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AUTHOR Nitecki, Joseph Z.
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ABSTRACT

This work supplements a previous work, "Philosophical Aspects of Library Information Science in Retrospect." It explores Library Information Science, which deals with the facilitation of recorded knowledge, the metalibrarianship encompassing the theoretical aspects of a broad range of recorded communications, and the philosophies thereof. This essay identifies relationships between published librarians interested in philosophical aspects of the field and their philosophical "mentors." Philosophers cited by librarians are identified and their major contributions to philosophy are briefly summarized. The impact of cited philosophers on the philosophy of Library Information Science is inferred from the comments made by citing librarians. The study draws keywords from librarians' comments, earmarks them as representative of certain philosophical concepts, and examines how frequently they appear. This examination fuels consideration of various relationships between philosophers and their views, ways terminology is interpreted, and theoretical background of Library Information. Appendices contain: (1) profiles of cited philosophers; (2) major philosophical systems; (3) major key words; (4) frequency of key words citations; and (5) analysis of the most frequently cited words. (Contains 242 references.) (AEF)

PHILOSOPHICAL ANCESTRY OF THE AMERICAN LIBRARY INFORMATION SCIENCE

by

Joseph Z. Nitecki

1997

ABSTRACT

This is a supplement to the compilation of essays in the philosophy of the American librarianship (Nitecki, 1995). Each philosopher mentioned in that compilation is discussed separately in Part II of this essay, with brief description of his viewpoints, comments about him and the relevance of his philosophy to librarianship.

The impact of the listed philosophers on the philosophy of librarianship is inferred from the statements made about them by persons citing them. Each selected statement is abbreviated with its first word considered a key word for the subject addressed. Various relationships between the philosophers, their views, key words and levels of their interpretations are described in the appendixes to this study.

CONTENTS

PART I: THE ANALYSIS

1. Introduction.

Bibliothecal communication always takes place between past recorded knowledge and its present recipients. It relates to the processes, both physical and cultural, which to some extend made each of us individually, and all of us together, what we are. To understand ourselves and the world around us, we communicate with experiences of others through available records. Library information science deals with facilitation of recorded knowledge, the metalibrarianship encompassing the theoretical aspects of a broad range of recorded communications, and the philosophy of metalibrarianship searches for the meaning, the nature and values of such communication.

This essay attempts to identify some relationships between individuals interested in philosophical aspects of Library Information Science (LIS) and their philosophical mentors.

2. Methodology.

The study is based on the thorough review of all essays in English language, listed in the Library Literature under 'Librarianship, Philosophical Aspects' in J. Z. Nitecki: Philosophical Aspects of LIS in Retrospect, 1995.[1]

The total literature in American philosophy of librarianship is small, hence the citations are relatively few; however, within that small sample there are some interesting relations. Although this type of study does not lend itself to the rigor of the

scientific analysis, some numerical relations between the kinds of philosophers cited, their profiles, and the topics identified by the citations may suggest interesting patterns within the discipline.

Limitations of the analyses are determined by the degree of subjectivity in formulating, classifying and interpreting data. The scope of the study is well defined, statistical descriptions are simple and obvious but the selection of key words and designations of their interpretative levels are of necessity subjective. The study includes all individuals who are identified as philosophers in the Encyclopedia of Philosophy, although not all are also listed in either of the philosophical dictionaries consulted. The criteria for selecting the key words were determined by the actual context of the domain studied, i.e., they refer to the summaries provided in the second part of this study only, not necessarily reflecting major philosophical concepts of cited philosophers.

The impact of philosophers on LIS is inferred from the examination of key words in the summaries of the philosophers viewpoints listed in appendixes. They provide numerical analysis of relationships between philosophers, their profiles and impact on librarians who cited them. The study identified 503 keywords referred to ninety-four philosophers cited by 154 authors in the 225 essays published in library literature on the subject of library philosophy.[2]

In Part II of this study the philosophers cited by librarians were identified and their major contributions to philosophy

briefly summarized. The individual entries consist of paraphrased extracts from The Encyclopedia of Philosophy, a handbook (Avey, 1954) and two dictionaries (Angels, 1992 and Runes, 1981). The impact of cited philosophers on the philosophy of LIS is inferred from the comments made about each philosopher by citing librarians. The annotations vary in scope. Some references relate cited philosophers directly to the issues in philosophy of library information science, others are mere casual notes or quotes, indicating librarian's familiarity with a given philosopher.

Appendixes contain numerical descriptions of various relationships between the philosophers, their profiles, key words expressing their philosophical views and the authors citing them in American library literature.

Appendix-1 contains (1) the list of philosophers cited by librarians, arranged in alphabetical order with a note about the period, nationality of each philosopher and his major school affiliation. It also included numerical summary of nationalities, cited schools of philosophy, and their rank order (Appx-1a).

Appx-2: This appendix list all philosophical schools of philosophy and the philosophers affiliated with them (Table 1). It also includes some philosophers that are not reviewed in this study, but who are important representatives of particular schools. The appendix also includes examples of contrasting interpretations of some major philosophical concepts (Table 2). The list is arranged in two columns: first represents conceptual, frequently metaphysical, definitions, the second the

experiential, mostly epistemological, interpretations. Following each pair of concepts is a brief note about its possible equivalence in philosophy of metalibrarianship ('M').

Appendix-3 consists of primary data on which all the statistical descriptions of this study are based. It lists sequentially all philosophers cited in this study arranged by periods, followed by abbreviated key words and levels of their interpretations by quoted librarians.

Column (a) refers to the philosophers listed by name in Appendix 4. Column (b) contains the brief summary of the major themes of each philosopher, identified by librarians. The first word in the summary is a key word standing for the subject matter of the comment. It is followed by the symbol designating the nature of the description of the word: '=' stands for the definition of the concept, its meaning or essence, often metaphysical (conceptual level, Co, described below); '>'relates to the characteristics of the key words such as their origin, nature or environment, predominantly epistemological (contextual level, Cx); '<'represents the variables that affect the key word by changing or modifying its characteristics through processes or procedures, frequently value-laden ethical (procedural level, Pd); '-' indicate the critical comment made by the librarian about a particular philosophical statement.

The table is divided into four periods: (1) Antiquity, from Heraclitus (number 1 in the table) to Sextus (number 11); (2) the Thirteen to the Nineteen century (from #12 Aquinas to # 39 Laplace); (3) Nineteen to the Twentieth century (from #40 Comte

to #62 Whitehead; and (4) Twentieth century (from #63 Adler to #94 Wittgenstein). The names of individuals born at the borderlines between the periods were moved to the next one.

The last column contains the codes for levels of citations (Co, Cx, Pd, CR) and the letters of the most frequently cited librarians (MFCL).

To limit the subjectivity in assigning the levels of citations, the following criteria were used: (a) Individual citations were reviewed in terms of the philosopher's level of interpretation of a particular concept or issue, as perceived by the citing librarian. (b) The questions asked in selecting the level were: for Conceptual level 'what is 'x', the concept or event; for Contextual level 'why x is so'; and for Procedural level 'how x becomes what it is at the moment'.

The most frequently cited contributors to the philosophy of librarianship were identified in Nitecki (1995) study. They included the following individuals with frequency of citations to them indicated in brackets: librarians Foskett (10), Nitecki (18), Shera (51), Wright (13) and economist Machlup (9), all identified in this study as most frequently cited librarians (MFCL). The list in original study also included Butler (27), Ranganathan (24), Shannon (21), M.Dewey (20), Broadfield (12) and Fairthorne (9). None of these individuals (with the exception of Fairthorne who cited only one philosopher) referred to any philosophers in Nitecki (1995) study, hence are excluded from the present review.

Appx-4: This table summarized the frequency of cited key words. The total number of key words assigned to each philosopher is classified by the level of librarians' interpretation (Co, Cx, Pd, CR), further subdivided by the number of total key words that were specifically cited by the most frequently cited librarians (F, M, N, S, W).

Appx-5: The series of tables in this appendix summarize numerically different aspects of the impact of the selected philosophers on the development of American philosophy of librarianship. The content of this appendix is extracted from Appendix 4. It includes: (a) a list of 14 most frequently cited key words. The first column refers to the philosophers cited, the second lists the key words and the last column indicates the level of interpretation (Appx-5a). (b) This table rearranges the number of individual key words by the five most frequently cited philosophers (from Popper to J. Dewey), the total number of citations to other philosophers and the grand total of all citations of a particular key word (Appx-5b).

In the next four tables of that appendix, the most frequently cited key words are rearranged by different components: (1) by the four main historical periods (Appx-5c) and (2) by the levels of citations (Appx-5d). (3) This table lists all key words cited by the five selected librarians; the references to a philosopher are shown in the first column, an abbreviated key word in the second and the level of citation in the third column (Appx-5e). (4) The last table lists the total number of citations to the

most frequently cited key words by the five librarians (Appx-5f).

It should be noted that (a) present compilation should be considered as a sample of relevant literature only; although a significant segment of library literature was reviewed for this study, some essays may have been inadvertently omitted; (b) selection of philosophers is determined by their citations in the essays addressing library philosophy only; (c) the comments are selective, and may not satisfactorily reflect the cited philosopher or quoted authors' intentions; and (d) as already mentioned, the abbreviated notes about individual philosophers and schools of philosophy are the aggregates of selective extracts from the Encyclopedia of Philosophy (1967), the handbook (Avey, 1954) and the dictionaries of philosophy listed in the bibliography (Angels, 1992, Runes, 1983). To avoid repetitions, these sources are not cited in the text unless quoted verbatim.

3. Perceived Heritage

a. *Profiles of Philosophers* (Appx-1)

Numerically, the influence on American philosophy of librarianship is predominantly West European. 83 philosophers, or 88.3% of all intellectuals listed were either English, U.S., ancient Greek, German or Austrian.

The Anglo-Saxon group of English and U.S., citizens alone account for almost half of all individuals. Only two non-US and non-European philosopher were listed among the fifteen different nationalities (Indian and Mexican philosophers).

There were 45 different philosophical schools listed in this study; occasionally more than one school was identified with individual philosophers. The most frequently cited primary affiliations of philosophers were Realism (15 times), Science (13 times), Ethics (11 times) and Idealism (10 times) (Appx-1).

