tr>
<td>3. Augmenting 5,000 short search records with clerical labor §§—20/hr. at $5.50</td>
<td><strong>$1,400 ($0.28)</strong></td>
</tr>
<tr>
<td>Proofreading 5,000 augmented records with professional labor—15/hr. at $15.00/hr.</td>
<td><strong>$5,000 ($1.00)</strong></td>
</tr>
<tr>
<td>Vendor charge for entering 5,000 records—$0.10 ea.</td>
<td><strong>$500 ($0.10)</strong></td>
</tr>
<tr>
<td><strong>Total for input and coding</strong></td>
<td><strong>$6,900 $1.38</strong></td>
</tr>
<tr>
<td>4. Tape charges for all records—$0.02/record</td>
<td><strong>$2,000 ($0.02)</strong></td>
</tr>
<tr>
<td><strong>Total for obtaining final records</strong></td>
<td><strong>$2,000 $0.02</strong></td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>57,174 $0.572</strong></td>
</tr>
</tbody>
</table>

*Estimates are based on the following projections from the random sample: LC non-MARC records = 60,000; MARC records = 25,000; non-LC cataloging = 15,000. It has been assumed that 10,000 titles are in French, German, or Spanish and can be searched by the vendor and that 5,000 titles will not be found in the vendor’s database. Estimates for labor costs have been rounded to the nearest $50; vendor and supply costs are based on information available to the authors in the fall of 1982.

† The data in parentheses are the unit costs per item.

§ It has been assumed that the number of records to be edited will be the same as in the example in table 2; however, the type of editing will differ because all records in the vendor’s database are complete, though not all headings will have been changed to AACR2 form.

 §§ The authors have chosen the cheapest of the options suggested under “Coding and Input of Non-hits.” In contrast to the complex OCLC coding, the vendor’s forms are assumed to be precoded so that augmenting them is simply a matter of copying from the shelflist. Equal quality standards are maintained with proofreading by professionals.
The cost model portrays each record as having a unique identification number similar to the OCLC control number, so that only this number and the desired changes need to be typed and changes will be made at the time the record is verified. The number of records needing editing in the commercial vendor example is based on Dowell’s finding that about 25 percent of the records in a catalog will have at least one heading which is a non-AACR2 heading and an estimate that an additional 15 percent of the records will carry outdated subject headings. It is assumed that the vendor has accepted records as they were originally prepared and has not updated them. Any library contracting with a particular vendor for conversion services would want to clarify this point.

For the input and coding step, the commercial vendor example assumes that the short search record used in the searching step will be expanded to a full record on the same form. Since this is simply a matter of copying the shelf list card, it can be done by clerical-level employees. An alternative method is to have the vendor do the keying of these records, a procedure that could cost about $4.00 a record.¹⁰

Suppose that the random sample discussed above was drawn at the 95 percent confidence level accurate to within 2 percent. Thus the number of records requiring original input could vary from three thousand to seven thousand. The actual number will greatly affect the cost of using OCLC in-house because the unit cost for original input is so much greater than the unit cost for updating. The cost range is shown in table 4. It is this high input cost that is the cause of the great variation in total cost from a minimum of $88,000 to a maximum of $113,500. If only 5 percent level of accuracy had been used, the number of records could vary from none to ten thousand and the range of costs escalates to a minimum of $68,850 and a maximum of $132,600. This points out the need to be very accurate in taking the sample (a minimum of 3 percent accuracy is desirable) if the in-house method using a bibliographic utility is under consideration. For the commercial vendor costs shown in table 3, there is little difference in the cost between the verification and editing and the input and coding steps. Thus the range for the total cost will also be small—less than $75 for this example.

### TABLE 4

**Range of Costs**

**for a Hypothetical Conversion Project of 100,000 Titles Using OCLC In-house**

<table>
<thead>
<tr>
<th>Minimum No. of Hits (93,000)</th>
<th>Maximum No. of Hits (97,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 total</td>
<td>$6,700</td>
</tr>
<tr>
<td>Step 2 total</td>
<td>53,700</td>
</tr>
<tr>
<td>Step 3 total</td>
<td>48,650</td>
</tr>
<tr>
<td>Step 4 total</td>
<td>4,450</td>
</tr>
<tr>
<td>Total Cost</td>
<td>$113,500</td>
</tr>
</tbody>
</table>

*Based on a random sample taken with a 2 percent accuracy that indicates a 5 percent level of original input (5,000 records).*
CONCLUSIONS

These examples have been included as illustrations of a method for estimating costs of a retrospective conversion project and are not intended to compare specific methods favorably or unfavorably. Although the details of each step are different for alternate methods of conversion, the same basic steps are used. Any method can be costed following the procedure outlined in this paper and the examples shown in tables 2 and 3 as long as the user remembers to include all labor, supply, equipment, and vendor costs for each step. Items such as work forms can easily be forgotten.

However, the cheapest method is not necessarily the most cost-beneficial method. That will depend upon several other factors which affect the cost of the project but are not part of the cost determination. The major factor is the set of standards set for the project. The library must determine before starting conversion whether all headings will be in AACR2 or AACR2-compatible form, whether the complete MARC record is to be used, whether the most recent class numbers and subject headings will be used. The standards, in turn, will depend on the purpose of the conversion project. Presumably some form of computerization is desired, but is it for circulation, an online or COM catalog, or a total automated system? This purpose will, to a large extent, determine the minimum standards necessary. The goal should not be to accomplish conversion as inexpensively as possible, for that may cause greater problems later on. Rather, it should be to derive the most benefit possible for the lowest cost, to be cost-effective without being cheap.

REFERENCES

Kaiser’s Systematic Indexing

Robert D. Rodríguez

J. Kaiser (1868–1927) developed a system of subject indexing based on what he called “concretes” and “processes” to govern the form of subject headings and subdivisions. Although Kaiser applied his systematic indexing to specialized technical and business collections, his ideas are entirely applicable to all book collections and catalogs. Though largely ignored, Kaiser’s system is of permanent interest in the study of the development of subject analysis.

Interest in formulating principles of subject analysis arose in the late-nineteenth and early-twentieth centuries because of the failure of both catchword indexes and alphabetical indexes of existing classification systems to provide adequate subject control of books and information. Charles A. Cutter popularized the idea of specificity, and the principle of usage also came into prominence under the Library of Congress. Over the present century, specificity and usage as principles of subject heading practice have endured, but they have remained virtually the only working principles in the formulation or governance of terms. Though he developed novel and important principles for subject analysis and is highly praised by those familiar with his work, Julius Kaiser (1868–1927), author of Systematic Indexing, was and remains, unfortunately, neglected. Yet Kaiser’s scheme for systematic indexing, its principles entirely applicable to books as well as to periodical and technical material, should be of special historical and practical interest.

Despite his obscurity as a self-effacing individual and as librarian or indexer working in the specialized environments of the Tariff Commission of the United Kingdom, the Engineering Societies’ Library in New York, and various corporations, Kaiser was confident that his systematic indexing system was a significant achievement. In the introduction to his chief work he wrote,

It is the purpose of this volume to describe methods by which the actual information contained in our stock is made accessible. We shall take literature to pieces and re-arrange the pieces systematically so as to answer best our object in view. We shall see that by this method almost mathematical exactness can be reached in the manipulation and coordination of our information.

This “mathematical exactness” was to be achieved by new principles of subject indication.

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Kaiser recognized the overriding need for subject analysis versus the preoccupation with classification systems, and though he developed a practical notation for his own files, he subordinated it to his subject scheme and stressed the need for adequate indexing to accommodate the increasing quantity and specialization of books and periodical articles in his day. Kaiser was clearly determined to disengage subject indication from classification, so inextricably linked by, for example, Melvil Dewey’s Decimal Classification, where subject access provided by the relative index scattered headings through as many as twenty or thirty different places in the table, an inevitable result, according to Kaiser, because a subject can be considered under many different aspects, whereas a book could only be classed in one location in a scheme or on a shelf. Difficulty in subject access resulted from subordinating subjects to the conventions of an index based on a classification system rather than on the subjects themselves. The solution lay in not only disengaging subject indication from classification but, further, in systematizing the ways in which the varied aspects of a single subject could be expressed, a process calling for precision, directness, and lack of ambiguity, recognizing, as Kaiser puts it, that a thing cannot be completely described or known but only named, and expressed in terms of what a thing does or what is done to it.

