Toward a Theory of Librarianship and Information Science

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RESUMO

As funções da biblioteconomia vêm se alargando através dos tempos e refletem sempre as atividades, valores e objetivos das sociedades que as sustentam. Sua missão social não se modificou e os bibliotecários têm, contudo, uma compreensão imperfeita do livro como entidade intelectual. Devem eles conhecer o sistema cognitivo do indivíduo e a rede de comunicação da sociedade, a importância desse conhecimento para o indivíduo e a sociedade. A epistemologia social seria uma nova disciplina cujo foco estaria na produção, fluxo, integração e consumo de todas as formas de pensamento comunicado por toda a estrutura social. A biblioteconomia, fundamentalmente ciência do comportamento, é considerada pelos russos como um ramo das ciências sociais. Nossa cultura, com profundas raízes da Ciência, começa a perceber que esta constrói tão bem quanto destrói, e a década de 70 deverá ser mais dedicada às ciências sociais do que às ciências físicas. Quanto às atuais tendências, a recuperação mecanizada da informação foi um campo que despertou muito interesse mas foi bem pouco produtivo, pois a ênfase recaiu na máquina e não no aspecto humano, lógico, lingüístico etc.; u bibliografia, atividade central do bibliotecário — entendida aqui como toda atividade que pretende colocar usuário e livro juntos — não tem considerado a especialização de assunto: por outro lado, verifica-se no momento interesse pela cooperação. estimulada pela tecnologia da comunicação, teoria geral dos sistemas, automação e tecnologias correlatas, o que significa um afastamento das humanidades em direção às ciências físicas, biológicas e sociais. Pessoas de outras áreas têm procurado a biblioteconomia por fatores diversos mas esta "invasão" lhe trará benefícios; quanto à biblioteca pública, o bibliotecário está procurando fazer serviço social. Todas estas tendências implicara na alteração da educação profissional do bibliotecário. Sua primeira necessidade é ter boa formação geral ou liberal, com um mestrado numa área de assunto especializado, que só terá significado se tiver por base aquela educação geral. A pesquisa na biblioteconomia deverá contar com a participação de especialistas das diversas áreas porque o bibliotecário sozinho não tem formação capaz de fazê-lo desenvolver seus projetos. Se o objetivo da formação profissional é desenvolver a capacidade de propor alternativas, então todo o sistema educacional deve trabalhar em conjunto na criação de um eleitorado esclarecido capaz de uma escolha racional para que a democracia possa sobreviver.

Libraries are a social invention, devised originally, and for centuries remained, as repositories of the transcript of their culture. They were essentially archival in character created to protect the important documents that were necessary for the operation of state, the transactions of enterprise, and the transmission of religious belief and ritual. They were also centers of scholarship to which learned men could repair to consult the clay tables, the papyrus and vellum rolls, and eventually the codices that were needed for the advancement of teaching and inquiry. So far as the surviving record reveals, libraries were first the special responsibility of the state, but the priesthoods and

private benefactors soon shared in their development. This multiplicity of functions has characterized the library to the present. They were, then creatures of the aristocracy and the intellectual elite. It would not be practicable here to trace in any detail the organizational morphology of the library suffice it to say that the role of the library was broadened during the eighteenth century onward to include a variety of social functions: the support of business and industrial enterprise, of the educational system at all levels, the popular culture, and the growing movement for self-education. Horace Mann called the library the "crowning glory of our public schools," and a century later it was, to Alvin Johnson, "the people's university." Thus an instrumentality that was originally the exclusive concern, property, if you will, of the elite, "a nest to hatch scholars to use John Quincy Adams' phrase, became an agent of democracy, reaching its influence out even to the underpriviledged and socially disadvantaged, but always it has been a part of the fabric of society, reflecting the attitudes, values, and goals of the culture that supported it.

The Problem of the Individual

The sponsorship of the library, then, has throughout history and during varying periods of time, been assumed by the nobility, the priesthoods, private benefactors, voluntary associations, business and industrial enterprise, and a variety of governmenta agencies represented in the public sector. The library has increased dramatically in size and complexity, created a body of more or less standardized rules and procedures, evolved new patterns for its administrative control, and constantly widened its clientele, while not changing its basic mission, which is to maximize the social utility of graphic records for benefit of the individual and, through the individual, of society. The role of the librarian, then, is that of a mediator between man and book, where book is a generic term that includes all graphic records, and it is his special responsibility to operate in that complex association of record and human mind. Yet this relationship, which is at once intellectual, psychological, and physiological is still only imperfectly understood.

Traditionally librarians have made, either implicitly or explicitly, certain *ad hoc* assumptions about books and men, and the benefits that reading the one brings to the other, nor have they seriously entertained the possibility that, under certain circumstances, and for some individuals, there may be no benefit at all. What is a book that a man may know it, and a man that he may know a book?

There is certainly nothing very esoteric or mysterious about the book as a physical entity, it is familiar to all of us. But the book as an intermediary between communicator and receptor, as a medium that bears the message, a book that can be "known," is only very imperfectly understood. We are all aware that the book as a physical object does not change, but the impact of its intellectual content varies widely from reader to reader and from time to time even with the same reader. *King Lear* when read for the first time by a college student is not the same *King Lear* read by an adult in the years of intellectual maturity. "A book is a mirror," wrote the eighteenth century German physicist and addict of aphorisms, Georg Christoph Lichtenberg, "when a jackass looks into it he cannot expect to see St. Paul looking back."[1] We do know that for a large segment of the population, even in the highly literate Western World, the graphic record is a relatively unimportant source of knowledge. Even for those whose lives are centered about the book, graphic records form only a relatively small part of the total human experience. Harold Lasswell's "social planetarium," is predicated on the use of total sensory perception to achieve insight into what man will be like in the future. Yankee culture has always been ambivalent about the act of reading: on the one hand extolling reading as a "good" in and of itself, while on the other hand decrying "book larnin'." For all of our McLuhanesque babblings about the medium and the message, or the scholarly inquiries of Father Ong into the "presence of the word," the effect of the graphic record sitll eludes us; only your censor "knows."