The distribution of schools varies still more were the affiliations are compared with the schools listed for the 14 most frequently cited philosophers (Appx-1a). Here, in rank order, Idealism was listed 91 times, Humanism 51 times, Ethics 49 times, Realism 49 times and Sciences 46 times. However, when the citations for the remaining eighty philosophers were counted the priorities changed. The most frequently listed in that group were Sciences (52 times), followed by Pragmatism (42 times), Ethics (29 times), Realism (27 times) and Rationalism (21 times). The highest popularity of Idealism is to great extend created by the philosophical affiliations of the most frequently cited philosophers who were all idealists. The distribution clearly reinforces the widely held view, that American librarianship is based on Platonic and Aristotelean schools of thoughts.

(b) *Major philosophical systems* (Appx-2).

Philosophical schools briefly annotated in this appendix reflect general trends of thoughts of a particular period, school or groups of individuals thinkers. The focus here is not on the intricate and detailed analysis of individual philosophers, but on the overall pattern represented by their views.

Forty-five schools are summarized, identifying philosophers normally classified in them (Appx-2a). All philosophers discussed

in this essay are assigned to one or more of these schools. The grouping also includes major representatives not analyzed in this study. Among the more popular philosophers not cited by the librarians were Thales (c.640-c.546 BC) of Antiquity, probably the first Western philosopher raising the question about the nature of Ultimate Reality; the early Christian philosopher Aurelius Augustinus (354-430) (known as St. Augustine) representing the beginning of the intellectual Christianization of the Roman Empire; Spinoza (1632-1677) of the early modern period, developing rational philosophy of the unity and wholeness of the universe based on deductive method; Nietzsche (1844-1900) expressing the optimism of the 19th c. and Santyana (1863-1952) of the present century, representing the views of Critical Realism.

Some philosophers are listed in more than one category (eg. Comte in seven schools, Leibnitz in four). One early school of philosophy, Cynicism, is not represented by any of the philosophers discussed here, it is included because it represents the views opposing skepticism, discussed in this appendix.

Examples of some contrasting views represented by different philosophical interpretations of reality are listed in Appx-2b. They are arranged in two parallel groups: the conceptual, often idealistic and empirical, frequently experiental. There are similar, not yet resolved, differences of opinion on basic issues in librarianship, particularly in the metalibrary interpretation of library philosophy. Some such controversies are listed in each section of the table (marked as 'M' for metalibrarianship)

To illustrate the contrary views, the two major schools of library philosophy are often characterized in terms of monistic Platonic syntheses ('hedgehog 'metaphor) and pluralistic Aristotelean analyzes ('fox' metaphor). Similarly, several contradictory positions were not yet resolved, such as (a) the distinction made between censorship and selection, (b) library neutrality versus social activism, (c) librarian's role as a teacher or information specialist, (d) relationships between instrumental value of library action and the metaphysical aspect of knowledge, (e) library theory focus on form versus content, or (f) in library administration, centralization versus decentralization, and authoritarian versus participative management.

c. *Philosophical issues* (Appx-3).

Philosophical concepts of interest to librarians, are tabulated in this appendix. As shown in that table, the subject matter of philosophical concepts is scattered. The data are more fully analyzed in the next two appendixes.

d. *Key words as indicators of philosophical subjects* (Appx-4).

Frequencies of key word citations are the subject of this appendix. The summary comparison indicates that (a) predominantly contextual level of analyzes (54.4%) is followed by conceptual (27.4%), critical (10.5%) and procedural (7.5%) comments respectively; (b) the number of citations gradually increases with each historical period, from 78 key words in Antiquity culminating in most references made to the philosophers of the twentieth century (175 key words); (c) philosophers in all

periods had impact primarily on contextual, epistemological issues related to the nature and origin of various concepts. The conceptual, metaphysical references to definitions and meanings of concepts followed in the remaining periods; (d) most critical comments were made about classical philosophical concepts of Antiquity and the comments of the twentieth century philosophers.

In this study the most frequently mentioned philosophers were Popper, Plato, Aristotle, F. Bacon, Kaplan, Ortega and J. Dewey. Together they made up 31.8% of all the citations.

The high frequency for Popper, Kaplan and Ortega were mainly due to their general popularity and pragmatic views (Popper and J. Dewey) and their direct interest in the issues related to philosophy of librarianship (Kaplan and Ortega). The close number of citations for Plato and Aristotle reflects the general duality in the librarians' approach to the philosophy of librarianship, expressed by these two philosophers. F. Bacon was popular for his empirical approach and inductive method.

The largest influence of the antiquity was on contextual and conceptual level of philosophical issues, with relatively high number of critical comments made about some philosophical views of that era. It is interested that more than twice as many comments were made about Socratic-Platonic than Aristotelean viewpoints. The leading commentator among frequently cited librarians was Wright, whose book on this period of history was the major contribution.

In the Middle Ages, the contextual and conceptual interpretations continue to be the strongest, with increased

references to procedural and methodological issues. The highest number of citations in this period is made by Shera, who was one of the most frequent contributors to library literature.

In the Nineteenth century predominant are again the citations referring to the contextual aspects of philosophy, followed by conceptual comments. Critical comments and Shera's references continue to be high.

In the Twentieth century, the number of all interpretations increased considerably. All five frequently cited librarians were commenting on the philosophers of that period, with Nitecki having the highest number of citations, in part due to his numerous essays on the subject of metalibrarianship, suggesting a logical system for the philosophy of librarianship based on current philosophical trends.

Overall, contextual interpretations of philosophical comments dominated all philosophical periods. Of the 148 citations made by the most frequently cited librarians, Shera led with 42.5% of all comments.

e. *Most frequently cited data* (Appx-5e).

To narrow the spread of key words among many cited subjects, the comparisons in this appendix focus on the most frequently cited philosophers (MFCP), their key words (MFCK) and most frequently cited librarians (MFCL).

The 14 most frequently cited key words (MFCK) constitute the base for all the comparisons in this section (Appx-5a). The most

frequently cited was 'library information science' key word (115 times), followed by key words 'knowledge' (49 times), 'libraries' (43 times) and 'information' (27 times).

Among the most frequently cited philosophers (MFCP) (Appx-5b), citing most frequently cited key words (MFCK), Popper led with 32 key words, followed by Plato (21 MFCK), Aristotle (14 MFCK), Kaplan (17 MFCK), J. Dewy (18 MFCK) and Ortega (14 (MFCK). Together these philosophers accounted for 34.3% of all key words cited. The MFCK were most often cited by Popper (8.5% of all MFCK), most of them referred to issues related to subject 'models'. Plato and Aristotle addressed the definitional issues that were related by librarians to the meaning and nature of the discipline. Kaplan, F. Bacon, Ortega and J. Dewey referred most often to Library Information Science, and Ortega specifically to 'Libraries'.

The number of citations gradually increased from the lowest in Antiquity and the highest referring to the Twenty century (Appx-5c). The strongest influence in all periods was on the issues related directly to the domain of librarianship (LIS).

Most of the 14 MFCK were cited in the Twentieth century (36% of all citations). The most popular key words (library information science, knowledge, libraries and information) constituted 62.2 % of all MFCK. Antiquity led in key word 'methods', Middle Ages in 'classification' and 'form', Nineteen century in 'education', nineteen and twentieth centuries in 'philosophy' and twentieth century in key word 'model'.

Contextual level of interpreting the MFCK dominated the whole distribution (55% of all MFCK), with conceptual interpretation running distant second (27.4% of all MFCK) (Appx-5d). The strongest contextual approach related to key words 'library information science' and 'knowledge'. Conceptual level led other levels of interpretation in the citing of key words 'philosophy' and 'form'. An altogether weak procedural approach did not relate at all to philosophy and classification, while the strongest criticism was of concepts represented by MFCK in Library Information Science and Philosophy.

The total number of key words cited by the most frequently cited librarians (MFCL) totaled 148, or 29% of all key words analyzed in this study (Appx-5e). Shera lead with over 40 percent of all MFCL key words, followed by almost evenly distributed citations among Wright, Nitecki and Machlup and a few citations by Foskett. Shera, Wright and Foskett lead in contextual approach, Nitecki in slightly higher conceptual level, Machlup breaking evenly. Procedural level was least represented, with Shera citing most of them; Wright provided most criticism, followed by Shera.

f. *The significance of most frequently cited data* (Appx-5f).

The picture did not change much, when the analysis narrowed, concentrating on distribution of the most frequently cited key words. Shera again led with 45.7% of all MFCK by MFCL, followed by Nitecki, Wright and Machlup and few key words listed by Foskett. However, all MFCL as a group accounted for 12.8% of all citations, suggesting the strongest influence of philosophers on

the leading writers in the philosophy of librarianship. Individually, Shera was most interested in the subjects of knowledge and methodology, Nitecki and Wright in definitional issues of Library Information Science and Machlup in relations between knowledge and science.

4. Bibliographical distribution.

In addition to the few referential works, the bibliography lists all essays referring to philosophers cited by librarians in this study. It is but a small part of a much more extensive bibliography of all the works in philosophy of librarianship, listed in Nitecki (1995). The present compilation illustrates the rapid increase in the number of essays citing professional philosophers, from one published in 1920's to the total of 225 titles published till 1995, the cutting date for this study. The two decades 1970's and 1980's, contains over 71% of all the titles published, with the 1980's alone containing 40.5% of all relevant essays.

5. The Nature of Emerging Pattern.

In appreciation of a painting, one is not immediately concerned about the hues of paints used or their chemical composition, but responds to an overall pattern created by that painting. Similarly, in the present study one ought not to pay too much attention to the absolute numerical values of various relations; they are affected by the subjectivity of the selection and classification of surveyed data. Hence, the analysis in this part of the present study could be accepted primarily as a description of a pattern of relationships that influence

philosophy of librarianship. For example, the specific frequencies of the key words used will change with different sample of literature studied, but the overall impact of the philosophers and the issues relevant to librarianship discussed by them, will, most probably, be similar to the picture drawn in this analysis.

6. Major Characteristics of the Library Information Science Philosophical Tradition.

Essays in the philosophy of librarianship citing philosophers form approximately one-fifth of all the writings on the issue of library philosophy, listed under that subject in Library Literature.