Kaiser apparently did not know Cutter’s Rules for a Dictionary Catalogue, and its principle of specificity, and he was not interested in problems of usage or literary warrant. Instead he reduced all possible headings to terms of commodities (nouns) and terms of action (usually verbs) functioning as subdivisions. These he termed concretes and processes. With concretes as main headings, the function of all processes would be as subdivisions of concrete existences, thus providing direct access to specific subjects and their various aspects. As Kaiser explains:

Such direct and rapid access is only possible on the basis of the alphabet, i.e., by the physical structure of the terms, fixed place alphabetically, not a fixed place or places within a given scheme of classification; and the alphabetical terms can only be those bearing the actual information, not classes or subjects of classifications, titles, etc. Direct access also requires that all terms be used in the singular where there is a singular; further that inversions of terms be absolutely ruled out, for these inversions are merely a clumsy attempt at classification. Direct access also means filing under specific subjects rather than under collectives.

Kaiser foresaw the problems inherent in what Cutter called specificity (how specific is specific?), and he anticipated the weakness of the unpredictability of forms of headings, such as adjectival headings, inverted headings, phrase headings, and compound headings, a weakness that characterizes Library of Congress subject headings.

ELEMENTS OF KAISER’S SYSTEM

CONCRETES AND PROCESSES

In his 1911 monograph, Kaiser introduced his method thusly:

For our analysis we take neither the form of words as in grammar, nor the form of reasoning as in logic, we assume grammar and logic as given; we take for our
basis knowledge, the information... conveyed by written language. Our purpose in analyzing literature is: to discover those elements by means of which we may bring together knowledge or information of like kind.

From the standpoint of knowledge literature is confined to the description of concretes and terms of processes. They are the constant elements with which we have to deal. To put it into the simplest language we may say that literature names things and that these things are spoken of or described. The knowledge conveyed by literature all has reference either to things or to spoken of, i.e. concretes and processes.

Concretes may be considered movable (e.g., money, machinery, silk), immovable (land, rivers, resources), and abstract (labor, information); to these must be added countries as a special immovable concrete. Among processes, Kaiser offers as examples: exchange, trade, manufacture, description, construction, finishing, spinning, melting, emigration, organization. In his 1926 paper published in the ASLIB Proceedings, Kaiser accommodated what he called terms of energies to his definition of concretes as well as terms of state or condition to processes, so that processes were both dynamic and static conditions of concretes, stated as gerundive to distinguish a like form from its concrete meaning. Thus, typical concretes as main headings and main filing terms and processes as subdivisions or subsidiary filing terms would have the following appearance in a subject index or catalog.

AIR... circulation
COAL... combustion
COAL... consumption
COAL... transporting
FACTORY... ventilating
GAS... absorbing
LAND... draining
PETROLEUM... analysis
WATER... filtration

This combination of "concrete... process" is called by Kaiser a statement.

Should it be necessary to specify the country in which the concrete is located and where the action stated of the concrete takes place, the statement is formulated thusly: concrete... country... process. The three possible combinations of these terms permitted by Kaiser are:

Concrete and process  Example: Wool... scouring
Country and process  Brazil... education
Concrete, country, and process  Nitrate... Chile... trade

Kaiser distinguished movable, immovable, and abstract concretes in order to facilitate the indexer's determination of what is a concrete. But he insisted that the term should be direct, no matter how many words composed the concrete's name, whether it be "direct current engine type generator" or "high tension underground electric traction motor." Names of concretes were to be taken as found and not renamed (smallware not hardware, edge tools not cutlery). At the same time ab-
Abstract but common words combining a concrete and a process should be broken down and made as logically clear as possible, for example agriculture (Land . . . cultivation and/or Cattle . . . raising), bacteriology (Bacterium . . . study), and zoological geography (Animals . . . distribution). This could yield unusual but logical statements (education being Children . . . instruction). Terms should be expressed in the singular (Painting not Paintings) and qualified if ambiguous, for example File (tool) or File (furniture) rather than simply File.

Concretes should not be supplied if unnecessary, for nothing is thereby added to a general process. “National adjectives require care” and must be distinguished from country as a concrete: Indian ink is a legitimate term, but American butter or New Zealand mutton requires separating the concrete from the country. Prepositional phrases must be avoided and reduced to noun or adjective-noun form. Two or more concretes appearing in the same item of literature must be separated and entered as distinct statements. If there are many concretes involved, they may be collected into a class term or two, but specificity is always preferred. Kaiser offers special rules for terms of money and labor, which frequently occur as either concrete or process.

Rules for countries are fairly simple in Kaiser’s system. Local subdivisions of countries (states, provinces, counties, cities, islands, etc.) may be entered as second terms, but this practice is always what the Library of Congress would call indirect. The collective term colonies can be entered as a second term under the name of the country. Of course, a fixed name for a country must be adopted from the outset for countries known several ways. Since Kaiser permits, indeed encourages, the use of abbreviations for country names, he adopts UK for the United Kingdom, USA for the United States, NY for New York. If national adjectives occur as parts of the name of a country, they, too, may be abbreviated: Br for British, Fr for French, Ger for German, as well as the directions of the compass for geographical places: N, S, E, and W, as in Ger S W Africa for German Southwest Africa. Thus, in the interest of economy, Kaiser would eliminate unnecessary punctuation.

If a statement expresses a relationship between two countries, the two countries or concretes are simply entered together using a hyphen, for example, Japan-Mexico or Mexico-Japan if the work discusses both. If the relation involves a process, it must be recalled that the statement is always phrased concrete . . . country . . . process, and duplicate entry made as country . . . concrete . . . process. The process term is always entered after naming the two countries, the process referring to the first-named country. Hence, British exports to the United States would be stated UK, USA . . . Export. If a specific commodity is involved, the statement is UK, USA . . . Machinery . . . Export; for further specificity a secondary entry in the form USA, UK . . . Machinery . . . Import can be added. Further geographical subdivisions may be entered as well: UK, Manchester . . . Machinery . . . Export; with a second statement showing the reciprocal process then required. A work on the textile trade between Bradford and Chemnitz will be expressed in two statements: UK, Bradford . . . Textile . . . Trade and Germany, Chemnitz . . . Textile . . . Trade.
Rules for processes are virtually the same as those governing concretes, Kaiser adding that processes need not be expressed as verbs and, in fact, usually are not. He concludes these observations and rules with fundamental procedures for statements, reiterating the rules as a whole.

1. Select that which is of real value for your purpose regardless of form or extent.
2. Concentrate on the relatively specific information.
3. Deal with each item absolutely independently.
4. Do not tamper with names of concretes.
5. Avoid inversions, prepositions, and plurals where possible.
6. Test the accuracy of each statement both from the standpoint of the indexer and the consultor of the index.

AMPLIFICATION

Kaiser’s idea of amplification follows from the requirement to identify as specifically as possible all aspects of the piece of literature or “information” to be indexed.

In extracting our statement from a given information we disregard all but the three terms of which it has to be composed [i.e., concretes, countries, and processes]. Since the statement gives the approximate limits of the information, it follows that whatever is left unused of the information can only be in amplification of the statement, for if there be information unused which cannot be regarded as amplification of the statement, then the statement is faulty; we would have to widen our statement so as include it, or if that is impossible, then our information is not confined to one concrete—we would require more than one statement to deal with it. Using the term amplification in the sense stated, i.e., filling out the statement, or building up from it, we may say therefore

1. The amplification can only be in extension of the statement.
2. Statement and amplification cover the whole information given on a particular concrete.