But when we turn to the second part of our rhetorical question and begin to inquire into the nature of man in relation to the written word the complexities of the problem increase sharply, for a man is a far more intricate entity than the book. As yet the neurologist, physiologist, and those who have studied the communication process in all its ramifications have been unable to tell us what happens in that mysterious chain of events that takes place from printed page to eye to brain and the behavior that results therefrom. We are concerned here, first with the process of communication itself, and second, with the problem of knowledge. The end of communication is, of course, the achievement of like-mindedness, which is not to be mistaken for *agreement,* but rather *comprehension* of the content of the message. The problem relates to lhe nature of knowledge itself, of the cognitive process, and of language and its capabilities and limitations in communicating the message. The nature of consciousness and cognition must necessarily be left to the neuro-physiologists and

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1 The German gives *Affe* and *Apostel*, but we have substituted a jackass for the monkey and identified the apostle as St. Paul.

the psychologists, Knowledge may be regarded as that which results in adaptive behavior, but beyond this over-simplified definition, little is known about the nature of knowledge. Language has long been studied by the linguists without achieving any substancial agreement about its origins or the role played by non-verbal languages. Yet all of these areas of inquiry are fundamental to the work of the librarian. With so many relevant areas yet to be explored, it is small wonder that Waples and Berelson left unanswered the question of "what reading does to people."

Social Epistemology

Though the library serves mainly the individual, the ultimate objective is the betterment of society; therefore the librarian must not only know the cognitive system of the individual, but also the communication network of society. The communication process is a duality of system and message, of that which is transmitted as well as the manner of its transmission. The librarian must view his hole in the communication network as being more than a link in a chain, or even a switching-center in a network. He must also concern himself with the knowledge he communicates, and the importance of that knowledge to both the individual and to society. Yet the study of the nature of knowledge, and the relationship between that structure as it has developed in contemporary Western civilization and the librarian's tools and resources for intellectual access to it, have received scant attention and no serious exploration.

We are, therefore, here concerned with the need for a new epistemological discipline, a body of knowledge about knowledge itself. The manner in which knowledge has developed and been augmented has long been a subject for study, but the ways in which knowledge is coordinated, integrated, and put to work is, as yet, an almost unrecognized field for investigation. Until recently epistemology was a branch of speculative philosophy, concerned with *how* we know. The evolution of the science of psychology, however, left epistemology relatively poor in intellectual substance. Today, "scientific epistemology," to use Eddington's term, has transformed the earlier philosophical and speculative approach into a scientific and largely theoretical study that is concerned with what man cannot know, i. e. the limits, constraints, on human knowing, hut almost always these limits were seen against the background of the intellectual processes of the individual. We have not yet developed an ordered and comprehensive body of knowledge about intellectual differentiation and the integration of knowledge within a complex social organization.

The new discipline that is here envisaged we have called, for want of a better term, social episte-

mology, or social cognition. Which should provide a framework for the investigation of the entire complex problem of the nature of the intellectual process in society — a study of the ways in which society as a whole achieves a perceptive and understanding relationship to its environment. It should lift the study of the intellectual life from that of the scrutiny of the individual to an inquiry into the means by which a society, nation, or culture achieves an understanding of the totality of stimuli that act upon it. The focus of this new discipline should be upon the production, flow, integration, and consumption of all forms of communicated thought throughout the entire social fabric.

If the librarian's bibliographic and information systems are to be structured to conform as closely as possible to man's uses of recorded knowledge, the theoretical foundations of his professional activity must take into account:

The problem of cognition — how man knows.

The problem of social cognition — how society knows, and the nature of the socio-psychological system by means of which personal knowledge becomes social knowledge, i. e. the knowledge possessed by a society.

The history and philosophy of knowledge as they have evolved through time and in a variety of cultures.

The existing bibliographic mechanisms and systems and the extent to which they are in congruence with the realities of the communication process, the findings of epistemological inquiry, and the substantive content of the body of knowledge itself.

Social Epistemology, Information Science and the Library

The socio-epistemological philosophy of librarianship proposed here does not exclude the important contribution that the physical sciences can make to the intellectual arsenal of the librarian. Because a culture, and the subcultures of which it is composed, is a complex social structure brought into being by men who are themselves composites of psychological, biological, and physical phenomena, the physical as well as the social sciences are relevant to the whole problem of social epistemology. If librarianship is to be concerned — as it must be — with the epistemological problem in society, it must also be interdisciplinary. It must bring to its practitioners the methods of any number of other sciences. The term "library science" is, then, not an obfuscation invented to conceal the flimsy foundations of the scholarship of the field. The real question that librarians must ask

themselves is not "Is librarianship a science?" but rather "What kind of science does or should, librarianship represent?" Few will deny, we believe, that the human use of the graphic records of society is a scientifically based study to which all branches of human knowledge can contribute. Because librarianship is primarily concerned with the utilization of the social transcript by human beings both individually and collectively, it is fundamentally a behavioristic science, but because the methods and findings of the physical and biological sciences are being increasingly applied to the study of human behavior, librarianship must be "scientific" even in the classical use of the term. A librarian, therefore, must be a scientist, not because he may be doling out scientific literature to scientists and will perforce need to communicate intelligibly with his patrons, but because science, in its broadest sense, is the foundation of the librarian's scholarship.