The overall interest in the philosophy as expressed by the contributing librarians is broad, almost accidental, with very few librarians examining the philosophical issues in depth. This is characteristic of the approach by generalists with a predominantly humanistic and sociological education. Philosophy of librarianship is not yet firmly established, but there is good indication of its incremental growth.

There is a strong predominance of Western philosophical tradition, representing both the idealism and empiricism with a focus on contextual and conceptual levels, with almost no mention of non-European philosophers or their schools. The five most frequently cited philosophers best illustrate the point. The core for the library philosophy was strongly established by Plato's metaphysical and Aristotle's empirical approaches. Librarians glided lightly over the history of Western philosophy, stopping

for a moment to note Francis Bacon's inductive, scientific methodology, and then heavily concentrated on the current philosophers. In this stage the philosophical reflections are divided between most popular pragmatism of Popper and John Dewey and the neo-Platonic and neo-Kantian idealism of Kaplan and Ortega.

Most influenced by the philosophers were the most frequently cited librarians, again representing the twofold approaches, Wright's metaphysical focus on 'form in matter' of librarianship, and Machlup's, a non-librarian and economist, attempts to reduce metaphysics of information to experimental science. Shera, the most encyclopedic and prolific writer on the subjects, mediated between the two opposite views, proposing social epistemology, which would bridge the two views. Nitecki attempted to develop a philosophical system based on the three-fold approach, anticipating Popper's scientific, impartial three worlds and Dervin's three personal and emotional interpretations of reality.

Unfortunately, the issues discussed in this study do not include references to philosophers by other, influential library writers.

The citations illustrate philosophical erudition of the library writers, who in their discussions related specific library issues to the more fundamental philosophical views. Philosophy is not foreign to library theoreticians, but it ought to serve more as a framework in their research. And of course, to be useful to practicing librarians, the philosophy of librarianship, should be fully developed as a system, interconnected with relevant

philosophical schools of thought, providing interpretations of both theory and practice of librarianship.

Notes:

1. Since 1990, all my ERIC essays were written under severe time constraints, created by my serious at that time, illness. Risking the loss of accumulated documentation, I have decided to publish my rough, preliminary studies, begging the readers' forgiveness for any oversights and uncorrected errors in the submitted manuscripts.

2. An interesting essay of Budd (1995) published after the basic data for this study were compiled, provides references to some philosophers reviewed here. Budd's argument that modern library and information science were dominated by philosophy of Positivism seems to apply more to the epistemological aspects of the science of the discipline and its practice than to its philosophy. In his long essay Budd refers to the positivist such as Comte and Carnap, but also to non-positivist Kant and Kaplan; he reviews ontological viewpoints but without direct references to the philosophy of librarianship. However, his recommendation to replace 'unworkable' positivism by hermeneutical phenomenology is itself a good example of a continually expanding interest in the philosophical aspects of Library Information Science.

Part II: THE PROGENITORS.
Individual philosophers cited in the selected literature of the philosophy of Library Information Science.

Relevance notes at the end of each entry contain brief summaries of the philosopher's major theme related to this study [P] and subject matter of interest to Library Information Science [L] with the number of citations in brackets.

Most of the descriptions of philosophers viewpoints are abstracted from The Encyclopedia of Philosophy (1967), a handbook (Avey, 1954) and two dictionaries of philosophy (Angels, 1992 and Runes, 1983).

ADLER, MORTIMER, J. (1902-):

Born in New York, Adler thought philosophy in Columbia and Chicago universities and directed the Institute for Philosophical Research. Known as 'a philosopher for everyman', he appeals more to the general audience than to the professional philosophers. His many publications cover conceptual analysis on a variety of issues reflecting scholastic approach and existential attitude.

Adler defines philosophy as a discussion of the principles and purposes of human life in terms of six ideas: truth, goodness, beauty, liberty, equality and justice. The truth refers to the correspondence between a statement of facts in language and the state of affairs in reality. Goodness relates to the desired and desirable things in life, the beauty to the enjoyable and admirable experiences. The liberty or freedom is determined by the social equality and justice. [Ch.P. Money, 1984]

Of particular interest to librarians is his distinction of three types of reading (1) structural or analytical, from the whole to the parts, (2) interpretative or synthetical from the

parts to the whole, and (3) critical evaluating particular author's intention. Reading contributes to the development of an individual, the reading material may be used for personal, social, professional or vocational purposes. [W.Dunnett, 1984]

Adler considered reading not only as a process of learning but also of thinking. "In reading we are able to experience things that no longer exist and to understand things that are totally unfamiliar to us' (In J.Z. Nitecki, 1986).

Direct, person-to-person communication is almost always an interchange, in which comments, follows each other in mutual simulation, similar to relationship between pitcher and catcher in baseball. Adler identified six ways of classifying knowledge: (1) by diversity of objects (eg. knowledge of facts or ideas), (2) by the faculty involved in knowing (eg. sense perception), (3) by the method or means of knowing (eg. a priori or a posteriori), (4) by degree of assent (eg. certain-probable), (5) by the end or aim of knowing (eg., theoretical-practical), and (6) by the media of communicating knowledge (eg. their means and methods). He also distinguished between (a) education by learning as a natural process of human being by discovery and experience, and (b) teaching, learning by instruction (art). In society we learn by the combination of both, the practical and artistic processes. (J.H. Shera, 1972)

There is never a perfect communication, there is always a loss, and reading is better or worse depending how active it is, and there is no absolutely passive reading. (Shera, 1973)

Adler discusses the use of the concept of form and its various meanings throughout Western philosophy (Young, 1987).

Relevance:
P: Pragmatist: Common sense approach to philosophy and ethics, analyzes of the thinking processes.
L: Classification of knowledge, reading, communication (6 citations).

AMPÈRE, ANDRE MARIE (1775-1836)

French physicist remembered for his major contribution to the foundations of electrodynamics. In philosophy his focus was on introspective analysis of the association of ideas, assuming the possibility of knowing inferentially the relationships between things-in-themselves. He divided association of ideas into ordinary recalls and merged ideas. The former is unaffected by their contiguity, the latter blend with their recollection of previous ideas, as perception. His interest in classification of science is today of mere historical value.

Ampere introduced, long before Norbert Wiener, the word 'cybernetique' meaning 'the science of government' (Colin E. Cherry, 1952). He defined it as the study, within international law and diplomacy, of relationships between people in making choices for achieving the desired goals. Thus he considered cybernetics as a subscience of government, 'an art of steering in general'. [M. Eden, 1983, p.409)

Relevance:
P: Realist: Knowledge by inference of relationships between things-in-themselves.
L: Historical reference to classification and cybernetics. (2 citations)

AQUINAS, THOMAS (1225-1274):

Italian philosopher and theologian and a proponent of realism in Christian religion. He Christianized Aristotle's thesis of independence, form and the principle of immanence (each existence aims at perfection).

At one time an oblate at the Monte Cassino monastery, he studied Greek, Jewish and Arabian philosophies, criticized Augustine's Platonic theory of knowledge for underestimating the human reason to know truth, and formulated principles of Christian humanism and naturalism.

In metaphysics Aquinas made a distinction between (a) what a being is, and (b) the fact that it is; a distinction between understanding the being (its essence) and the act of being (esse).

He maintained that knowledge can be gained from sense data of matter leading to the study of form. His dualism of matter and spirit is based on Aristotle's view of matter and form. Science is defined as knowledge of facts through general principles. Philosophy is the knowledge of ultimate things through reason.

Overall, Aquinas had an open mind approach in his search for information, and he stated that the arguments from authority are the weakest kinds of evidence in philosophical reasoning.

Aquinas affirmed the concept of 'censorship', justified by Plato's doctrine of general good, implemented by Romans in the fifth century and later codified by the invention of print in order to regulate the flow of information. (F.J. Stielow, 1983)

Aquinas assumed that form is an ideal, abstract nonphysical, metaphysical and universal entity that operates on matter, and has to do with essential nature of soul of things. (Young, 1987)

Relevance:
P: Moderate realist: mediating between philosophical controversies such as the status of universals (e.g., humanity, justice, whiteness) as realities in themselves or mental constructs; importance of metaphysical form.
L: Aristotelean viewpoint in Catholic philosophy of librarianship; support for censorship. (2 citations)

ARISTOTLE (384-322 BC):

A member of Plato's Academy, a tutor to Alexander of Macedonia and founder of the Peripatetic school, Aristotle was a philosopher and scientist, the first biologist, and the student of change manifested in natural processes.

His contributions can be divided into three distinct periods corresponding to the three major phases in his life; changing from the enthusiastic support of Platonism, the critique of Plato's notion of 'form' to the final rejection of its metaphysics, replacing it with the principles of empirical science.

The relationships between physical and formal, spiritual worlds in Greek philosophy, represented by Plato humanistic systematized 'form philosophy' and Democritus materialistic focus on 'matter philosophy', were joined by Aristotle's synthesis between the two in ontological dualism (Wright, H.C., 1986).

In every century an attempt is made to compare the relationships between life (mind) with its known at the time, machine (nervous system). This, was represented by a central

concept, 'pneuma' in Aristotle's philosophy. It probably fulfilled a function of a general intermediator between 'psyche' and 'soma', an important role in the life-matter relations. Aristotle used the term 'pneuma' as a metaphor, which later was interpreted as a prototype of an engine and a model for a mechanistic viewpoint (Eden, M., 1983).

The interpretation of each term changed with time. 'Pneuma' meant a spirit, vital force, psychic energy. 'Psyche' referred to the principle of life, soul or mind, the state of being alive, the source of consciousness or conscience. 'Soma' the body, developed into 'somatic' reference to the bodily organisms and 'somatic data' originated with bodily sensations as contrasted with 'sense data' caused by external sources.

Aristotle divided science (an analytical knowledge of the causes of things) into theoretical (abstract), practical (guide of conduct) and productive (guide of art) disciplines. Based on a logical syllogism of subject-predicate relationships, knowledge rests on the intellectual apprehension, supported by the empirical aspects of subject-matter.

Scientific inquiry aims at discovery of four causes of physical things: (1) material (physical matter), (2) efficient (the origin of things), (3) formal (their form) and (4) final (reason for their existence). Every object is a union of two principles: of matter and of form, as a process from potential to actual existence. The substance stands for what things are made of, the form is the specific characteristics of these things. The substance can change its form from potential to the actual.