While the statement must be constructed on very definite rules because it is also used for the filing or classing of the information, more latitude may be allowed in the amplification because it has no bearing on filing. Again while the statement is obligatory, the amplification is more or less optional.

The amplification has two objects:
1. To amplify the statement so as to cover the whole contents of the original information.
2. To give the data available for the purpose of identifying the original, in case it should be required.

Kaiser lists as elements of amplification date of information (i.e., time during which the action named by the process took place), authors, name of publication, place and date, pagination, edition, and call number. The amplification, therefore, is not a subject tool but a filing tool for works about the same subject and demonstrates Kaiser’s desire to create a systematic subject index on cards. He would place all these elements on a card with fixed locations for each datum (see figures 1 and 2).

GUIDES

To Kaiser, the guides for his subject index “constitute one of the most useful elements in the card system,” substituting for a cross-reference
1. Concrete.
2. Country.
4. Call number.
5. Date of information.
7. Title and place of publication.
8. Date of publication.
10. Author.
11. Indirect author.

Figure 1
Division of Card Surface and Table of Assigned Positions on the Card system and providing a syndetic structure.¹⁰ Instead of cross-references Kaiser used what he called related terms or terms related to the commodities and energies comprising the concretes. As Kaiser explained,

Instead of using an intricate classification for connecting up, we treat the concrete terms somewhat like geometric magnitudes, i.e., one compared with another is either equal, greater or smaller, in the extent of its meaning; if equal, then we call the terms Synonyms and prefix the equal sign; if greater, then we call the terms Higher Collectives and mark them <; if smaller, then we call
them Lower Specifics and mark them >. For every concrete in the card index there is a first guide on which these related terms are tabulated, as shown in the figure following: . . .\textsuperscript{11}

Figure 3 illustrates nearly all of the features of an index entry required by Kaiser. The concrete term boiler (a) is entered on the guide card at the upper left corner, with the related terms “posted” to the guide (b). The dashes after certain terms indicate the presence of an adjectival entry elsewhere in the index, such as high pressure boiler or watertube boiler. Guide cards for processes bear the term at the upper right (d). Entries for countries are filed after all processes (e). At the end of the file, a raised card is entered (f) for the purpose of “showing that the positions of the filing terms correspond to the positions of the guide; also the place of the call number referring to a specific document, the page on which the information appears being added after the dash.”\textsuperscript{12}

In his 1911 monograph, Kaiser offers sixteen examples of individual entries, including typical amplifications, fifty-three examples of entries with statement, date of information, and extension, and ten sample guides with posted related terms both of concretes and countries.

**CRITICISM OF KAISER’S SYSTEMATIC INDEXING**

In considering the perceived weaknesses of Kaiser’s indexing method, account must be taken of the context of debate at the time over the value of subject indicators dependent upon or derived from a classification system as opposed to alphabetical subject indexes independent of a classification system. Whether the time was 1911 or 1926, the predominant mood in England favored the decimal classification and classified catalogs. Thus, in the reported discussion that followed the presentation of Kaiser’s paper before ASLIB in 1926,\textsuperscript{13} P. K. Turner expressed disfavor with Kaiser’s system because, in the first place, it was not the al-
alphabetical index to a classification but a mere alphabetical list.

On that basis, then, he [Turner] asserted that the whole system was fundamentally wrong. It appeared to be directed entirely towards easy preparation and disposal of the references by the indexer, rather than towards easy use by others—perhaps a natural tendency on the part of a professional indexer, but hardly, he thought, to be encouraged.

Here is the fundamental difference between theoretical and practical classification and subject indication. In Turner's view (and he epitomizes the critique of Kaiser in what follows) a preconceived classification system, with its own index, will order materials in a logical and predictable manner independent of choice of headings where the letters of the words alone determine arrangement. As he puts it in the notes of the discussion, "Some systematic classification [is] superior to any alphabetic one." But Kaiser was attempting to bypass the ambitious task of constructing an abstract and rarified classification scheme which would supposedly include the universe of possible subjects as a prerequisite to retrieving information from a library or file. Kaiser would maintain that while his systematic indexing would be easier to construct ex nihilo than, say, the Dewey decimal classification, it was also easier to use and more precise than the relative index to a classification system.
Turner criticized Kaiser's subordination of processes of concretes to subdivisions. With the example combustion, Turner argues, as much demand for all materials on combustion would arise as would for combustion of specific materials, resulting in the need for separate indexes for process headings and undoing the directive that processes must be subordinate to concretes.

It is true that works on a process in general would compel the creation of a process as main heading, such as the process term education, which is treated as both concrete and process—to borrow Kaiser's terminology—by the Library of Congress, for example. More detailed rules for processes remained to be worked out, although Kaiser acknowledged the need.

Turner disdained Kaiser's designations of higher collectives, synonyms, and lower specifics as artificial constructions already inherent in a logical classification. Theoretical classifications such as Dewey's system do establish these relationships, and the index to such a system will not need to duplicate this effort. This argument against Kaiser assumes, however, that subject indication cannot be expressed independently of a classification system, while Kaiser is attempting to prove that it can. What could be called syndetic structure in subject heading systems can be constructed without reference to a classification system. The thrust of this effort evolved not in England or Europe but in the United States under the Library of Congress, though Kaiser's principles anticipated this movement.

Kaiser hoped to limit severely the number of terms permitted in his index; one method was to distinguish a class of terms for main headings and a distinct class of terms for subdivisions used exclusively as such. The concretes and processes rule would govern the use but the purpose was not solely an expression of this rule. The distinction between terms and subjects expressed one of Kaiser's basic principles of subject cataloging.

Subjects of book classifications are made up of various classes of terms which constitutes one of their main troubles...; concretes and processes are all mixed up, and we can continue to sub-divide indefinitely. In systematic indexing, concretes and processes have been brought into relation so that they cannot be mixed up, and there are no endless subdivisions; concretes are simply divided by processes. In book classification it is practically impossible to concentrate at one point without a large amount of duplication. In systematic indexing concentration is automatic and ample.  

To Turner, this limitation of subdivisions was to "damn the system." "Endless" subdivisions might, in fact, be necessary. A logical classification could accommodate such detail, while an indexing system such as Kaiser's could not. But it is doubtful that Dewey's classification (Turner's "logical" classification) could accommodate detail without "endless" book notation—as is well known today—or that this would be perceived as an advantage by users of the system. Nor does it appear that Kaiser would not "give reference to an item of knowledge under every reasonable heading to which reference might be made," as Turner claims; for having studied the system of concretes, processes, and cross-
references, the user ought to understand what can be expected.

An important and revealing criticism of Kaiser’s scheme by Turner, the proponent of classification, is the following:

It seemed that the author [Kaiser] could not really have grasped the essence of bibliography. He said, in paragraph 25:

“Given a vast number of terms, the problem is to divide them into a very small number of classes so that there shall be no overlapping between the classes and yet so that all the terms are completely covered.”

But in an actual majority of instances, items to be filed or indexed dealt with relationships, often between two subjects wide apart from every point of view except one. The whole idea of classes with no overlapping was hopeless from the start, and one must make provision (as was well done in the Brussels index) for entries whose essence was in the fact that they appertained to two or more subjects.  

Kaiser makes little provision for overlapping topics. But the identical problem occurs in the index of the Decimal classification, for it is a terminological rather than notational question. Of course, a certain notation can represent any number of overlapping subjects, a problem approached with considerable imagination by faceted analysis, but the true problem is in expressing such overlapping topics in a single term or heading. Such is the challenge for subject indication, but clearly a classification system is bound to express this in a different way.


He could not conceive of any item of information worthy of filing (except under ‘philology’ or ‘belles lettres’) which had an indefinite subject, and was constrained to believe that Mr. Kaiser meant either one that did not fit his scheme, or one that the indexer was too lazy to investigate and classify. The whole of this objection to logical classifications seemed to fall to the ground.