The interdisciplinary focus of systems analysis and operations research has not only direct relevance to the librarian's procedures and technology, but also a symbolic meaning for the epistemological problem; for, as systems analysis directs scrutiny to the interrelations among the component parts of an operating whole, so the mark of social epistemology is that it places its emphasis upon the whole man and the whole society, and all of their ways of thinking, knowing, feeling, acting, and communicating. Science itself is a major social enterprise, carried on by individuals to be sure, but in the present day increasingly by individuals working in concert within the context or environment of educational, research, industrial, and governmental organizations and institutions.

But librarians do not live by the bread of mathematics alone, nor by the succotash of systems analysis; to say that system is the essence of the science of librarianship states a very narrow and restricted view. The study of social epistemology, which is in reality the study of social cognition, is the proper foundation of a science of librarianship. As a study in its own right it must synthesize and draw upon the work of many disciplines, but it must always focus upon these processes by which society achieves a state of knowing and communicates its knowledge throughout its constituent parts. The librarian's responsibility is the efficient and effective management of the transcript, the graphic record of all that society knows and has recorded about itself and its world. The domain of the library includes that which the social organism has learned, its values as well as its imagery as well as its reality; it is at once historical, contemporary, and anticipatory. Thus the librarian can carry out his social responsibilities with maximum effectiveness only when he understands the cognitive processes of society and can translate

that understanding into service; it is at once derivative, analytic, and synthetic.

Laurence Heilprin has admirably summarized the importance of the epistemological approach to the problems of the librarian, in reviewing an earlier work of the present writer on this subject:

"If the librarian ... is actually an important service link in optimizing the use of graphic recorded information, then success depends on how much of this process he understands. He must see it all in profile — how we manufacture knowledge, starting with direct sense impressions and including (in science, at least) careful comparison of communicated abstractions ... He also will tend to *be* more of a scientist, and in particular will have to understand the way in which what once has been accepted as objective tends with the advance of knowledge to slip back into its prior state of subjectivity. If epistemology encompasses this entire field, including all of communication science, clearly a large expansion is needed in the background of the information scientist. He must at least be aware of the entire process of knowledge, and of the principal constraints on and weak points in its communication. Educators who have to construct courses to guide and instruct the information scientist cannot be less broad than those they are trying to educate. To be a competent teacher in this field will indeed be a challenge. We may conclude that perhaps the main reason why information science has progressed such a short distance as a science is that we do not understand the connections we are groping for here. Lack of knowledge of epistemoly is possibly the greatest barrier to improving library and information science." [2]

Heilprin has, to all intents and purposes, made communication science virtually synonymous with information science, and it is true that the physical scientists, especially the mathematicians and engineers, have captured the latter and made it their own almost to the exclusion of the librarians who, originally entered the profession largely through the humanities — Heilprin was himself originally a physicist. A reasonable consensus has been reached that information science is an area of research that explores communication phenomena and the properties of communication systems. It draws its substance and techniques from a variety of overlapping disciplines to achieve an understanding of the properties, behavior, and flow of information. It includes systems analysis, environmental aspects of information and communication, information media and language analysis, the

2 MONTGOMERY, Edward B ed, The *Foundations of Access to Knowledge. A Symposium.* Syracuse, New York, Syracuse University Press, 1968. p. 26-7.

organization of information, man-systems relation-
ships, and other disciplines, either established or
in the process of development, that might promise
to throw light on a particular area of inquiry.
By "communication," the information scientist means
any kind of knowledge through any medium or
environment. But merely to state the definition
reveals how very far we are from understanding
the nature and behavior of information and the
social manifestations of it.

Robert Fairthorne sees in information science "a
dangerous tendency to bring in any and every
science or technique or phenomenon under the in-
formation science heading." He saw in this
emerging discipline no "common principles," and
one does not create common principles by giving
different things the same name. We have no quarrel
with the scientist and the engineer, both can make
substantial contributions to what we have called
social epistemology, but to pour the complex study
of social cognition into only the scientific mould,
denies the obvious fact that man is a social being.
He derives information from an infinite array of
sources from which he shapes and reshapes his
behavior. Nor should the humanities be overlooked
for they, too, have an important role in the cogni-
tive process. It is entirely possible that a scientist
can derive insight into a problem he is inves-
tigating as much from listening to a symphony as
to reading a scientific paper or report. Playing
in an amateur quartel may be much more than
relaxation for the chemist; it may be an integral
part of the creative process. A dream of snakes,
with their tails in their mouths, rolling like hoops
gave Kekulé the inspiration for the benzine ring.
The study of the cognitive process in society can
illuminate even the most remote areas of intellec-
tual activity regardless of the methods and tech-
niques that it may borrow from other disciplines.
Already the Russians have subordinated informa-
tion science to the social sciences. A special
committee reporting to the Council for Mutual
Economic Assistance has written, "Information
Science is a discipline belonging to Social Science
which studies the structure and general charac-
teristics of scientific information and also general
laws governing all scientific communication proc-
esses." But though the Russians have made infor-
mation science a branch of the social sciences,
the focus is still upon *scientific* communication.
There would certainly seem to be no valid reason
why other substantive arcas should not be explored.
The information scientist does not, or should not,
restrict himself to scientific information.