The philosophy of nature is based on real, spontaneous, continuous and directed changes from the primary, simple elements of matter to more complex structure and functions.

Aristotle (and Plato) considered body as the instrument of the soul, its nature determined by its function; the soul is defined as the first entelechy of an organic body as a life-principle, the force that moves the body as its instrument. He distinguished between 2 kinds of truth: experiential (artistic, true to the perceiver's experiences) and intellectual (scientific, true to the objective reality). Poetry is an art of making poetry, not its product. The art, 'the techne' is a set of rules, system, or a method of making or doing'. Aristotle disagreements with Plato were part of internal dispute, related to his emphases on common sense and empirical facts. He retained from Plato the teleological point of view and an assumption that reality lies in form. He rejected however, the two-worlds philosophy of Plato, by trying to stay within this world. In general, the scientific approach (primarily Aristotelean) stresses form in matter, the humanistic the form and matter (basically Platonic); both approaches are correct, depending on the object of study: most scientists opt for immanence, most humanists for transcendence; the problem may arise when humanist study scientific phenomena and vice versa. (H.C. Wright, 1977a)

Aristotle, together with Plato, assumed that form is an ideal, abstract nonphysical, metaphysical and universal entity that operates on matter, and has to do with essential nature of soul of things. He specifically made a distinction between eidos and

morphe (ideal and material form), the material object pass through 'potential' stages toward some ideal actual form; its purpose is to reach that ideal form (the distinction between potential and actual existence) (Young, 1987).

In ethics, the human good is expressed in the process of actualization of rational faculties in theoretical inquiry and contemplation of truth. People by nature are 'political animals', living in a society which through its institutions satisfies our primary needs. Our happiness may be based on (1) pleasure and enjoyment, (2) free and responsible citizenship and (3) reflective philosophy. Aristotle also distinguished between ethics as science and as morality, maintaining that we start with intuition of the principles and combine them with the knowledge by induction from the interpreted sense-perception (Capuro,R, 1985).

Aristotle considered science as dealing with absolute certainties, logically demonstrable truth (this method exists only in mathematics; to him biology, ethics, politics or psychology were inquiries rather than sciences) (Machlup, 1980).

He focused more on the issues related to natural phenomena than on the reasoning processes. His own library collection and its organization were important factors in the development of the Alexandrian library (Burke, R.A., 1953).

Application of Aristotelean philosophy:

(a) General:

Grover R. and J. Glazier (1986), proposed a model for theory building based on Aristotelean notion that 'the whole is greater

than the sum of its parts'; it is not enough to understand each component individually, but that the approach must be holistic; its basic principle is the concept of unity or interconnectedness, integral to the taxonomy.

Terminology created by Aristotle is still used today. The idea or the form of a particular object is a concept based on the particular characteristics of that object's species, with no independent existence of its own. Contrary to Plato's belief that everything first exists in the world of ideas, Aristotle maintained that nothing exists in our consciousness prior to its sense experience.

A.R. Anderson (1967) noted that Boolean Algebra is based on the close parallels between Aristotelian subject-predicate propositions and the ordinary algebra of numbers, giving rise to the modern symbolic (rather than Aristotelean) logic of quantifiers, so basic in the computer search processes.

In his model Aristotle frequently used mechanical and organismic analogies (G. Harmon, 1973)

The Aristotelean law of identity "A is A" is represented in bi-valued English, as opposed to 'multi-valued' Chinese (the differences are part of relations rather than absolute e.g., 'longness' and 'shortness'). Philosophy of education is rooted in classical Aristotlean and Platonic tradition. (J.H. Shera, 1972)

(b) Related to LIS:

Aristotle's discussion of the first philosophy offers metaphysically useful observation and an argument for the definition of librarianship. In Aristotle's terms librarian qua

librarian is a quality or an attribute predicated to a more primary substance; fullest meaning of librarianship requires extending beyond itself, to that upon which it depends (J.Ch. McConnell, 1992).

Aristotle's analysis of change consisted of isolating three elements: terminus ad quo, terminus ad quem and the process. Related to librarianship, terminus ad quem is the end of a process and is clearly identified with the reader; the process itself can be related to the procedures, while the terminus ad quo stands for either the books or the librarian or both. The lack of a satisfactory answer which of the two it is, causes ambiguity and confusion in the philosophy as well as in library theory (Petocz, 1969).

In his argument against librarians political neutrality, J.A. Hennessy (1981a) refers to Aristotle's notion that inequality arises when two equals are treated unequally, or when unequals are treated equally. This implies that a neutral library cannot disseminate information effectively, hence political information in libraries is crucial for minimizing impact of political power and organization that takes the advantage of that inequality.

Shera (1965) noted that: (1) Aristotelean concept of the hierarchy in classifying knowledge is rejected, if classification is to adjust to constant changes in the development of knowledge. For that reason the problem of Bacon's scheme of classifying knowledge is traced to Aristotelean concept of hierarchy. Librarians in response to constantly changing pattern of patrons use of the collection, utilized Aristotelean concepts of genus,

species and subspecies by rationalizing the procedure in terms of average use by average reader and added the compression of hierarchical pattern by mono-dimensionality of physical arrangements of collections. (2) Organization of knowledge (and library collections) always relates to Aristotelean concepts of genus, species, differentia, property, accident, and hierarchical structure of knowledge. (3) Library education should include both Aristotelean and symbolic logic.

(c) Related to information:

Essential elements of the information society were already identified in Aristotle's time and reflected in the 'Alexandrine imperative' to record all written knowledge. Once recorded, the text should be compared and criticized, leading to its better interpretation (Traue, J.E., 1989).

Aristotelean model of communication as relationship between speaker-Speech-Audience was followed by Shannon's telecommunication model translating 'speaker' into 'source', 'speech' into 'signal' and 'audience' into 'destination', adding 'transmitter' and ' receiver' (McGarry, K. J., 1975).

(d) Related to communication:

According to K.J. McGarry (1975), Aristotle was the first philosopher who in his rhetoric provided systematic study of communication. He based communication process on three basic components: the speaker, the speech and the audience. To him a person who cannot communicate is either below or above humanity. He also pointed to the influence of the speaker's ethos, the quality influencing the reaction of the audience. Aristotle's

logic is linear, in which an argument follows from another in order to be logically valid.

Aristotle's notion that man is a political animal ('polis', the community or society) was converted in the Twentieth century into the notion than man is a communicative animal. This is an illustration of a sociological principle that social development consists of increased differentiation simultaneous with increased interrelatedness (L. Landheer, 1957).

(e) Philosophy of LIS:

Among the aspects of Aristotle's philosophy relevant to librarianship are the notions of (a) unchangeability of universal properties of objects (their form) and the changeability of particular components (of their matter), both fundamental aspects of the same thing. (b) Everything has a purpose or function (design and order of the universe). (c) The concept of Golden Mean as a balance between extremes. (d) Importance of organization (hierarchy). (e) Education interpreted as a process of reasoning capacity, necessary in making right choices, with the reciprocal relationships between educated person and citizen. (f) social role of the library in satisfying the intellectual needs of its society.

The development of library philosophy can be reviewed in terms of two major approaches of Plato and Aristotle, reflecting the idealistic and pragmatic viewpoints. Aristotelean approach was introduced by Chicago's Graduate Library School which focused on sociological research and methodology, implemented by Shera and Shores (McCrimmon, B., 1994).

In defining library philosophical functions, J. Bekker (1976) notes Aristotle's distinction between efficient cause (applicable in librarianship) and final cause.

Relevance:

P: Aristotle maintained that: (a) rational faculties not only order sense data but also provide description of real things. The thought and its power of a priori reasoning provide a clue to the nature of reality (Rationalistic view). (b) Reality is independent of the knowledge about its existence. The function of knowledge is to understand things as beings and their very being. Aristotle's realism is also empirical, opposing initially nominalism, and idealism today (Realistic view). (c) He distinguishing between: (1) metaphysics as the ultimate reality and applied disciplines (e.g., logic, ethics, psychology), and (2) form (what is formally) and matter (source potential for changes in form) (Conceptual view).

L: Aristotle's philosophy provides bases for the definition of librarianship, its wholistic theory and classification of knowledge. He anticipated information society and his philosophy is now used as an argument for the computer search processes, and against political neutrality of libraries. (21 citations)

AUSTIN, JOHN LANGSHAW (1911-1960):

A British philosopher of ordinary language focusing on the connotation, denotation and gradation of language. Relevant to librarianship may be his distinction between locutionary, acts relating to definite linguistic meaning and illocutionary acts merely hinting the reference and perlocutionary acts of communication through images. This approach shared with other analytical schools can help librarians to understand better the meaning and use of communication. However, the language clarification may not be enough when recommendation of proper information sources is called for. The analytical method is one of the tools in practice, not the end in itself.

In his review of literature on analytic philosophy of the 20th century, Reed, T.M., (1971) stresses its importance in linguistic, conceptual investigation of philosophically ambiguous concepts in philosophy as well as in other disciplines. The approach criticizes a priori, speculative interpretation of reality. Within the movement, Reed distinguishes between (a) analytical approach of G.E. Moore and Bertrand Russell, (b) Vienna Circle of logical positivism of A.J. Ayer and L. Wittgenstein, and (c) Ordinary Language school of G. Ryle, and J.L. Austin.

Reed points out to the significance of analytical inquiry for nonphilosophical disciplines by providing methodological, conceptual analysis and insight to practitioners own fields of inquiry. The traditional metaphysician concentrating on comprehensiveness and generality seldom offers similar insight.

D.A. Kemp (1976) cited Austin's interpretation of the statement 'I know' as reporting about state of mind or understanding and their relations to reality; although the person uttering this statement does not considers it a report but rather a confirmation that a given statement is true.

Relevance:
P: Analytical philosophy of 'ordinary language' school of philosophy. Focus on relationships between meaning and use of language.
L: Possible contribute to the methodological study of bibliothecal communication. (2 citations).

AYER, ALFRED JULES (1910-1989).