This problem, as already mentioned, has to do with Kaiser’s dependence upon processes as the essential basis of his system. Speaking for Kaiser at the conference, W. Barbour, his associate, replied that the Kaiser system had given excellent results when applied to business, science and technology, and that the application of the scheme to abstract subjects such as religion and philosophy would call for the possibility of having to index entirely by processes, a possibility Kaiser had anticipated in his 1911 monograph. Barbour proposed a technique, the reverse of the procedure adopted for “commodities” or “energies,” wherein an index of processes as filing terms tied to concretes would be constructed, paralleling the index of concretes. In fact, a process file for existing Kaiser systems was proving helpful, appearing, without amplification, in this manner:

Sensitiveness to shock of

Guncotton . . . 21.2376-15
Lead azide . . . E5971
Trinitrotoluene . . . P36.2-275
This "processes" file could either be a separate index or interfiled alphabetically with the existing "concretes" file.

In any case, Barbour stated, the terminology of concrete/process for abstract terms could be revised, because many terms in abstract areas of knowledge function as concretes. There was no intended inflexibility to Kaiser's system. Indeed, Barbour quoted a letter from Kaiser on the utility of his subject indexing principles for municipal public libraries and how they could be adapted to the degree of detail and depth required by various types of users.

It is curious how, even in 1926, interested and representative librarians at the ASLIB conference failed to distinguish classification and subject indication, that the necessity to supplement classification systems with an alphabetical subject index (and not merely a "relative" index for the classifier) should still be under heated debate. If this distinction had been admitted, here and elsewhere, then the merits and weaknesses of Kaiser's systematic indexing could have been addressed without prejudice, and the name of Kaiser would be recognized in larger circles today. But in fact Turner concluded his remarks by first quoting Kaiser: "There is no doubt in my mind that the schemes are fundamentally weak" [Turner's emphasis] and replying that "for his part, it would seem that the fundamental weakness was not in the schemes, but—elsewhere!"

Kaiser died the year following the presentation of the ASLIB paper; his name barely surfaces in the library literature subsequently.

**CONCLUSION**

"Kaiser's system went too far for most librarians," says Jessica Lee Harris; "he never mentions the principle of reader usage." Kaiser probably did go too far, but so do most thinkers who attempt to challenge a prevalent and embedded way of thinking. Reader usage and the principle of literary warrant was left to the work of E. Wyndham Hulme and the Library of Congress. Nevertheless, Kaiser believed that the simplicity and clarity of his rules were unique and the rules easy to employ once understood. This simplicity of his concretes and processes rules and the rules governing subdivisions makes Kaiser's system attractive even today. "In sheer capacity for really scientific and logical thinking Kaiser's was probably the best mind that ever applied itself to subject indexing," John Metcalfe has said of him. Adds R. K. Olding: "Library subject cataloguing would now be both easier and more predictable had Kaiser's method enjoyed a wider influence."

**REFERENCES**

2. Ibid. par.16.
5. Ibid., par.299–300.
8. Ibid., par.348.
9. Ibid., par.304, 349-50.
10. Ibid., par.399.
12. Ibid., p.25.
13. Ibid., p.33-44.
14. Ibid., p.34.
15. Ibid.
16. Ibid., p.25.
17. Ibid., p.35.
18. Ibid.
19. Ibid.
20. Ibid., p.39.
21. Ibid., p.35.
Influence of the Card Catalog on Circulation in a Small Public Library

William Aguilar

This study has attempted to determine the influence a card catalog has on circulation in a small public library. One hundred ninety-eight books were selected randomly from the nonjuvenile collection and circulation of each title for a fourteen-week period was ascertained. The books were then divided into two groups. Group A, the experimental group, had all related catalog entries withdrawn from the card catalog, while the cards for Group B, the control group, were left intact. The removal of the cards had no statistically significant influence on circulation.

The card catalog is unquestionably the most important tool in any library, and is frequently described as the key to the library. Because of its importance it is not surprising that there have been numerous studies of card catalog usage. For example, Markey identified more than forty major catalog use studies in public libraries dealing specifically with subject access. The question of use/nonuse has been explored in several studies. Based on a review of the literature Meyer surmised, "Most people avoid the catalog when they can. Many particularly in public libraries, never use it at all." Irwin and Bovey and Mullich acknowledge that the nonuse of card catalogs may not be limited to a particular type of library—it may be a universal phenomenon.

Assuming Meyer’s generalization to be correct, is there any justification for card catalogs, particularly in small public libraries? In 1974 the National Center for Education Statistics reported that public libraries serving areas with fewer than ten thousand inhabitants outnumber all the other population categories for public libraries combined almost two to one. The center further reported that these libraries averaged 0.9 full-time staff per library, and all had receipts of less than ten thousand dollars per year. With present and expected future financial constraints it is quite obvious that small public libraries cannot afford to provide costly services which are rarely used.

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Two of the questions catalogs can answer are (1) Does the library own a particular title, and (2) if so, where is it located? These questions lead to the assumption that catalogs influence circulation. One would expect that other things being equal, a complete and up-to-date catalog would facilitate the location of desired materials, thereby increasing circulation. Conversely, an out-of-date or incomplete catalog would not provide the guidance and assistance needed and, consequently, circulation would be lower.

Krikelais, however, points out that the correlation of catalog use and circulation has not been substantiated:

Lipetz (1970) calculated that the catalog at Yale was consulted over 350,000 times during a one-year period. This figure closely approximates the circulation figures for that time span. Whether catalog use and circulation are equally good indicators of total library activity is unclear, since no previous researcher has compared them. . . . If further studies provide additional support, it may be possible to estimate catalog use by projecting from readily available circulation data, thus avoiding the more expensive process of direct observation.

**Purpose of the Study**

To date, the studies correlating catalog use and circulation have been limited to research libraries, for example, Lipetz' and Palmer. In contrast, the present study examined the influence of catalog use on circulation at a small public library. It was hypothesized that in a small public library the listing of materials in a card catalog would not be a statistically significant factor affecting circulation because most users of a small public library find materials via browsing rather than by the use of information located in the card catalog.

For purposes of this study the terms listed below were defined as follows:

- **Small public library**—A library serving a community of users with a population of less than ten thousand.
- **Statistically significant**—Operationally defined as statistically significant at the 5 percent level.
- **Browsing**—The definition used by Goldhor was applied in this study: . . . browsing is defined as the casual examination of books at random to find something to borrow and read, with no purposive search for a specific title or a particular class of books. The distinguishing element of browsing as a method of selecting books is that the reader comes to the library without having in mind 1 or more specific titles which he or she hopes to find and borrow—or even necessarily a specific class of books from which he will choose. As a consequence, the reader is open to influence from a variety of factors (including chance) in the library.

The study was conducted at Allerton Public Library (APL), a small public library located in Monticello, Illinois. At the time of the study APL served a population of 5,275 of which an estimated 3,500 were registered borrowers, and as of June 30, 1982, the collection contained 28,719 volumes. During FY 1981–82, the circulation of adult material was 28,332 volumes; however, these figures reflect only a nine-month period, since the library was in the process of altering its fiscal year to
correspond with the calendar year. Library personnel included three full-time librarians, one part-time children’s librarian, three part-time assistants, and one part-time maintenance worker. APL is a member of the Lincoln Trail Libraries System, a state regional system, and during FY 1981–82 receipts totaled $129,205.

Prior to June 1981, APL used a manual circulation system; however, in June they introduced CL Systems, Inc. (CLSI), an online automated circulation system which uses zebra strips to identify materials and borrowers’ cards. Two important aspects of CLSI’s operation influenced the present study: (1) CLSI does not distinguish between first loans and renewals, and (2) when an item is returned, CLSI does not retain borrower information. In the previous manual system it was possible to determine whether a charge was a renewal or an original loan by examining the user identification number; with CLSI, once an item has been returned the user information is deleted from the system, though a record is maintained indicating that the title circulated. For this study, no distinction was made between an initial borrowing transaction and a renewal.