Our contemporary culture is, of course, deeply
rooted in Science, with a capital S, and for better
or worse it shapes the daily lives of all of us.
But recently there has been a growing disillusion
with what the scientists and engineers are doing
to society, and we are descovering that Science will
not solve all the ills by which we are beset, as we
so naively once thought it would. Science can
destroy as well as create, and today it is doing both
remarkably well. It now seems quite likely that
the problems of the "seventies" are much more apt
to be in the social, rather than the physical,
sciences. Indeed many of the tasks that confront
us will be the correction of social ills that are the
heritage of Science. Policy at the national, state,
and local levels and in all forms of organization,
whether in the public or private sectors, derives
from the point at which cognition (knowledge of
the facts) and conceptualization (judgment)
meet and interact. Or, to express the idea with a
different analogy, policy is the resultant of a
parallelogram of two orces, cognition, "telling it
like it is," and conceptualization, the interpretation
of those facts in the light of experience derived
from the immediate environment and an under-
standing of the past.

The Librarian and the Machine

Perhaps no aspect of librarianship has aroused so
much interest, not to say curiosity in the public
mind as mechanized information retrieval, and none
has been so unproductive. As early as the late
1930's, Frederick Kepple, then executive director
of the Carnegie Corporation of New York, foresaw
in the Hollerith tabulating machines the possibility
of searching literature when the text was coded in
a way appropriate to the machine's capabilities.
Hope sprung anew, after the Second World War,
with the development of large-scale general purpose
computers, or "giant brains." One should not say
that all attempts to automate indexing, abstracting,
and literature searching have been a failure,
however, for work on the problem is still going
forward in many places, and it seems inconceivable
that an innovation so inherently powerful as the
computer would leave the problem of the library
untouched. Nevertheless, the reasons for incon-
spicuous success up to the present time are nu-
merous. First, the costs of development and use
of such examples as we do have are so great as
to be economically impracticable. Second, experi-
mentation began with the engineering aspects of
the problem; that is, machines were built that were
monuments to the engineers' art, but no one knew
quite what to do with them when they were built.
Technology preceded theory. "Software," had
been neglected in deference to "hardware," and few
understood the linguistic, logical, and organiza-
tional problems involved. The result has been that
most of the machines have been, not *information*
retrieval mechanisms, but *document* retrieval de-
vices — electronic stack-boys rather than electronic
reference librarians. These machines have emu-
lated the physical behavior of the librarian rather
than his intellectual processes. The engineers saw

the motions of the librarian as he "fetched and carried," as the early explorers of flight sought to copy the birds. There is as yet no theory of "aerodynamics" in librarianship.

But to say that the computer has not yet fulfilled its promise as an acceptable instrument for information retrieval does not imply that its coming has been without benefit to the library world. For many library housekeeping operations — fiscal control, circulation records, the preparation of catalogues — the computer has been eminently successful. Moreover, on-line shared-time systems used in conjunction with closed-circuit television have greatly expedited the growth of library networks, such as that of the Ohio College Library Center in Columbus, to the substantial advantage of the participating libraries. Increasingly libraries are making use of machine-readable tapes produced by other libraries, such as the MARC project at the Library of Congress and comparable services performed by the National Library of Medicine. In library-related operations, the production of indexes and concordances, the computer has lifted a heavy manual burden of scholarly spade-work. A very limited success has also been achieved in automated abstracting though its efficiency in this area is yet to be proved. All of these adaptations of the computer should become increasingly beneficial as experience is gained. That cataloging and, eventually, reference services in the library will be drastically changed in the not-far-distant future by computer technology would seem to be a logical conclusion.

Yet, as Archibald MacLeish has pointed out, miraculous as these electronic contraptions are, they have become available, "precisely at a time when the great human need is not for additional information or more rapid information or more universally available information but for the comprehension of the enormous quantities of existing information the scientific and other triumphs of the last several generations have already dumped into our minds. It is not additional 'messages' we need, and least of all additional 'messages' which merely tell us that the medium which communicates the message has changed the world. We *know* the world has changed ... What we do not know is how, precisely, it is changing and in what direction and with what consequences to ourselves."[3] Perhaps the greatest contribution the computer has made to librarianship to the present time is that subtle and intangible way in which it has compelled librarians for the first time to think analytically and critically about what they are doing and whether they should be doing it. The computer has given librarians a whole new frame of reference

3 MACLEISH, ARCHIBALD *Champion of a Cause.* Chicago, American Library Association, 1971. p. 246.

for the methods and techniques which, over the years, they have come unquestioningly to accept as axiomatic. There has been considerable debate in the computer community over whether or not computers can be made which will "think." The debate is a futile one and most of it rests on pure semantic notions. However, there would seem to be a certain reciprocity of relationship between what the applied mathematicians and engineers are doing and the investigations of the cognitive process by the neuro-physiologists and psychologists. As man learns more about the nature of thought he will doubtless be able to fabricate mechanisms that simulate thought, whether they actually "think" or not. And as we learn more about computers we should be able to derive increasingly perceptive insights into the operation of the brain and the central nervous system. To know more than we do now about how man learns, both man as an individual and mankind collectively, is an exciting prospect for both teacher and librarian, but it raises some serious, not to say frightening, problems respecting the possibility of eventual thought control that will make our present concern over censorship pale into insignificance; here would be the ultimate in brainwashing. But man is not likely to impose upon himself a moritorium on inquiry, certainly he has not done so in the past. If we eventually come to understand the process of personal and social cognition we inust develop an ethic and the necessary controls that will keep it out of the hands of the unscrupulous. We cannot answer Thomas Huxley's question, "What are you going to do with all these new things?" by concerning ourselves with only man's place in nature, as philosophy and science have done in the past, while ignoring man's place in the new environment created by "all these new things." As Elting Morison has pointed out, the rate of change, all create in the environment conditions that are beyond the human powers of accommodation. The result is a sense of alienation that is intensified by the fact that though the system may have an intellectual and empirical integrity it has no apparent purpose beyond effective operation. Libraries, even highly mechanized and efficiently operated libraries, should not exist to give librarians something to do, though we confess to having seen some libraries that would seem to have no other *raison d'etre.* More than ever our society appears to need what libraries have to offer, but what the nature of that need is, and how it should be met is still unclear,