British philosopher, and a member of the Vienna Circle's Logical Positivism (Scientific Empiricism), made a distinction

between (a) open to public verification of factual judgment based on the description of facts, and (b) private, unverified value judgment of emotional expressions. With other analytical philosophers, Ayer rejected systematic philosophy as based on confused language and its meaning. He shared with them the need for clarification of language as the main goal of philosophy. He was sometimes called an 'analytically minded empiricist'.

T.M.Reed (1971) refers to Ayer's notion that all meaningful, significant sentences are either nonfactual tautologies (e.g., in pure mathematics), or empirically verifiable propositions (e.g., experimentally tested statements in natural sciences). All other sentences are considered without meaning (e.g., metaphysical statements defying verification). The role of the philosopher is to interpret, not through speculation but logical analysis, the effects of linguistic usages.

D.A. Kemp (1976) note that to Ayer the distinction between knowledge and true opinion does not exist or is not essential.

Relevance:
P: English version of the logical positivist doctrine maintaining that every genuine proposition is either analytic or empirical.
L: Impact of language usage on library communication. (2 citations)

BACON, FRANCIS (1561-1626)

Although he did not developed philosophical system of his own, Francis Bacon opposed the theological, deductive Aristotelian and Scholastic logic based on dogmatic, a priori assumptions, and instead, proposed an inductive, scientific method for discovering truth by empirical observation, analyses of observed data, hypotheses based on inferences and their verification through observation and experimentation. He introduced the concept of science as a systematic study. In philosophy he preferred materialism of Democritus over idealism of Plato and Aristotle. His major contributions to science and philosophy was in the vision of restoring human mastery over the natural world, but as he himself admitted, he was only able to construct the new machine, but failed to make it work.

D.A. Kemp (1976) pointed to Francis Bacon's major contribution to philosophy of science in combining experimentation and observation in the deductive process. He used memory (history of knowledge), reason (science of philosophy) and imagination (poetry) as the basic sources of knowledge. This tripartite division had great influence on the interpretation of knowledge.

For Bacon an empiricist, science was the 'image of the essentials, using the terms 'science', 'philosophy' and 'doctrine' as equivalents (F.Machlup, 1980).

The typographical fixity, as illustrated by the methods of copying handwritten books, changed radically in Bacon's words 'the appearance and state of the whole world [bringing] the most

radical transportation in the conditions of intellectual life' (In E.L. Eisentstein, 1968, p.56).

The core of librarianship is, according to M.F. Winter (1988), a three-part interplay between organizational structure of knowledge, based on the Baconian outline of knowledge, the patterns of information use and the theory of intellectual freedom.

Bacon identified four major preconceptions, called 'idols' that hindered the use of his method: (1) of the Tribe (anthropocentric interpretations), (2) of the Cave (personal prejudices), (3) of the Market Place (use of undefined terms) and (4) of the Theater (indiscriminate acceptance of tradition and authority). He was an advocate of 'a marriage between the empirical and rational' approaches.

Based on the above concept, B.P. McCrum (1946) identified three idols of librarianship: (1) of the librarians effort to master the machine, (2) of low librarians esteem of themselves as 'mere librarians', and (3) of bureaucracy based on the rigidity, formality and precedents. These idols can be eliminated by changed librarians attitude, better definitions of library performance and improved library education.

In his Advancement of Human Knowledge, Bacon divided History (Memory) into Natural History; Poesy (Imagination) into Narrative, and Philosophy (Reason) into Divine; each further subdivided into subclasses until whole knowledge was covered. Contemporary subject classification is primarily based on his 'inverted' categories of knowledge (E.E. Graziano, 1955). This

approach influenced William Harris classification system, and in turn, Dewey's Decimal Classification.

Bacon developed the principle for classifying book content taxonomically based on the assumption that reader uses them in that pattern. He distinguished between three faculties of the human mind: memory, reason and imagination. Librarians accepted uncritically Baconian notion that reading makes a full man, hypothesizing a 'general reader' as a stereotype of public library patrons and promoting reading activity as implicitly desirable. Shera points out that encouraging 'reading qua reading suggests encouraging good reading only, but hopefully based on readers' own judgment of what is good. Bacon encouraged experimental method for discovering facts, but he also objected to the haphazard accumulation of observations. He was suspicious of artificial speculation but encouraged knowledge for its own sake to discover causes and axioms. He also pointed to the fallacy of investigating 'the nature of anything in the thing itself' (J.H. Shera, 1972).

Bacon classification of human knowledge was praised by librarians. His statement that knowledge is power was adapted as one of the principles of librarianship: since libraries are storage of knowledge they are also centers of power (J. Thompson, 1977).

Bacon's statement that 'reading maketh a full man' made three centuries ago still lacks scientific verification. This statement was used by Wilson in his philosophy of librarianship, not so much as the explanation of how it makes a full man or what this

fullness consists of, but as the way of raising the question for library research (S. Karetzky, 1982). The statement is accepted on faith, because there is no evidence for that, and no knowledge what kind of reading would accomplish that goal (Shera, 1976).

Francis Bacon's criticisms of 'mean' books was one of the major influences on Putnam's thinking (J. Krieg, 1970 and Library Association, Great Britain, 1980).

In reviewing different methods in developing a theory of information science, H. Poole (1985) discussed the middle-range theory for research of limited data, each forming 'building blocks' of system theory. It is based on Francis Bacon's 'middle axioms', useful in guiding empirical inquiries and serving as an intermediate theory, based on abstractions and empirical tests.

Bacon insistence that the impressions received by senses are fixed in the memory is faulty, but he perceived that the cognitive processes are activated in the brain through sensory perception. Shera (1973) notes that information retrieval would be easier, if we would know what is going in patrons' mind.

In his search for the basic concepts in the philosophy of librarianship R. Staveley (1964) reviewed several philosophical viewpoints, among them the scientific humanism of Francis Bacon, which interrelated science as an instrument of progress with humanities as a source of inspiration. This approach expected librarians to be interested in human communication, considering each individual as a unique person and to support popular education relevant to each individual need.

On the other hand, H.C. Wright (1979) argued that the 19th c. instrumental and utilitarian reasoning was based on Baconian scientific doctrine that knowledge is instrumental. This lead to the misunderstanding by librarians of the distinction between library substance and its instruments, between physical data and metaphysical ideas, between knowing which is instrumental to experience and ideas in which experience is instrumental to knowledge.

J.E. Traue (1992) noted that 'we have moved on from Francis Bacon's view that the facts will speak for themselves that the careful accumulation of verifiable data will automatically reveal the great truth about nature, to a recognition that facts, information, and data are all servants of ideas; without ideas we don't even know where to go looking for the facts; ideas effectively determine what we are going to regard as relevant facts' (Traue, 1992, p.33).

Throughout the history, changes in the library mission were not caused by librarians ignorance of their role in the society but by the changing meaning of concepts such as 'service'. Major such transformation took place during Industrial Revolution, changing the approach to social issues and shifting from the deductive to inductive methodology of Francis Bacon, advocating observation, collection of data and their inductive analysis (A. Robson, 1976).

Shera (1965) criticized Bacon's contributions to philosophy: (1) The problem of Bacon's classification of knowledge was its influence by Aristotle's approach and the notion that mind works

in discrete compartments, memory is confined to history, and history is just a recall of facts and that reason and imagination are extreme notions. However his psychology is remarkable not because of its faults, but because it is a psychology at all. His doctrine of unity of knowledge introduced the notion of the systematic plan of organization. Till recently his tripartite division of knowledge into Memory, Imagination and Reason was unchallenged. (2) Bacon was not a scientist, he denied blood circulation, rejected Gilbert's work on magnetism and Copernican astronomy, and did not understand Galileo - he was a lawyer, practical politician and man of letters, he created no new science but preached new philosophy of inductive science. He considered realities of the universe as self-contained whole, arguing that the phenomena (or instances) of the totality should be assembled, examined, weighted against each other and evaluated. He defined 'facts' as 'the unmasking the nature'. He criticized empty rationalism of Scholastic science by urging observation and experimentation.

Relevance:
P: A realist, Francis Bacon combined in a deductive process and experimentation with observation.
L: Definitions of librarianship, library ethics, librarians' idols and classification of knowledge based on Bacon's philosophy (18 citations).

BACON, ROGER (c.1214-1282)

Roger Bacon, English philosopher and scientist, was an advocate of Aristotelianism, and an author of the Opus majus, an encyclopedia of unified science. He was interested in

linguistics, physical sciences (optics), mathematics, deductive application of principles and their experimental verification.

His writing was erratic and often naive and philosophically immature; his main contribution was less in original experimentation and more as a zealous advocate of science. His stress of the importance of language studies was based on the belief that all knowledge can be obtained from reading the Scripture.

Colin E. Cherry (1952) pointed out to Roger Bacon's philosophical contribution to the theory of communication of information by suggesting lodestone (a magnetite that possesses magnetic polarities) as a possible device for long distance communication and for introducing a bilateral code for each letter of the alphabet.

He defined knowledge in terms of what can be done rather than what hypotheses can be formulated (Shera, 1965).

Relevance:
P: A realist, naive Aristotelean and propagandist for science.
L: Notion of physical means for communication of data.
(2 citations)

BARFIELD, ARTHUR OWEN (1898-)

Little known English scholarly writer, Barfield was interested in the relationships between poetry, science, philosophy and religion. His philosophy of knowledge can be described as the Romantic Transcendentalism. He maintains that the origin of language is mythical, immediate and external, and the knowledge is originally pre-logical, and unconscious. Since ancient Greek philosophy till contemporary empiricism, the process of

consciousness is over-intellectualized. Romanticism, through imagination, attempts to regain the understanding of the world, which in ancient times was perceived unconsciously (Menzel, 1972).

Transcendental philosophy is intuitive, concerned with the method of knowing rather than with the known objects. It opposes the assumptions of empirical and positivist philosophies that the only knowledge possible is through interpretation of the facts of nature.

Menzel attempts to apply Barfield's transcendental epistemology to the study of the nature of library science. By criticizing mechanical interpretations in natural science and librarianship, based on Descartes' matter-mind duality. Mentzel agrees with Shera's call for epistemological analysis of librarianship, but objects to his concept of 'management of knowledge' that relies on mechanical methodology of the positivistic philosophy. He also chastises Goldhor for misconstructing historical approach by depending on empirical methodology.