METHODOLOGY

As stated earlier, the purpose of this study was to determine the influence of the card catalog on circulation. Obviously, books for which cards had not been incorporated into the card catalog (e.g., paperbacks, recent arrivals), and books that did not circulate (e.g., special collections, reference) could not be considered. Also omitted from the study were children’s books, as frequently these are selected by someone other than the intended user, and audiovisual materials, because the quality of cataloging in this area is quite disparate. Multicopy titles also were omitted since serendipitously one is more likely to locate and borrow a title for which multiple copies are available. The pre-experimental period was from April 1 to July 17, 1982, and the experimental period ran from July 18 to October 31, 1982.

To select the sample books, the relevant shelflist drawers were assigned numbers from one to twenty-two, inclusive. Two hundred numbers, none larger than twenty-two, were selected with the use of a random numbers table. In addition, the shelflist trays were measured and found to be fifteen inches long. Again, using a random numbers table, two hundred numbers, none larger than fifteen, were selected. The two groups of numbers were paired—one number represented the tray, and the second represented the location of the card within the tray. If a number did not correspond to the number of inches of cards in the drawer, a new card location number was selected from the random numbers table. After selecting two hundred titles, the sample was shuffled (face down) and dealt into two groups of one hundred each; one group was arbitrarily designated as Group A (experimental) and the other as Group B (control).

Next, the two hundred books were searched in the collection; eighteen of the sample books were in circulation and were subsequently recalled for purposes of the study. Although it would have been easier to select another eighteen books, this alternative was rejected as it would tend to
bias the sample toward books that did not circulate. Since two books were not located, there were one hundred books in Group A and ninety-eight in Group B.

**Analysis of the Variables**

Once the books were located it was possible to compile descriptive data on each book. Eight variables were examined to determine if they had any influence on circulation. The procedures used in analyzing the variables are described below:

1. **Number of Circulations Prior to the Study.** The number of circulations prior to the study was determined by counting user identification numbers listed on the book cards. However, for books borrowed after the installation of CLSI, when book cards were discarded, the number of previous circulations was gauged by counting the number of stamps on the date-due slips. It should be mentioned that in a few instances it appeared as though the book card were a duplicate. However, as such duplication could not be validated, the number of circulations was not augmented. The number of circulations ranged from zero to sixty-one, with a mean of fourteen.

2. **Date of Publication.** The publication dates ranged from 1902 through 1982, with a mean publication date of 1972.

3. **Recency of Acquisition.** At APL a five-digit accession number is assigned to each volume. While the numbers do not specify the date on which a given volume was acquired, they do provide some insight into the relative recency of acquisition in comparison to other volumes. The acquisition numbers ranged from a low of 4,186 to a high of 65,557, and in three instances none were found. The mean acquisition number was 52,918.

4. **Number of Pages.** The length of the books ranged from 64 pages to 842 pages, with a mean of 284.

5. **Number of Illustrations.** An illustration was defined to include photographs, charts, maps, diagrams, and tables. The number of illustrations was divided into four categories: (1) no illustrations, (2) one-nine, (3) ten-nineteen, and (4) twenty or more. Seventy percent had no illustrations, 4 percent had between one and nine, 4 percent had between ten and nineteen, and 22 percent had twenty or more illustrations.

6. **Presence or Absence of Book Jacket.** Seventy-four percent of the sample books had book jackets.

7. **Type of Binding.** Only 1 percent of the 198 sample books had been rebound. As a result of this uniformity, no further analysis was made.

8. **Physical Condition.** Evaluating the physical condition of the sample books was quite obviously a subjective interpretation by the investigator, who concluded that 88 percent were in good condition, 9 percent in fair condition, and 3 percent in poor condition.

After collecting data pertaining to the variables, the books were then marked with a large red slash (/) on the upper right corner of the book.
pocket to remind the circulation staff that a questionnaire should be
given to the borrower. Finally, the sample books were returned to the
shelves and the catalog cards for Group A were removed from the card
catalog. Each borrower bringing a sample book to the circulation desk
was given a questionnaire in which library staff recorded the call num-
ber, author, and title. Borrowers were requested to complete the ques-
tionnaire before leaving the library and to return it to a specially design-
nated box. To avoid any infringement of privacy, borrowers were not
asked to identify themselves.

Basically, the questionnaire sought to ascertain if users had predeter-
mined borrowings before entering the library; whether the card catalog
was consulted; identification of specific factors which could influence
book selection; and demographic data.

The CLSI circulation system used at APL made it possible to note the
number of circulations for each book in the sample experiment.

**COMPARISON OF CONTROL
AND EXPERIMENTAL GROUPS**

The purpose of comparing the control and experimental groups was
to determine if they were fundamentally equivalent, and if not, what the
differences were. In this study, differences were considered statistically
significant at the .05 level. In other words, in at least five times out of a
hundred trials chance alone could not cause the differences between
Group A and B. As shown in table 1, none of the variables reflected a
difference between Groups A and B at the 5 percent level of statistical
significance. Briefly stated, Groups A and B were essentially identical.

**FINDINGS**

Succinctly stated, removal of cards from the card catalog did not have
a statistically significant influence on circulation. The number of circu-
lations occurring during the pre-experimental and experimental periods
is shown in table 2.

**TABLE 1**

**COMPARISON OF CONTROL AND EXPERIMENTAL GROUPS**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Experimental Group Mean (N = 100)</th>
<th>Control Group Mean (N = 98)</th>
<th>Level of Significant Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of circulations prior to the study</td>
<td>14</td>
<td>15</td>
<td>.83</td>
</tr>
<tr>
<td>Date of publication</td>
<td>1970</td>
<td>1973</td>
<td>.12</td>
</tr>
<tr>
<td>Recency of acquisition</td>
<td>52,348</td>
<td>53,495</td>
<td>.46</td>
</tr>
<tr>
<td>Number of pages</td>
<td>302</td>
<td>266</td>
<td>.06</td>
</tr>
<tr>
<td>Number of illustrations</td>
<td>1.87*</td>
<td>1.67*</td>
<td>.28</td>
</tr>
<tr>
<td>Book jacket</td>
<td>1.29*</td>
<td>1.26*</td>
<td>.61</td>
</tr>
<tr>
<td>Physical condition</td>
<td>1.15*</td>
<td>1.13*</td>
<td>.77</td>
</tr>
</tbody>
</table>

*These values are based on the following codes: Number of illustrations: 1 = none; 2 = one to nine; 3 = ten to nineteen; 4 = twenty or more. Book jacket: 1 = yes; 2 = no. Physical condition: 1 = good; 2 = fair; 3 = poor.
TABLE 2  
NUMBER OF CIRCULATIONS

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-Experimental Period</th>
<th>Experimental Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental group (A)</td>
<td>41</td>
<td>34</td>
</tr>
<tr>
<td>Control group (B)</td>
<td>44</td>
<td>43</td>
</tr>
</tbody>
</table>

Obviously, the difference in circulations during the pre-experimental period was not significant (.77 level); during the experimental period the difference in circulation was at the .44 level, again not statistically significant. Although the difference in circulation for Groups A and B during the experimental period may not be statistically significant, it may be pragmatically significant. Circulation for Group A dropped by 17 percent, whereas circulation for Group B dropped only 2 percent. The figures, however, are so low that a few additional borrowings could have had a dramatic influence on the resulting percentages.

The number of individual titles borrowed from each group is shown in table 3. It is apparent that the differences are not significant.

TABLE 3  
NUMBER OF TITLES BORROWED

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-Experimental Period</th>
<th>Experimental Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental group (A)</td>
<td>27</td>
<td>24</td>
</tr>
<tr>
<td>Control group (B)</td>
<td>24</td>
<td>23</td>
</tr>
</tbody>
</table>

T-tests were conducted to determine if there were any significant differences between the books which circulated from both groups. The results as shown in table 4 indicate there were no significant differences, suggesting that the books which were borrowed were virtually the same for Groups A and B.