The Flight from Bibliography

"Bibliography bears its investigating torch into all parts of knowledge," wrote Gustave Mouravit, in praising the Brunet system of bibliographic classi-

fication when it was at the height of its popularity, more than a century ago. Yet almost at the very time that Mouravit was declaring the importance of bibliography to the world of scholarship, and the bibliographic problem as being central to the librarian's responsibilitics, librarians, inspired by a vision of the library as the great agency of universal education, were turning their backs on their bibliographic heritage. There was nothing inherently wrong, of course, in the librarians broadening their services and reaching out to "the common man," who then seemed, and still is, the hope of democracy. But when the librarians began to proselyte they were led to forget that librarianship is fundamentally a bibliographic enterprise regardless of the sophistication of the clientele. We are here, of course, using "bibliography" in its broadest sense, not merely to be confined to the compiling of bibliographies. By bibliographic activity we would mean to include all those operations, funetions, and insights that are required to bring book and user together, under appropriate headings. The librarians failed to perceive that one cannot serve the library needs of the "common man," by being a common librarian, any more than a good children's librarian can be a child. To bring books and people intellectually together requires a certain body of knowledge and skills, a certain expertise, that has not been appreciated, and for which our present system of education for librarianship has not prepared its students.

The bibliographic enterprise is composed of three constituent elements: *acquisition,* which means knowing what materials to acquire and how to acquire them; *organization,* the arrangement and analysis of the materials so that their intellectual content will be appropriately available; and *service,* which is assistance to the reader. Traditionally these functions have been kept separate on the organization chart of most libraries, each department with its own staff. This practice we believe to have been a mistake, for these elements are not isolates but parts of an integrated whole. Conventionally we have thought in terms of acquisition librarians, catalogers, and reference librarians, when we should have been thinking of subject specialists who have the competence to unite in themselves the three basic capabilities represented in their subject, or substantive branch of knowledge. A librarian is not just a librarian, he is a librarian of something, a librarian in a specific subject field, and it is, therefore, the librarians substantive knowledge, rather than the tricks of the librarian's trade, that make him the bibliographer he should be. "What is a book to a librarian?" MacLeish asked the audience assembled for the dedication of the Scott Library at York University in Toronto. "Is it merely the unit of collection, a more or less fungible (as the lawyers put it) object made of paper, print, and protective covering that fulfills its bibliographical destiny by being classified as to subject and catalogued by author and title and properly shelved?"' Unfortunately there are far too many librarians who see bibliography as being no more than such mechanical routines. Just as we would have the computerized information retrieval system be something more than an electronic stack boy, the librarian should be more than a check-girl in a bibliothecal package room. The librarian to fulfill his destiny must know the subject field over which he presides, the literature of that field, and be able to communicate to those who seek his services as one of their peers. To modify the Indian Proverb, he must have walked a mile in the patron's moccasins. Yet few librarians have made such a journey.

Libraries have not taken into account, as they should, subject specialization in the organization of their staffs. To be sure, some of the the larger research libraries have used subject bibliographers, where it was forced upon them by linguistic necessity, thus bibliographers in the Oriental, Middle-Eastern, and Slavic languages are certainly not unknown in large academic libraries where graduate offerings in those areas have made them a necessity. There have also been specialized library facilities to serve particular groups within the university community of which the industrial and labor relations centers at Chicago, Cornell, Illinois, and elsewhere are good examples. But often the personnel for these specialties are drawn, not from the ranks of the librarians, who receive no adequate preparation for such duties in their professional education, but from the subject field itself. Yet, despite the success of these little principalities within the library empire, librarians have not imaginatively redrawn their general organization charts in terms of subject and bibliographic funcitons so that acquisition, organization, and service could be subordinate to the subject departmental structure. What would seem to be most needed is a modification of the area study programs in the university curriculum adapted to the departmental structure of the library. Though librarians still pay lip service to bibliography as being central to their profession, it is not reflected either in their professional preparation or in practice.

The Pattern of the Future and its Meaning for the Librarians Professional Education

What, then, are the most conspicuous strands that comprise the warp and woof of the library fabric

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4   MACLEISH. Archibald. "The Premise of Meaning."

and which are most likely to set the pattern for the future? In the opinion of the present writer the most important would seem to be the growth of library networks, systems in which the total bibliographic resources of an area or region can be brought to bear at any one point in the whole. For decades librarians have talked about the values of cooperation, and now, at long last, they would appear to be making some progress toward its realization. Libraries can no longer afford the luxury of unrestrained growth, if indeed they ever could, the burden of acquisition must be shared. At a time when the technology of communication is making such impressive advances as it is today, to continue to assemble libraries and information centers in isolation from the other segments of the library community is both economically wasteful and professionally exhausting.