Relevance:
P: Transcendental epistemology viewed as a possible approach to the study of library philosophy.
L: Criticism of empirical approach to librarianship. (1 citation)

BENTHAM, JEREMY (1748-1832)

Bentham, a prominent leader of the English Utilitarian school of philosophy, was a nonpracticing lawyer, and leader of the political radical movement. Best known for his analysis of English legal system, and his Hedonistic Calculus based on the principle of greatest happiness to the greatest number of people.

Bentham advocated social, penal and legal reforms, defended individualism, and laissez-fair economic doctrine. He reduced human conduct to its ultimate motives of pleasure and pain. His ethics focused on the consequences of conduct, with virtue defined in terms of prudence and benevolence.

Alistair Black (1991) traces the beginnings of the modern public library to the utilitarian principles of Jeremy Bentham and others, aiming at replacing the 19th century's elitism. Utilitarian empiricism stressed acquisition of knowledge through experience, emphasizing teleological, beneficial end-results that also applied to library services. D.E. Gerard (1978, 1983) notes that the liberal influences of Bentham and other utilitarians were not evident in the development of academic or special libraries. He also criticizes the extreme Benthamite view of Nikolas Rubakin for his statistical interpretation of readers behavior, thus overlooking the communicative relationships between the reader and the author.

H.C. Wright (1979) reproaches librarians for failing to distinguish between Bentham doctrine that knowledge is instrumental, and the metaphysical referent to ideas; experience is instrumental to knowing and to communicating what is known, between the physical datum-as-symbol and the physical datum per se.

Shera (1972) considered Bentham's doctrine of 'the greatest good for the greatest number' as a goal that cannot be mathematically achieved.

Relevance:
P: Nominalism maintaining that in communication most words refer to fictitious entities and should be translated into meaningful expressions that refer to real things.
L: Utilitarian motives in developing modern public library. (5 citations)

BERGSON, HENRY (1859-1941)

This French philosopher of Anglo-Polish parentage, developed evolutionary, non-materialistic metaphysics. Evolution, although the basic fact of universe, by itself does not explain anything, it is merely a record of changes. It is caused by an original life force, elan vital, an intuitive efficient cause, directing the activities toward fulfilling their purposes. It is passed from one generation to another through the multidimensional development of individual organisms. Knowledge is a true explanation of material changes and evolution in nature. However, human activities are free from these mechanisms. Basic in them is duration rather than intuition, a specific experience, unique to each individual, expressed in consciousness, matter, time and evolution.

P. Peirce (1951) considers the change, interpreted in Bergson's sense, as the only enduring principle in library philosophy accounting for constant shifts in library functions and scope. This may bring library philosophy into the family of philosophical disciplines.

Relevance:
P: Monism: Elan vital (intuitive knowledge of duration) is the primary aspect of change and evolution.
L: Elan vital as the philosophical explanation of changes in librarianship. (1 citation)

BERKELEY, GEORGE (1685- 1753)

Berkeley, an Irish philosopher of English ancestry was an idealist, an immaterialist, who believed that reality consists of spirits and ideas, and that its physical appearance, the matter, is non-existent, reducible to mental phenomena. In effect, existence means mental perception: 'esse est percipi' (to be is to be perceived). The knowledge of spirit is achieved not through ideas, the passive objects of sense knowledge, but by the active, reflective processes, called by him 'notions'.

Berkeley's focus on the importance of mind influencing perception and the processes of thought and its impact on the subjective, idealistic trends in education. B. C. Brookes (1980a) notes that information blends the monistic, Berkeleyan mental reality with the physical phenomena, thus relating to dualism of physical and mental worlds.

Berekely maintained that the experiences are directly related to the concrete objects; it is difficult, if even impossible to think without concepts tied to our experiences (K.J. McGarry, 1075). Berkeley also insisted that all qualitative properties are equally apparent (J.Z. Nitecki, 1988).

Relevance:
P: Pluralistic Idealist: nothing exists except mind (spirit) and mental entities (ideas); existence make sense only in reference to consciousness.
L: Study of the processes of thoughts and their impact on education and the nature of information. (3 citations)

BERLIN, ISAIAH

I. Berlin criticized the concept of historical inevitability, by stressing the notion of human responsibility which is

incompatible with the deterministic notion of historical predestination. To him subject matter of history is value-charged since human beings are purposive and motivated creatures and not merely causal factors in the development of events. This implies a metaphysical concept of holism of social phenomena considered as autonomous 'wholes', the impersonal entities.

D. Bergen (1980) borrowed Berlin's metaphor of 'fox' representing the pluralistic view in philosophy and 'hedgehog' delineating the position of monists, and applied them to Platonic synthesis and Aristotelean analyzes in the philosophy of librarianship. In criticizing M.H. Harris's historical revisionism, Bergen (1987) acknowledges the advantages of a 'hedgehog' like Marxist's large synthesis as one but not the only approach to view history, and hence he recommends a nonpartisan, open library approach to all ideologies.

Relevance:
P: Philosophy of history - criticism of historical inevitability.
L: Non-partisan library approach to all ideologies. (2 citations)

BERTALANFFY, LUDWIG VON (1901-)

A noted biologist, Bertalanffy was a founder of the Society for the Advancement of General Systems Theory. He envisaged a new, 'natural philosophy', which shifts from linear, unorganized complexity, based on statistical determination of chance outcomes to the issues of organized complexity, based on statistical regularities in socio-cultural systems such as cybernetics, information theory or computer science. The current concept of system approach involves (a) generalization of scientific

concepts, (b) expansion of categories and models in theories about behavioral, biological and social universes, and (c) interdisciplinarity of system models based on isomorphism of their formal structures.

The new philosophy suggests integration and conceptual organization that parallel progressive specialization of modern science, initiating a number of new 'system sciences' such as general system theory, cybernetics, information, decision and game theories. These approaches are either mechanistic, related to the technological issues, or organismic, searching for the principles and laws of organization. (Bertalanffy, 1967)

The General System Theory is a general science of 'wholeness', manifested in many branches of science (J.Z. Nitecki, 1970). "Its subject matter is formulation of principles that are valid for 'systems' in general, whatever the nature of their component elements and the relations or 'forces' between them" (Bertalanffy, 1968, p.37). Its major aims are: integration of various sciences into a general theory of systems that aims at exact theory in the nonphysical sciences, 'vertical' development of unifying principles within sciences, and integration of scientific education (Ibid, p.38).

In education the system approach focuses on teacher effectiveness and student performance; a similar approach is evident in library management's struggle for cost-effectiveness of its operations.

D, Bergen (1965) discusses the implications of General Systems Theory for academic librarianship, by acquainting the library

patron with the means by which the knowledge can be meaningfully organized. Important here is the interplay and mutual feedback between theoretical and empirical components of knowledge, which may have significant implications for the organization of information in libraries and for the restructuring bibliographic access to that information. General Systems approach can also be applied to the revision of library school curricula, incorporating variety of metaphysical and empirical viewpoints by using systems concepts as means for restructuring recorded knowledge. The impact of General Systems Theory on the philosophy of librarianship is also discussed by J.Z. Nitecki (1979).

Bertalanffy's scientific approach based on examining reality as a whole influenced library organization of knowledge and its management (J.A. Boon, 1991).

The librarian does not instruct the patrons what to read nor does he respond mechanically to their requests, but instead identifies all relevant interrelationships between corresponding subjects, structural similarities and differences between different fields. The systems' philosophical approach implies that librarianship is not a close system, an end in itself, but an open system within the context of its environment, dealing with concepts and structures common to the whole universe of knowledge (D.J. Foskett, 1972).

R. Mattessich (1982) considers system thinking as a point of view and a methodology based on it. He distinguishes between system philosophy (ontology, epistemology, methodology), system analysis (mathematical theories and systems models), empirical

systems research (in behavior, laws and systems' simulation) and systems engineering (artificial systems). Bertalanffy's General Systems Theory clarifies and generalizes society's organizational systems.

H.C. Wright (1981) argues that Bertalanffy's system theory was not designed for formal disciplines like history or philosophy. It provided a logico-mathematical system for empirical disciplines. Information science is not concerned with information but with transfer of symbols, the design, production, implementation and control of the electronic systems. In this approach information which is the invisible structure of thought becomes an observable physical function of thought processes.

D.J. Foskett (1973) suggests that the principles of Bertalanffy's General System Theory may be used as the bases for new classification system that would embody the modern scientific and philosophical theories. G. Harmon (1973) sees in Bertalanffy's theory a support for a World Encyclopedias expressed in his unitary concepts based on the isomorphy of laws in different disciplines.

Bertalanffy's 'system theory' considers reality as a hierarchy of organized 'wholes', not as the world of physical particles governed by chance events of physical sciences. In social sciences there is an increased order of social complexity from individuals to societies, each entity contributing to a larger whole with retaining its own individuality - this can be a model for classification (K.J.McGarry, 1976).

Symbolic interactionism was recommended by Shera as an alternative to Systems Theory, because it focuses on communication with other minds through exchange of ideas, rather than just as a physical manipulation of data in the Systems Theory (H.C. Wright, 1984b).

Relevance:
P: General Systems philosophy considers reality as an organized 'whole' environment that interrelates corresponding subjects and structures as open systems.
L: System concept is useful in studying effectiveness in the library management and organization of knowledge, organizing bibliographic access to library records and providing integrating base in library education curricula. (11 citations)

BOHM, DAVID

In 1950's David Bohm argued that any 'proof' in the contemporary quantum theory, cannot preclude formulations of other rules that might have entirely different impact on the present limitations of that theory.

Bohm considered space as a plenum (full) rather than a vacuum (empty), and calculated possible value for the background energy of space, based on the idea of the infinite substructure of matter, extending far beyond nuclear energy. His concept of 'wholeness' refers to viewing everything as a whole, and considering fragmentation of the world into parts as a futile analysis.

In 'the implicated order' every element contains enfolded within itself the totality of the universe, including both matter and consciousness. Both these notions refer to the entire universe and all information within it is enfolded into different

regions of space, similarly to the hologram storing information at all location of the photographic plate (Young, 1987).