TABLE 4  
COMPARISON OF BOOKS THAT CIRCULATED

<table>
<thead>
<tr>
<th>Variables</th>
<th>Experimental Group Mean (N = 24)</th>
<th>Control Group Mean (N = 23)</th>
<th>Level of Significant Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of circulations prior to the study</td>
<td>17</td>
<td>15</td>
<td>.64</td>
</tr>
<tr>
<td>Date of publication</td>
<td>1971</td>
<td>1975</td>
<td>.26</td>
</tr>
<tr>
<td>Recency of acquisition</td>
<td>54467</td>
<td>56267</td>
<td>.59</td>
</tr>
<tr>
<td>Number of pages</td>
<td>330</td>
<td>289</td>
<td>.35</td>
</tr>
<tr>
<td>Number of illustrations</td>
<td>1.92*</td>
<td>1.52*</td>
<td>.30</td>
</tr>
<tr>
<td>Book jacket</td>
<td>1.30*</td>
<td>1.30*</td>
<td>.94†</td>
</tr>
<tr>
<td>Physical condition</td>
<td>1.17*</td>
<td>1.30*</td>
<td>.41</td>
</tr>
</tbody>
</table>

*These values are based on the following codes: Number of illustrations: 1 = none; 2 = one to nine; 3 = ten to nineteen; 4 = twenty or more. Book jacket: 1 = yes; 2 = no. Physical condition: 1 = good; 2 = fair; 3 = poor.
†All figures have been rounded; consequently a perfect correlation of 1.00 is not shown.
Perhaps the most telling and most revealing t-test conducted was one in which the books which circulated from Group A were compared against books which did not circulate from the same group. For purposes of this comparison a new variable is introduced into table 5, "Circulations during pre-experimental period." As can be seen, this variable proved to be significant at the .00 level. Of the twenty-four books which circulated from Group A during the experimental period, thirteen had circulated during the pre-experimental period. This finding confirms what has long been known—recent previous use is a good predictor of future use. Although not shown, the same test was conducted for the control group; the results for the same variable were significant at the .02 level, thus paralleling the findings for Group A.

**TABLE 5**  
Comparison of Books that Circulated from Group A with Books that Did Not Circulate

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean of Books which Circulated (N = 24)</th>
<th>Mean of Books Which Did Not Circulate (N = 76)</th>
<th>Level of Significant Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of circulations during pre-experimental period</td>
<td>.54</td>
<td>.18</td>
<td>.00</td>
</tr>
<tr>
<td>No. of circulations prior to the study</td>
<td>17</td>
<td>13</td>
<td>.16</td>
</tr>
<tr>
<td>Date of publication</td>
<td>1971</td>
<td>1970</td>
<td>.70</td>
</tr>
<tr>
<td>Recency of acquisition</td>
<td>54467</td>
<td>51661</td>
<td>.32</td>
</tr>
<tr>
<td>Number of pages</td>
<td>330</td>
<td>293</td>
<td>.31</td>
</tr>
<tr>
<td>Number of illustrations</td>
<td>1.92*</td>
<td>1.86*</td>
<td>.85</td>
</tr>
<tr>
<td>Book jacket</td>
<td>1.30*</td>
<td>1.29*</td>
<td>.98</td>
</tr>
<tr>
<td>Physical condition</td>
<td>1.17*</td>
<td>1.14*</td>
<td>.82</td>
</tr>
</tbody>
</table>

*These values are based on the following codes: Number of illustrations: 1 = none; 2 = one to nine; 3 = ten to nineteen; 4 = twenty or more. Book jacket: 1 = yes; 2 = no. Physical condition: 1 = good; 2 = fair; 3 = poor.

**QUESTIONNAIRE RESPONSE**

The primary purposes of the questionnaire were to determine if users used the card catalog, and whether or not browsing influenced selection. As stated earlier, every time a sample book was borrowed, a questionnaire was to be given to the borrower. Unfortunately, either a number of borrowers were not provided a questionnaire, or else they chose not to return them. The other possibility is that users renewed books over the phone, and a questionnaire could not be distributed.

For the seventy-seven circulations which occurred during the experimental period, twenty-eight questionnaires were returned, for a 36 percent response. Of the forty-seven books which circulated, questionnaires representing twenty-three books were received, representing a questionnaire/book response rate of 49 percent.

In spite of the low questionnaire response, the data as shown in table 6 seem to suggest that there are no significant differences between borrow-
ers from both groups. The responses suggest several generalizations about the twenty-eight borrowers participating in this facet of the experiment: (1) Most did not have a specific title in mind prior to entering APL, (2) the majority did not use the card catalog, and (3) browsing was a major influence on the selection process. In addition, it appears that most borrowers were not students, most were females, and the majority were over forty years of age. The reader is cautioned, however, that as a result of the small sample size additional data validating the responses are needed. Furthermore, the fact that one user of the experimental group claims to have used the card catalog suggests that self-reporting may not be entirely reliable, or that the user sought the book via the card catalog and found it in spite of the absence of entries.

TABLE 6

<table>
<thead>
<tr>
<th>Abbreviated Question</th>
<th>Exp. Group Response (N = 16)</th>
<th>Control Group Response (N = 12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Know prior to entering APL that you wanted to borrow this book?</td>
<td>Yes: 3 Yes: 4</td>
<td>No: 13 No: 8</td>
</tr>
<tr>
<td>2. Use card catalog?</td>
<td>Yes: 1 Yes: 3</td>
<td>No: 15 No: 9</td>
</tr>
<tr>
<td>3. Factors influencing selection?</td>
<td>Browsing: 10 Browsing: 8</td>
<td>Other: 3 Other: 2</td>
</tr>
<tr>
<td></td>
<td>Librarian: 2 Librarian: 1</td>
<td>Review: 1 Card Cat.: 1</td>
</tr>
<tr>
<td>4. Student:</td>
<td>Yes: 2 Yes: 1</td>
<td>No: 14 No: 11</td>
</tr>
<tr>
<td>If yes, level?</td>
<td>High Sch.: 1 High Sch.: 1</td>
<td>Elemen. 1</td>
</tr>
<tr>
<td>5. Sex:</td>
<td>Female: 13 Female: 9</td>
<td>Male: 3 Male: 3</td>
</tr>
<tr>
<td>6. Age:</td>
<td>20 or less: 2 20 or less: 1</td>
<td>21-39: 2 21-39: 3</td>
</tr>
<tr>
<td></td>
<td>40-59: 7 40-59: 2</td>
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CONCLUSIONS

This study has attempted to determine the influence a card catalog has on circulation in a small public library. The study design used the experimental method. One hundred ninety-eight books were selected randomly from the collection and their circulation was computed during a pre-experimental period. The books were then divided into two groups; Group A, the experimental group of one hundred, had all related catalog cards (author, title, subject, and added entries) withdrawn from the card catalog, while the cards for the ninety-eight titles in Group B, the control group, were left intact.

The circulation of Groups A and B was monitored over an experimen-
Influence of the Card Catalog

tal period of fourteen weeks. In addition, borrowers of the sample books were given a questionnaire that attempted to measure use/nonuse of the card catalog, selection method, and demographic data.

The results of the study suggest that the card catalog does not have a significant influence on circulation in the library studied. T-tests conducted to determine if any of eight variables could account for differences in the circulation patterns of Groups A and B indicated that none of the variables influenced circulation. However, a comparison of the books which circulated from Group A with those which did not, during the pre-experimental period, proved to be significant at the .00 level. This confirms previous findings that circulation which occurs in the recent past is a valid predictor of future use.

The results of the questionnaires, however, are not as conclusive as was hoped for; for the seventy-seven circulations which occurred during the experimental period only twenty-eight were returned, for a questionnaire response of 36 percent. Nevertheless, the results suggest that small public library users may not use the card catalog; that most users may not have a specific book in mind to borrow prior to entering the library, and most users appear to locate materials by browsing.

In summary, it appears that the hypothesis has been supported—in a small public library the listing of materials in a card catalog is not a statistically significant factor influencing circulation. The probable reason is that most users of a small public library find materials via browsing rather than by the use of the information in the card catalog.