Closely allied to the emergence of networks is the growing interest among librarians in general systems theory. Admittedly systems concepts have been drawn from a diversity of disciplines, each with its own jargon and emphasis, and it is the nature of organized systems that they present themselves differently to different observers, yet these theories do provide new and fruitful modes of unification, binding together apparently unrelated areas of discourse of spheres of human activity and thought. To librarianship the value of general systems theory would seem to be that it makes possible for the first time the ability to study and to provide the tools for that study, the library and its operations from an hollistic frame of reference, rather than to see it, as has so often been true in the past, fragmented into a cluster of specific operations often without relation to each other and lacking the realization that what affects one part may have serious repercussions in others. The value of general systems theory to the librarian is yet to be tested, but certainly it promises a profound revolution in science and other areas of thought, and it now appears that it can give to the librarian insights and comprehension that have long been lacking.

Automation and related technologies, together with the rise of information science, despite disappointments and as yet unfulfilled promises are, in a limited way, already making some significant contributions to the library's operations, especially those repetitive tasks that are mechanical rather than intellectual. [5] Other and far-reaching developments may be expected to follow during the coming generation, but perhaps most important of all they signify a shift from the humanities, which for so many centuries dominated librarianship to the physical, biological, and social sciences. The humanities still hold an important place in the librarian's arsenal of capabilities, but we are beginning to get a much more balanced intellectual

attack upon library problems than has previously existed.

Stimulated perhaps by growing unemployment in other academic and professional areas of intellectual endeavor, increasingly recruits to librarianship are bringing with them advanced study in the academic disciplines, and from this "invasion" librarianship should profit. This situation recapitulates in large measure that of the depression of the 1930s, when librarianship was greatly strengthened by the addition to its ranks of young scholars, well trained in a substantive field, turned to librarianship to escape the economic stringency that beset their original career choices. But librarianship is already feeling the pinch of depression, too, so how long the present situation will continue is problematical. For the moment, at least, the library world should be the beneficiary of the "ill wind" of others. Finally, in this brief catalogue of current trends in librarianship there is the growing awareness that the library, especially the public library, does have an obligation to be relevant to today's social needs, to use the jargon of the young activists, and to extend its services to the disadvantaged, the deprived, and the rejected minorities. We are concerned when the librarian tries to play social worker, but certainly he, or she, should cooperate with the social worker in bringing the power of the recorded word to bear upon the serious social problems by which our communities are beset. Actually, though the clientele may be markedly different from the past, the nature of the librarian's task may not be so drastically changed. As John Gardner has said in *The Recovery of Confidence:*

Young idealists who profess utter emancipation from the past pour out torrents of words about the values they wish to live by, and to, they turn out to be, for the most part, updated versions of very old values. True, the values have been ignored, traduced, lied about, manipulated, and falsified. But that only says that they need rescuing.[6]

To change an agency created by and for the scholarship of an elite to one that serves the informa-

5 Nevertheless, despite the promise of the computer, even for repetitive tasks, it is only fair to report that in one situation at least replacement of the computer by human beings has proved profitable. The *Wall Street Journal* for February 15, 1972 announced that at the California Commission for Teacher Preparation and Licensing elimination of the computer in favor of human skills enabled the agency to reduce its staff from 240 to 106 and pare the time for processing credentials from 95 days to 10. As one agency official expressed it, "The computer was a good worker, but it just couldn't compete with people."

6 Quoted in the *Christian Science Monitor,* June 29, 1972.

tional needs of the masses will present some problems, but the transformation is not impossible, and in part the survival of democracy may depend on just such a change.

Even this brief listing of the more conspicuous changes that are now taking place in librarianship should be sufficient to emphasize the need for complete renovation of the librarian's professional education. Despite the progress that has been made in the training of the librarian since the end of the second World War, and there have been impressive gains, the overwhelming reaction of the present writer, after a quarter of a century of library school teaching and administration is a great lack of enthusiasm for it. This is probably a terrible confession for us to make, especially after our having just published a five-hundred page book on the subject, but it is not easy to react otherwise and retain one's intellectual integrity. It is difficult to escape the conclusion that library education represents what is, perhaps, least important in the librarian's professional equipment., and that what makes a good librarian good is his mastery and understanding of the substantive knowledge represented by the materials over which he presides. The library should be the "crowning glory" of our educational system, and not, as the sixth president of the United States said, merely "a nest in which to hatch scholars." The needs of the scholar are certainly not to be minimized, but the library should also be a place to which the good citizen can turn to make himself a better, more enlightened, citizen. Therefore the first need of the librarian is a good general or liberal, education. For if there is any profession the practitioners of which should "see life steady and see it whole" is certainly librarianship. The conclusion would seem to be so obvious its to make argument unnecessary, yet one of the great problems that confronts the libary school today is the numbers of students who come to its doors who lack just such secondary and undergraduate preparation.

Beyond general education there is subject specialization in a respectable academic discipline which should be pursued by the student to at least the level or the Master's degree, and preferably beyond. The library recruit should bring to the library school a thorough education in the literature of his chosen field, the structure of that literature, its "lan mark" contributions, its schools of thought, the problems by which it is beset and the advances toward their solution. Thus equipped he should be able to communicate with and even anticipate the needs of the scholar while not damaging his capacity to present to the intelligent layman, or the layman with little formal education, the relevance of that field to the needs of the citizen. Thus equipped the student should be ready to pursue his professional training which should emphasize

the bibliographic aspects of his specialty, administrativo and management theory, and communication theory and information science as they all relate to library functions and practices. There will be those, of course, who will argue that such a program will be so expensive that it will place the librarian economically beyond the reach of the small to medium-sized communities. But a doctor in a small town does not need to know less medicine than his colleagues in the city. Moreover, the growth of library systems should bring these human resources within the budgetary limits of the smaller urban centers. The question is not, can we afford such librarians as are here envisaged, but can we afford not to have them? The farmer is as important a part of the democratic system as the city dweller, and he has as much of a right to the best library resources as his brother on Fifth Avenue. Realistically, of course, the opportunities possessed by the two can never be completely equal, but certainly the differential does not need to be as great as it is today. In the language of the market-place, librarianship has not "sold itself" to the community in the way it should, but on the other hand, let us face it, it has not had too much to sell.