D. Beagle (1988) refers to Bohm's model of the holomovement which addresses the fragmentation of research in a multidimensional, immeasurable and undefinable reality. In his new paradigm that underlines wholeness, the 'implicate order of the holomovement' can be utilized as a potential context for theory building in library science. Knowledge is an organic whole, a self-ordering process, comparable to the growth of life itself. Here order balances disintegrating physical force of entropy by negentropic metaphysical universe of human knowledge. Beagle illustrates the distinction between Bohm's implicate order and mechanistic world-view by differentiating between mechanistic definition of books as individual physical units (volumes) and their titles which exist in the context of the abstract aggregates, one title citing another - together volumes and titles represent the totality of knowledge.

"Under the contextual world-view ... libraries are not some negentropic aberration from a fundamental law of cosmic disintegration, but rather are an expression of an integrated law of underlying order ... certain characteristics like the implicate order may be abstracted from it and seen in a variety of phenomena, including libraries" (D. Beagle, 1988, p. 43).

Relevance:
P: Knowledge is defined as an organic whole, a self-ordering process
L: In opposition to the mechanistic interpretation of librarianship, the Implicate Order of the holomovement is suggested as a context of library theory. (3 citations)

BUBER, MARTIN (1878-1965)

Austrian religious existential philosopher who contrasted and analyzed the mutual relationship between the 'I-Thou' (genuine personal relation) with the 'I- It' (partial relationship with the inanimate thing) attitudes. There is a difference between relating to an observed thing or an object and to a person involved in a conversation.

R.C. Benge (1972), followed Bubber's discussion of the nature of identity in a true communion as the 'most important type of communication' and wrote a book based on the existential attitude 'empty of philosophical content'. To Benge the essence of 'I-Thou' relationship, of communication rests on the 'betweenness' in the middle of that relation. L. Estabrook (1973) interprets Bubber's thesis as a study of interaction between knowledge and society based on Shera's social epistemology, that study the nature of intellectual processes in a society achieving perceptive relationships with its total environment.

Relevance:
P: Interaction between society and knowledge.
L: Existential analyses of bibliothecal communication environment. (2 citations)

CARLYLE, THOMAS (1795-1881)

Scottish essayist and philosopher of culture, supporter of German idealism in ethics, politics and economics. In philosophy he followed Kantian distinction between phenomena (as things appear) and noumena (as they actually exist apart from their appearance). He also defined the notion of the true university (Shera, 1965).

Quoting Carlyle that 'the modern university is a library of books', John Adams (1931) argues that librarian is a book specialist, concentrating on book knowledge rather than their content, instructing the patrons about the reading choices and, if needed, serving as a spoon-feeding provider of reading.

Carlyle's notion of the role of book as a preserver of culture, was one of the major influence in shaping the viewpoint of Librarian of Congress, Henry Putnam (C.J. Krieg, 1970).

Relevance:
P: Philosophy of culture: criticism of materialistic industrial society.
Philosophy of history: history considered as a cyclical and progressive unfolding of human capabilities.
L: Definition of the university as library and of the book as the preservers of culture. (3 citations)

CHOMSKY, NOAM

Of particular interest to the philosophy of language is Chomsky's 'generative' or 'transformational' grammar, which differs basically from the modern descriptive linguistics by focusing on explanation rather than description of language. A contributing factor in Chomsky's approach was mathematical understanding of the processes of infinitive use of limited language.

In the study of the language interchangeability, Chomsky pointed out to the importance of linguistic environment, which however by itself cannot serve as an adequate grammar of natural language.

N.J. Belkin and A.Vickery (1985) considered Chomsky's syntax and language competence as one of the important components of understanding conversation. D.J. Foskett (1970) reviewed

Chomsky's rules for explaining the differences between sentences of the same grammatical form in his 'transformational grammar'. That idea suggests the existence of 'deep structures', the syntactical forms that are transformed in everyone's speech into the syntax of their language. Those structures are based on innate relations, which are neither learned nor acquired by experience (D.A. Kemp, 1976).

The theory of transformational grammar was the first attempt to link language with mind. To bring order in the world, human mind needs a principle of inference, which cannot be logically deducted from facts derived from experience alone but must precede it. There are innate properties of the mind that make possible the acquisition of knowledge and belief, at the same time determining its limits and scope. Deep-seated abstract principles, general in nature, determine the form and interpretation of sentences and rules of grammar that make visible the properties of human mind (Shera, 1972).

Chomsky's recognition of an infinite number of writing-systems in any language made an approach to syntax more realistic (J. Mountford, 1973).

Relevance:
P: Philosophy of language: innate properties of the mind govern the acquisition of knowledge.
L: Understanding conversation by studying linguistic structures of language. (5 citations)

COMTE, AUGUSTE (1798-1857)

Comte was French eclectic philosopher, who applied scientific principles to the study of society. He revolted against traditional metaphysics, proposing instead philosophy of history,

which consists of three intellectual and cultural stages of development: (1) theological (in primitive culture reality was interpreted by superstitions and prejudices), (2) metaphysical (explanation is given in terms of impersonal forces and general concepts, unsupported by reasoned facts about reality) and (3) positive philosophy (in which dogmatic assumptions are replaced by observed relationships and their mathematical correlations). Although not a pragmatist, he influenced pragmatists and behaviorists by suggesting the use of science in solving social problems.

Interested in sociology, he interpreted society in terms of social statics (social equilibrium) and social dynamics (social progress). Social statics depends on the balance between selfish and altruistic attitudes of individuals; social dynamics develops from the militarism through juridical to industrial society.

In his discussion of the limited role of specialization in librarianship, A. Broadfield (1949) criticizes Comte for confusing knowledge with what it is; the hierarchy in science proposed by Comte does not equal that in nature; any classification is justified only for the special, restricted purposes.

On the other hand, J.P. Danton (1973) recognizes Comte as one of the predecessors of comparative studies and comparative librarianship. Comte's argument for scientific principles in the study of society contributed to the recognition of racial, climatic and political differences between cultures by comparing different stages in the development of human society.

M.Glossop (1978) raises an epistemological question concerning the nature of subjective knowledge about librarianship. His own approach is based on phenomenological philosophy, which opposes Comte's positivism for subjecting all phenomena to invariable natural laws.

Comte disparaged all speculative knowledge as metaphysics, insisting that the true knowledge or science be confined to the study of nature or of human nature (Shera, 1972).

He defined the fundamental order of knowledge as a decreasing generality and increased complexity, coincidental with historical development. He also raised the importance of social science by maintaining that its methodology does not differs much from other disciplines. For this view he is considered the father of Sociology. Comte recognized three stages of intellectual advance: theological, metaphysical and scientific; each is important antecedent of the others. His views influenced the pattern, structure and conceptualization in classification (Shera, ibid).

Relevance:
P: An evolutionist: Philosophy of history developed through theological, metaphysical and positive philosophy.
Philosophy of social sciences: Society defined in terms of social equilibrium and social progress.
Positivism: Rejection of metaphysics and reliance on science
Relationship between nature of subjective knowledge and philosophy of library information science.
L: Application, with reservation, of Comte's classification of knowledge to library classification. (4 citations)

DARWIN, CHARLES ROBERT (1809-1882)

Darwin was the author of the evolutionary, biological theory of natural selection and subsidiary doctrine of sexual selection. Darwinian social theory of society is based on the struggle for

existence, characterized by egoism, competition and power supremacy. Social selection follows natural selection. In ethics 'might makes right', although Darwin also maintained that sympathy and mutual support, together with supportive language, are favorable for survival and can be used as criteria in judging human activities.

His impact on the philosophy of pragmatism was in his empirical proof of a cosmological theory that nature's operations are in a form of developmental processes. This approach opposes Platonic concept of essence and universals, stressing gradual Becoming, (not the absolute Being), and considering reality as an open-ended process with no fixed end. But probably the most original contribution of Darwin is by interrelating his empirical data in a coherent, comprehensive, logical system. It is a theory of 'pangenesis', transmission of hereditary characteristics (Young, 1987).

Darwin was one of the first people to treat emotional communication in a systematic way, expressed among others by facial expressions - issue of value to reference librarians (K.J. McGarry, 1975). He regarded poetry and music as 'intellectual knowledge', basic in the sense that if lost, they would be injurious to the intellect (F.Machlup, 1980).

The work of Darwin revolutionized the scholarship, bringing drastic change in man's knowledge of himself and his place in the universe. His approach was thoroughly based on research, his mind working as a machine grinding general laws out of large collection of facts (Shera, 1972). His interpretation of research consists of analysis (similar to an artist dividing a problem into parts) and syntheses (an artist puts it together) (Shera, 1976).

Functional equivalence between biotic and organizational systems is described by A.J. Fedanzo (1986) in terms of Darwinian evolution. Organizational genetics, based on this theory, offers a synthetic view of human activities, and of change provoking forces.

Computerized data management provides for an insight into the organizational data model in which information structure contains the form, the content and procedural rules for data handling and processing. Fedanzo (ibid.) maintains that genetic material in organisms and the content of data model are functionally equivalent; both are basically information structures that direct the ontogenesis and behavior within each system. Here, information is equivalent to genetic material, which, among other functions, provides information that is needed for preserving generational continuity. Data model contains information necessary for replication of basic organizational structures and for description of organizational history and operations of an organization. In information theory Darwinian selection describes a creative process of positive feedback, supporting or

suppressing negative feedback in the random selection of information processes.

Pansegrouw, J.G. (1988) compares Darwinian theory of natural selection with Piaget's theory of information-seeking behavior. He prefers the Piaget theory for its focus on cognitive structure, and criticizes library information science for accepting Darwinian model, overlooking its ambiguity in not accounting for intellectual freedom within the concept of social responsibility.

L.B. Heilprin (1991) in his discussion of necessary and sufficient conditions for survival of librarianship refers to Darwin's observation that species with variations are better equipped for changing environment. Thus, animals with nervous-brain systems impose mental design on a material object; and man survives more by changing his environment than by changing his body (i.e., the concept of 'artificial evolution' that shifts from Darwin's 'decent' to Bronowski's 'ascent'). Heilprin lists research on the fundamental processes in transmitting recorded knowledge as one of the essential functions of information science.

Helmut Arnts (1983) in his 'palaeology of information' stresses the desire for 'being informed' as a necessary aspect of survival that is evident in a process of acquisition, storage and conceptualization of information. This, he claims, counterbalances natural law of Darwinian selection.