Before small public libraries begin to abandon the card catalog, however, further study is needed. Modifications in the methodology employed in this study are needed. Specifically, books must be labeled more prominently so that circulation staff will be more consistent in distributing questionnaires to the borrowers. Ideally, in an automated system, the terminal would flash a message to the circulation clerk. Another alternative, which typically produces a high degree of success, is one where the user would be interviewed by phone; however, the privacy issue must be considered. It may be possible to overcome this obstacle if the calling is conducted by library staff rather than an outside investigator. A longer experimental period would also be preferred.

It is understood that this study has not investigated the value of the card catalog to the library staff of a small public library. Casual observation suggests, however, that library personnel may be less likely to use the card catalog since frequently they are already aware of the holdings and their locations. In some instances, they are even aware of availability. Nonetheless, further study examining the value of the card catalog to library personnel is in order.

In conclusion, assuming that the findings in this study are representative, the operational changes for small public libraries are apparent. Serious consideration should be given to the amount of time and monies expended on cataloging and classification. Perhaps the less expensive bookstore model, where card catalogs are not available, and where users locate materials via browsing, is worthy of further study and exploration.
REFERENCES


From: Lawrence W. S. Auld, Assistant Dean, Graduate School of Library and Information Science, University of Illinois at Urbana-Champaign. —Sheila S. Intner’s “Suggestions for the Cataloging of Machine-Readable Materials” (LRTS 27:366-70) presents some important points regarding the usefulness of chapter 9 of AACR2. As a member of the Subcommittee on Rules for Cataloging MRDF—the Subcommittee prepared the extensive set of working papers which were the basis for the content of chapter 9—1 am pleased to see increasing interest in what was, until very recently, an esoteric branch of cataloging. The following comments may be helpful in resolving the issues which Ms. Intner raises.

When the Subcommittee was working (1970-78) and chapter 9 of AACR2 was written, microcomputers and floppy disks were not yet available on the market, although there were rumors and predictions suggesting the likelihood of a variety of such products. Then, as now, machine-readable describes an environment in which the recording media are often and quickly changed as new products are marketed and as organizations (especially computer centers) change policies. In the 1970s, transfers of machine-readable files from one recording medium to another (e.g., tape to disk) and changes in recording specifications (e.g., 800 to 1600 bpi on tape) were common and pervasive. Today, up- and down-loading between mainframe and microcomputers is becoming common, and industry predictions suggest that transfer between floppy disks and cassettes may also become commonplace. Thus, the storage of machine-readable files is highly volatile, making any attempt to tie the descriptive cataloging of such files to the physical attributes of recording media an exercise in futility.

At the same time, some of the recording media (floppy disks are a particularly conspicuous example) are circulated by libraries. Logical records are not easily controlled at the circulation desk; disks are more easily controlled. Thus, the interpretation of chapter 9 (proposed by the Task Force on the Application of AACR2 (chapter 9) to the Description of Microcomputer Software) in which

Editor’s note: Letters sent to the editor for publication in this column cannot be acknowledged, answered individually, or returned to the authors. Whenever space is available in an issue, selected letters will be published, with little or no editing, though abridgment may be required. Letters intended for publication should be typed double-spaced.
logical records would remain the primary descriptor and physical carrier would be an optional (and readily used) additional descriptor seems to be the best solution. First, it recognizes the impracticality of attempting to formulate a physical description for many machine-readable files. Second, it recognizes a unity (i.e., machine-readability—the capacity for transferring files between and among computers of all sizes) among such files. Third, it recognizes the practical requirements for circulating some machine-readable files in some formats.

Commercially produced microcomputer software (distributed on disks and in cartridges and cassettes) is copyrighted and, as a consequence, carries clear and relatively unambiguous statements of identity. Public domain software for these same microcomputers is less well identified, sometimes being as poorly identified (or unidentified) as many of the files for mainframe computers. The selection of the Chief Source of Information remains a problem area.

A minor point: why “Apple diskettes” instead of “disks?” We should no more make rules specifically for disks used in Apple microcomputers than we should for monographs published by Random House. Cataloging rules, if they are to result in a coherent whole catalog, should be developed from the general to the specific, not vice versa.

Readers will note that I have used “machine-readable file” rather than “machine-readable data file.” The latter was the term given to the subcommittee when it was formed. Because all files are, in fact, data files—for example, a program file is a specialized form of data file—the subcommittee chose not to alter the terminology. If the subcommittee were meeting today, I suspect that the members would now prefer “machine-readable file” as more generally acceptable and shorter. I know I do.

Response from: Sheila S. Intner, Assistant Professor, School of Library Service, Columbia University.—While the rationale behind chapter 9’s treatment of Area 5 is understandable, I cannot see where this one inconsistency has greater value either for the user or the cataloger than adhering to the simple logic of describing the physical form of the item in hand, as prescribed in all other chapters of AACR2. Sound and video recordings are easily transferred from disk to tape and vice versa, as well as frequently edited, spliced, or otherwise transformed, yet we do not describe them in terms of their contents. The cumbersome double-description of microcomputer software in terms of the number of files—difficult, if not impossible to determine in many cases—and the number of disks, with description of the physical medium coming second, is, at best, a compromise with problems of its own.

Regarding my use of diskettes instead of disks, this was merely an oversight for which I apologize.

Finally, I agree with Dean Auld that machine-readable file would be preferable to machine-readable DATA file. Unfortunately, CC:DA decided to return to MRDF for the microcomputer software guidelines since it was pointed out that it would be even worse to use a less specific term (MRF) for a more specific medium (microcomputer software) and have a more specific term (MRDF) for the more general materials covered in chapter 9. I, too, am sorry for that.
For the Record

Annual Report of the Decimal Classification
Editorial Policy Committee,
July 1, 1982–June 30, 1983

Margaret E. Cockshutt, Chairperson

The Decimal Classification Editorial Policy Committee (EPC) held its 83d and 84th meetings at the Library of Congress on November 4–5, 1982, and April 7–8, 1983. The following members were present at both meetings: Elizabeth J. Bishoff, Barbara Branson, Lois M. Chan, Margaret E. Cockshutt, Betty M. E. Croft, John A. Humphry, Russell Sweeney, and Arnold S. Wajenberg. Others attending both meetings were John P. Comaromi (editor of the *Dewey Decimal Classification*), Lucia J. Rather (director for Cataloging, Library of Congress), and Judith K. Greene (secretary). Joseph H. Howard attended the November meetings, and Peter J. Paulson attended in April. Daniele Danesi (member of the Italian Translation Group) and Pauline Atherton Cochran were present by invitation as observers in November; staff members of the Decimal Classification Division (DCD), Library of Congress, were present as observers at both meetings.

Members of the EPC were saddened by the death of Donald J. Lehnus, a valued member of the committee. Peter J. Paulson has been nominated to complete the remainder of Lehnus' term.

The EPC acted on the following matters:

1. It endorsed in principle a position paper prepared by the Forest Press Committee (FPC) after the October 1981 tripartite meeting of members of the EPC and FPC with the editor of the *Dewey Decimal Classification* (*DDC*) and his staff. The FPC had decided to authorize continuous revision of the *DDC* and the interim publication of some phoenix (completely revised) and other schedules, tables, and/or indexes as separates between editions of the *DDC*. This continuous revision and publication must not be to the detriment of the unity of knowledge as it is reflected in the *DDC*. It is possible, however, that the publication of separates between editions will result in a longer interval between editions. However, it will present problems in working out the intellectual and physical integration of the parts in the application of this unitary system, largely because of the ripple effect of the "add" device across all classes. It is hoped that *Decimal Classification Additions, Notes and Decisions* (*DC&*) will appear more regularly. Instead of its present free distribution only to purchasers of the unabridged edition, it may be distributed to and include material for purchasers of both the full and abridged editions. The purchase method of the *DDC* and its supplementary publications (*DC&* and interim separates) is not yet determined. There could be an annual subscription to spread out more
evenly the costs for purchasers; there could be a single price to cover the basic edition and all the supplementary publications to that edition; or there could be separate charges for each as at present, with either continued free distribution or a subscription rate for DC&.