In the past the education of the librarian has, by implication at least, been predicated on the possibility of attaining an encyclopedic goal of the mastery of all knowledge. But the objective was never quite possible of realization, and attempts to achieve it end in either pedantry or dilettantism. A truly educated man is not one who knows "everything," but one who is constantly learning. In urging that the librarian prepare himself to qualify as a subject specialist, we are not suggesting that he be what is often described as a "narrow specialist." He who is narrowly expert is often only broadly ignorant, and his broad ignorance will make him an inadequate specialist. What gives depth and meaning to specialized knowledge is the general education upon which it is based and from which it is intelectually derived.

A word, and for present purposes no more than that, should be added about research in librarianship, the state of which distresses us even more than that of library education itself; so much time and effort is wasted on matters that are trivial. The most important single fact about research in librarianship is that much of it cannot be done by librarians. The librarian's scholarship is derivative, it must wait upon the results of inquiry in such fields as linguistics, anthropology, the social and physical sciences generally, on physiology, medicine, systems analysis, communication theory, the science, if there be one, of administration and management, education, learning theory, and a host of other disciplines. Many of these branches of knowledge have given librarians tools with which

they can cultivate their own fields of inquiry, but the librarians must either learn to use these unfamiliar tools or call upon the assistance of those skilled in their use. But librarians must stop toying with these tools in the pretense that they are pushing back the frontiers of knowledge. A continuing dialogue between the librarians and the appropriate scholars in relevant fields there must be, but it must not stop with the exchange of words. The librarian who desires to engage in honest research must become so knowledgeable about the fields related to his inquiries that he can select from them and apply them to his own research in valid and fruitful ways. Form, method, and technique, much less imitation, are not the essence of inquiry. One does not produce valid research by playing the sedulous ape to the Methodists in their white aprons in the hope that form will yield substance.

The Burden of the Library

There are, for the human mind, but two sources, broadly speaking, of knowledge, wisdom, and truth — experience and record, typified in our culture by the laboratory and the library. The purist will argue, of course, and quite rightly that both are experience only one is direct and the other vicarious, but it will not serve our purposes here to debate semantics. The point is that the library as the main repository for record is a major source of vicarious experience. Yet few agencies in our society, including the educational system, have suffered such neglect and are so confused about what they are supposed to do. The founding fathers of the Republic were right in insisting that the success of a democracy depends upon an enlightened electorate, and that man must learn to act so that it can truthfully be said that "the voice of the people is the voice of God." Yet today the problems of our nation have become so complex that rational action, even for the most enlightened, becomes almost an impossibility,
Underlyng all our problems, in this writer's view, is that of uncontrolled population growth; to it almost all our other ills can be traced. Even with the remedies now available it seems entirely possible that the will to use them may be coming too late, especially in those parts of the world in which remedial measures are most needed. The Rev. Thomas Malthus may be proved right after all, and that population even in Western Europe and on the American continent, does increase more rapidly than the means of subsistence. But probably uppermost in the minds of the majority is the folly of the brutal and absurd war in Vietnam which has not only shamefully wasted our physical and human resources, both ours and theirs, but also, even worse, has eroded our national character

to a point unequalled since the moral decay of the Athenians that followed the Peloponnesian war, and from which Athens never recovered. Hard upon the heels of these catastrophies come such concerns as the destruction of the environment; the rising tide of crime; the increase in drug traffic and addiction; the problem of race relations in all its subtlety and ugliness; inflation and, for our own country particularly, the international monetary situation. But there are many other social problems that are much less conspicuous than those just mentioned: the increasing mobility of our population which destroys man's roots in the soil and makes all life transitory and a series of episodes; the loosening of ties that once bound so securely family and friends; an economy so heavily dependent on the automobile that all else must be sacrificed to it; the problem of readjustment to automation, the profitable use of leisure time resulting therefrom and the need for retraining personnel for service, rather than productive occupations that are directed toward the making of "things;" the proper use of automation, itself, i. e. where and where not it is appropriate, in libraries particularly premature enthusiasm for automation has frequently drained away resources that might better have been invested in the acquisition of materials or the improvement of the bibliographic competence of the staff; distrust of all governmental institutions together with the apathetic acceptance of corruption as a part of "politics;" the wresting of power from Congress by the Executive which seems to suggest a potential for dictatorship that is greater than this writer has ever seen; the growth of censorship and the restrictions being imposed by government on the news media; the artificial stimulation of "wants" beyond the economic ability of many to fulfill that is the curse that uncontrolled salesmanship has placed upon us; and the decay of standards of moral conduct which is by no means confined to the young. The list is impressive and bewildering, small wonder that youth is in revolt.
We would not, of course, maintain that the library has the key to unlock the solutions to all of these problems, but certainly its resources when properly used can provide badly needed insights into the character of the problems, the solutions that have been attempted in the past, and possible alternative courses of action. But a book that is never read, no matter how potentially valuable ,is worthless. The library cannot force its services upon an unwilling or unprepared body politick. It must depend upon the school to create an intellectual climate in which youth and adult will voluntarily seek the benefits that the library can provide, and the schools are not doing so. If the end of education is to develop the capacity to propound alternatives, then the educational system in its

entirity, meaning the school, the library, and the agencies of adult education must work together in the creation of an enlightened electorate capable of rational choice if democracy is to survive. Yet not in the memory of this writer has the public been so sheep-like, and democracy so trembled on the brink of disaster. We would not "cry havoc" or surrender to despair, but we have never forgotten from our undergraduate years, a sentence with which that distinguished sociologist, E.A. Ross, concluded one of the chapters of his introductor" text in sociology: "Humanity," he wrote, "has a perilous knife-edge to travel, and humanity may fail." These words were written, mark you, just after we had concluded a war of which it was said that "we stood at Armageddon and we battled for the Lord," and in so doing the world had been made "safe for democracy." Yet little more than a decade later an unknown Austrian house-painter would "let slip the dogs of war," and after that Korea and Vietnam and terror of the Bomb — all from a country that boasts of the finest public library system in the world.

ABSTRACT

Functions of librarianship broadened through the ages reflecting the attitudes, values and goals of the societies that supported it. Its social mission did not change, and librarians, however, have an imperfect understanding of the book as an intellectual entity. They must know the cognitive system of the individual and the communication network of society, as well as the importance of that knowledge to both the individual and to society, Social epistemology would be a new discipline with a focus upon the production, flow, integration and consuption of all forms of communicated thought throughout the entire social fabric. Librarianship, fundamentally a behavioristic science, is considered by the Russians as a branch of the social sciences. Our culture, deeply rooted in Science, is discovering that the latter can destroy as well as create, and the problems of the "seventies" are much apt to be in the social, rather than the pbysical sciences. As to the present trends, perhaps no aspect of librarianship has aroused so much interest as mechanized information retrieval, and none has been so unproductivc, since emphasis was given to machines and not to human, logical, linguistic, etc., aspects; bibliography, the librarian's central activity — meaning all activities that are required to bring book and user together — has not taken subject specialization into account; on the other hand, there is nowadays an interest in cooperation stimulated by the technology of communication, general systems theory, automation and related technologies, which signifies a shift from the humanities to the physical, biological, and social sciences. For several reasons people from other areas are recruiting to librarianship, but from this "invasion" librarianship should profit; as for the public library, librariam are trying to play social worker. All these trends imply in changes in the librarian's professional education. The first need of the librarian is a good, general, or liberal, education, with a level of Master's degree in a subject specialization, which only will have a meaning if based upon that general education. Research in librarianship must receive the participation of specialists from other arcas because librarians do not have the correct education which could make them capable of carrying out research projects. If the end of education is to develop the capacity to propound alternatives, then educational system in its entirety must work together in the creation of an enlightened electorate capable of rational choice it democracy is to survive.
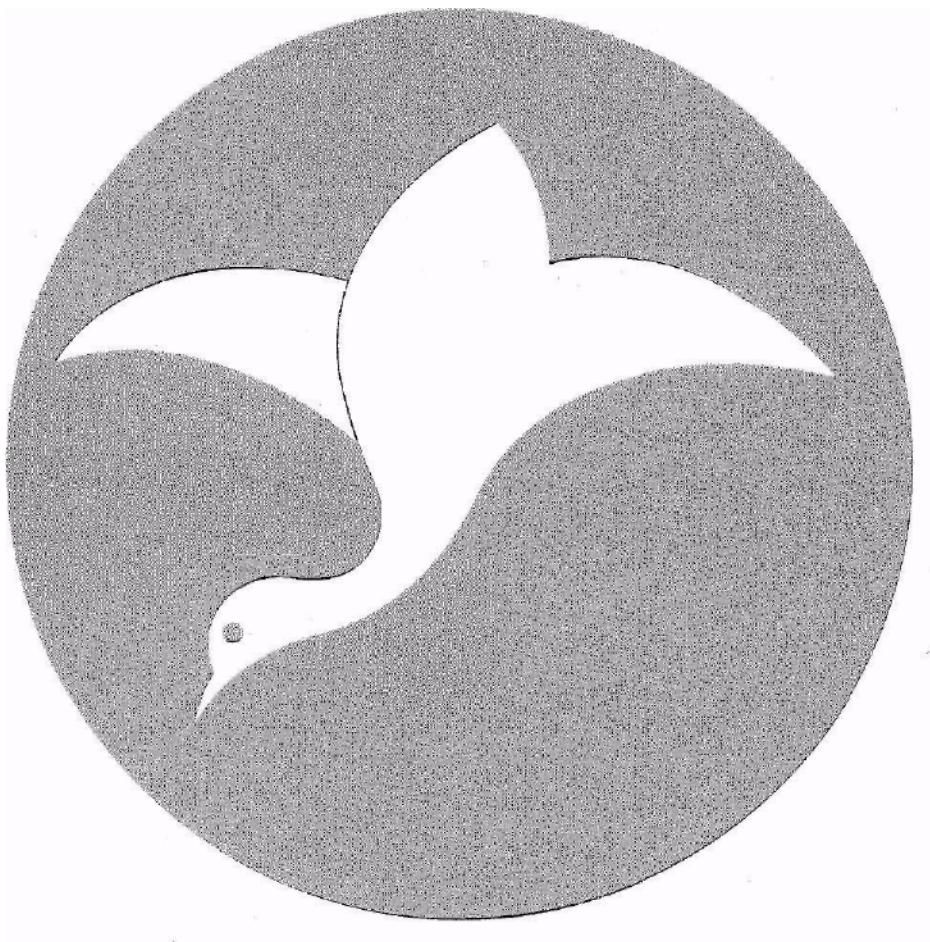
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