2. The EPC recommended to the Forest Press Committee that comments regarding the Proposed Revision of 780 Music (the ‘‘780 Phoenix’’) should be submitted to the editor by December 1984, so that the EPC can make a firm decision and recommendation in 1985 about the inclusion of the 780 Phoenix as part of the official canon for edition 20. Opinions are to be sought actively from libraries and national bibliographic agencies that have adopted the Proposed Revision, from groups such as the Music Library Association, music collection users of OCLC, and from appropriate individuals. While there is at present a normal limit of two phoenix schedules for each edition, members of the EPC believed that 780 should be considered as a special case to be treated apart from other possible phoenixes under consideration for edition 20.

3. While the Decimal Classification Division has done extensive work on a phoenix revision of 370 Education, the EPC has not yet recommended its approval, because of the extensive ripple effect of such changes, particularly on Table 1 for the -07 Study and Teaching standard subdivision (s.s.). The structure of the proposed phoenix schedule is based on that of the Bliss’ Bibliographic Classification. While work on this 370 schedule remains to be done before it is finally considered, the EPC has recommended that the DCD distribute it to subject specialists for testing and the submission of comments by June 30, 1984, for subsequent consideration by the committee.

As a result of the work on 370 Education, the EPC and DCD have realized the need to rationalize the presentation of the standard subdivisions in Table 1 by substantial revision. They are now poorly organized and thus are difficult for many classifiers to understand and apply. It has been proposed that Teaching be relocated from the -07 s.s. to the 370 phoenix schedule. Other possible changes were discussed, such as a better developed persons facet at -08 s.s., with the abandonment of the -092 s.s. for Biography, and the incorporation or reorganization of phase relations (e.g., the addition of a standard subdivision for the comparison phase, and the relocation of the bias phase, now at the -024 s.s.). Many members of the EPC expressed their great concern at the enormous ripple effect such radical relocations in the long-standing Table 1 would have on shelf arrangements in libraries. However, members also recognized the need for browsability in searching around a given classification number in an online catalog and the probability that such browsing will be improved for library users by a more coherent and intelligible structure of the standard subdivisions. While there should be an early decision on the -07 s.s. for Teaching in relation to the 370 phoenix revision, there will be continued discussion of this very difficult problem of the rationalization of Table 1, and no hasty decision will be made about the latter.

4. In edition 19 the previous option of adding time to place was removed, and time can be added to place only where there are specific instructions. Thus, for example, for a work on Italian Renaissance painting, the concept of the time period must be omitted. As well, the difference between the application of mandatory instructions and the exercise of options causes problems in the local integration of original classification and notations derived from national bibliographic and other centralized agencies, particularly for subjects such as the fine arts. For large academic or spe-
cialized collections of certain subjects, the ability to specify both place and time is increasingly important for precise subject access and retrieval. The EPC accepted the principle of adding time to place, and the DCD was asked to prepare a paper on possible ways to determine the source of the time periods. Possible sources for the chronological subdivisions are the -090 standard subdivision, time periods from a relevant subject schedule (e.g., 709 History of Art or 759 History of Painting, since their chronological expansions are different), or 930-990 History. These possible sources differ in both the depth and the nature of their time divisions, so that the source is of considerable importance. This intellectual problem must be studied further before any recommendation can be made about how the principle can be carried out.

5. The EPC examined a proposal for the expansion of Data Processing, now 001.6, and its relocation to the currently vacant 004-006. The related topic of the Electronic Engineering of Computers is now 621.881953 and its subdivisions, and it seems desirable to relocate this to the seldom-used 621.39 in tandem with the development of 004-006. It was agreed that members of the DCD and EPC would be free to consult experts and colleagues unofficially now about the proposed Data Processing expansion, and that official submission to computer science experts and classifiers should be deferred until after the fall 1983 meeting.

6. The EPC recommended to the Forest Press Committee that expansions of Table 2 for areas -52 Japan, -624-629 Sudan, and -68 South Africa be approved. These expansions are in accordance with literary warrant for the countries concerned and have been requested by classifiers there to meet local needs. By the new policy of continuous revision and in accordance with the previously stated principle that the DDC is and must continue to be a classification system of international use, the EPC agreed that these expansions should be published in DCG 4:4, probably to be published late in 1983, with centralized application upon publication.

A very detailed draft expansion of 968 History of South Africa, which had been requested by local classifiers, was referred back to the DCD for further study, since the draft raised serious policy questions about differences in the depth of historical period development in various countries. At present only 973 History of the United States and 940.3-.5 World Wars 1 and 2 are extensively developed. Such extensive development of the history schedules for some countries, but not for all, would be anomalous. Members also believed that while the DDC must be responsive to local needs and requests, the requests per se cannot be the sole determining factors if they lead to gross imbalances in the schedules. Also, if the history schedules for each country were fully expanded, the history schedules would be enormous. The EPC has asked the division to prepare a policy statement on the implications of such major expansions developed at the request of the countries in question.

7. The EPC supported the principle of the removal of a monographic bias in the present Editorial Rules and thus in the schedules and tables. The removal of the bias should in time lead to easier application of the DDC to audiovisual materials, technical reports, microforms, and other nonbook materials.

At both the November and April meetings, the EPC had extensive discussion without action on other matters:

1. At the request of the committee, at the November meeting Pauline Cochran discussed the OCLC study of online subject access as it relates to the DDC. The study will examine the use of DDC numbers and terms in the
retrieval of bibliographic information from online public access catalogs and will include such matters as how to make the classified display clear for library users doing online browsing; how to link relocated or expanded notations from different editions; and how best to combine Dewey numbers and Library of Congress subject headings for more effective access in an online search.

2. As in previous years, there was extensive discussion of priorities for sections of the DDC to receive phoenix revision (i.e., sections to receive complete reworking with resulting extensive relocations of topics). While no firm decisions were made, candidates under serious consideration are 350–354 Public Administration, 370 Education, 560–590 Life Sciences, 780 Music (incorporating the 780 Proposed Revision), 700–770 Fine and Decorative Arts, and 140, 180–190 Philosophy. From these, the EPC will probably make a selection of several sections to be recommended for phoenix revision for edition 20. Other sections of the DDC will need various degrees of revision, which will result in less relocation. While no date has been set for edition 20, 1988 would be the earliest possible date, but the date will inevitably be affected by the implementation of the new policies of continuous revision and the publication of separates between editions.

3. Committee members discussed a proposed fourth edition of Introduction to the Dewey Decimal Classification for British Schools. In its previous editions, the Introduction has been quite different in its intellectual structure from the abridged edition. The present third edition of the Introduction is used in school and small public libraries in the United Kingdom, where school librarians do much original classification rather than relying on MARC data for derived classification, and where a new edition is needed. The fourth edition must conform to the basic Dewey structure. Since the fourth edition has not yet been developed, its usefulness in application for North American school librarians, in a more bibliographically centralized environment, cannot yet be determined.

4. The committee began to discuss a possible draft phoenix revision of 350–354 Public Administration, a schedule that is notoriously difficult to apply because of its complex structure and notation. Before the development of this revision a decision must first be made about the basic citation order, “place-function” or “function-place,” a problem that also occurs in 340 Law. Because a given solution may be workable for one local situation but not be suitable for others or for international application, the matter was deferred for further investigation and discussion.

5. The EPC considered various recent articles, reviews, letters, and reports pertaining to the DDC and the 780 Proposed Revision and discussed their implications for the committee’s future work. Whether they are from individuals or from organizations such as the Subject Analysis Committee of the American Library Association and the Dewey Decimal Committee of the (British) Library Association, all communications from the field are important for the work of the editor and the EPC, and all receive serious consideration.

In committee business, Lois M. Chan was re-elected as vice-chairperson to October 1984. The next EPC meeting was scheduled for October 27–28, 1983.
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