M. L. Blake (1985) sees a converse of Darwinian evolution in the fact that today's fitness depends on information technology.

It is a 'cultural evolution in space through competition for time' (Ibid., p.125).

Attempts are made in contemporary literature to update Darwinian approach by suggesting a notion of 'survival of the wisest'. In it, 'wisdom' is considered an equilibrium between metabiological acting of individual aggressiveness and passivity and his desire to conquest and coexist, both bound in individuals' metaphoric mind (Salk in J.Z. Nitecki, 1988).

Scientists are still trying to complete the pattern in classification of species started by Darwin. Among the library classification systems, the strongest Darwin's influence was on James D. Brown's system based on the notion that every science or art springs from some definite source: first there were matter and force that gave the rise to life, which in time produced mind, ending in the production of information records. Others influenced by Darwin were: Cutter (principle of expansion), Melvil Dewey's and Library of Congress classifications. Overall, library classification system was born in the 18th c. and matured in the 19th c. Darwinism as a process was suggested as possible library research methodology (Shera, 1965).

Relevance:
P: Evolutionism: Theory of biological development through natural selection and social struggle for survival.
L: Importance of variation in changing library environment. (12 citations)

DEMOCRITUS OF ABDERA (c.460 BC- 370 BC)

The materialist philosopher, Democritus explained the universe in mechanistic terms. He maintained that all substances consist of invisible and indivisible atoms. Their forms determine

the material qualities, the finest of them constitute the substance of mind. In perception, tiny copies of sensible things (eidola) impact mind's atoms, leaving impressions in memory. Living in the realm of appearance, people should aim at maximizing their happiness.

Aristotle considered Leucippus, the contemporary of Democritus, as the founder of atomism, crediting Democritus for developing the supportive epistemology and detailed application for that theory.

H.C. Wright (1986) briefly reviewed the history of philosophy in terms of everlasting struggle between physical and spiritual (formal) viewpoints, initiated by an early Greek distinction between Being (Parmenides totality of existence) and Becoming (Aristotelean movement or change). Leucippus and Democritus combined atomic model of matter with physical atoms moving freely in space, their combinations differing quantitatively. Other scholars suggest that Leucippus and Democritus replaced Parmenides monism with the materialistic concept of change, which presupposes the Non-Being (not the Being) and substituting the notion of space continuity by its discontinuity, the foundation of atomic structure of substance.

Relevance:
P: Materialistic view of universe as a mechanistic structure.
L: Mechanistic interpretation of library purposes and operations. (1 citation)

DESCARTES, RENE (1596-1650)

Descartes, a French rationalist is considered one of the fathers of modern philosophy. His approach, called Cartesian

philosophy, was based on the process of doubting any ideas that would not satisfy his criteria of clearness and distinctness.

His method was rationalistic and geometrical, his goal the reconstruction of the knowledge by the application of a rational, deductive system.

Descartes distinguished three self-evident kinds of ideas: (1) innate, expressing the power of the thought, (2) adventitious, coming from the external world, and (3) factitious, created within individuals' own mind. He also identified three kinds of substance: (a) created by God souls of each individual, (b) All-Good, All-Powerful spirit and final cause (God), and (c) independent of human thoughts, physical substances (body). To him, the first reality is the intuitive notion of thinking itself (cogito ergo sum).

Descartes major influence on modern philosophy was his dualistic separation of idealistic concept of mind (the human mind contemplating the ultimate reality of ideas) from materialistic, mechanistic notion of matter (characterized by divisibility and laws of motion, interpreted in mathematical language).

He considered form as a Platonic and Aristotelean concept of abstract, nonphysical, metaphysical entity. His effort to unify the mind-body dualism met with strong cultural opposition (Young, 1987).

J.P. Menzel (1972) criticized this matter-mind duality as a base for the contemporary mechanical interpretations in natural sciences and in librarianship.

Colin E. Cherry (1952) lists Descartes among the philosophers who contributed to the communication of information by his compression of mathematical information and his anticipation of an artificial language and a computing machine.

A. Robson (1976) considers Baconian challenge of traditional Descartian deductive philosophy as a major factor in the intellectual and philosophical bases for Industrial Revolution, and its consequent impact on the social role of librarianship.

F. Suppe (1985) argues for the neutral language, free of communication noises, by expanding the concept of the communication channel to include the recipient's cognitive and neurological processes. According to Descarte and Locke's postulates, the end product of perception in these processes is free of noise.

In discussing historical background for the development of the concept of automata in cybernetics, M. Eden (1983) considers Descartes' mechanistic view in which all functions of the machine are interpreted as imitations of real human being, as automatons that follow the principles of movement.

Descartes often used mechanical analogies in describing the work of an organism (G.Harmon, 1973). He maintained that 'any knowledge that can be questioned ought not to be called science' (F. Machlup, 1980).

Although 'I think therefore I am' can be ridiculed by saying 'I think I think; therefore; I think I am' (Ambrose Bierce), his dictum stresses that the power of thinking is a distinctive

characteristic of human capacity to generalize and to reason (Shera, 1976).

Relevance:
P: Dualist: Separation of the idealistic concept of mind and materialistic, mechanical notion of matter.
Rationalist: Emphases on the power of human thought.
L: Anticipation of the theory of information and cybernetics.
(9 citations)

DEWEY, JOHN (1859-1952)

As a major American philosopher and father of experimental, instrumental pragmatism, Dewey influenced many fields of philosophy and education. His pragmatism is a theory of meaning and truth (hypotheses that works), presented as a body of flexible doctrines. His experimentalism refers to the process of inquiry, the testing of ideas to eliminate pseudo problems. Operationalism is a form of predictions formulated as 'if-then' propositions; if the operation is carried out, given proposition has a meaning, and if the prediction of its consequences is realized, that proposition is true and has 'warranted assertibility' or probability. Dewey's instrumentalism relates to his earlier evolutionary philosophy influenced by biological rather than physical or social sciences.

Dewey considered life as a movement, a process of continuous reconstruction in thoughts and in practical activities. The issues and problems change with time and are solved or outgrown by other issues. The processes of issue-solving consist of clarification, search for alternative solutions, evaluated by their consequences and checked by immediate experience. The quest for certainty is futile because of its endlessness; thinking

(solving problems) is only one of many functions in life, an instrument for living, not an end in itself. Logic is a methodology aiming at the discovery of truth.

Dewey maintained that relationships between an individual and society must be balanced ('transactional interrelationship') through democratic and educative social conditions. Individuality is 'the interplay of personal choices and freedom with objective conditions'. Sociality is a medium conductive to individual development.

The philosophy of education is the formation of ideas about an environment appropriate for addressing contemporary problems. It recognized the psychological characteristics of an individual and sociological needs of the society. Together they are directed toward freeing and facilitating the growth, by expanding the capacity to learn from experience (an 'end in view'). "The outcome, the abstract to which education is to proceed, is the interest in intellectual matters for their own sake, a delight in thinking for the sake of thinking" (J. Dewey in J.Z. Nitecki, 1988).

- Major contributions;

Dewey's major contributions include: (1) in logic a naturalistic explanation of pragmatism; (2) in methodology scientific method applied to all types of inquiry; (3) in ethics use of quantitative standards of ethical evaluation; (4) in religion an opposition to all dogmatism and consideration of good as a unified ideal; (5) in education the importance of the student; (6) in art its integration in life, a progressive

discipline; (7) in biology evolutional philosophy; (8) in social philosophy rejection of authoritarianism; (9) in politics pluralism, rejecting government power and advocating cooperation; and (10) his instrumentalism stressed change vs. status quo.

(a) Thinking/reasoning processes.

Dewey said that "thinking is a reconstructive movement of actual contents of experience in relation to each other." That is, the awareness of one's past is for an individual an essential part of the reasoning, the thinking (Shera, 1973).

In the production and enjoyment of poetic perception knowledge is transformed, it becomes more than knowledge because it merges with nonintellectual elements, forming experience worth experiencing (F. Machlup, 1980).

(b) Learning processes.

Dewey proposed a theory that 'language, signs and significance come into existence, not by intend and mind, but by overflow'. We cannot explain satisfactorily how vocal articulation dissociates itself from their original expressive values and are stereotyped into conventional symbolic pattern with consistent and universal meaning. His educational philosophy is a reaction against domination of print in the education of the child based on traditional educational curriculum. To him education is a problem solving experience, preparing individual to new challenges. He advocated including in the curriculum everything that may help solves the problems. This approach was reborn during students' revolution of late 1960's. Dewey's educational philosophy focused on the process of learning, continuity of experience and

institutionalization of universities with the departmental focus of power. The full truth can never be known since knowledge requires constant revision of approaches (Shera, 1972).

(c) Interpretation of science.

According to Dewey the source of human science is as wide as knowledge itself. His definition of science as a methodology or a thought process rather than a specific subject was the stimulus for considering librarianship as an applied science, using findings of many other disciplines. However, since little of the research was so far done, the profession is not yet a science. The empirical thinking, according to Dewey, cannot discriminate between correct and incorrect conclusions and have little capacity to deal with a new situation. Dewey's definition of science was accepted by Waples in his approach to librarianship as an interdisciplinary field; but also criticized by Thompson for its supposedly narrow conception of systematic method of inquiry' and 'facts' thus weakening librarians' appreciation of books and people (S. Karetzky, 1982).

(d) Philosophy of a profession.

Dewey maintained that knowledge is classification; it is not just an awareness of events but of events-with-meaning. Cognition is recognition, hence likeness (a relation) rather than existence is central. Having meaning is a prerequisite of knowing. The paradox in professional education is to reconcile John Dewey's pragmatism with Cardinal Newman self-sufficient search for intellectual excellence (C.H.Rawski, 1973).

Dewey's principle of autonomy of inquiry implies its interdisciplinarity; it is not incompatible with the mature interdependency of different disciplines (Ibid.).

Helen E. Haines (1946) argues that every profession is characterized by having a discipline (a system of training), ethics (rules of conduct and moral obligations) and philosophy (a vision). Such a philosophy is personal, based on one's own thoughts and experiences. "Life without it" - she quotes John Dewey - "must be a different sort of think from life with it. And the difference which it makes must be in us" (p.851).

(e) On philosophy of librarianship.

J. Bekker (1976) quotes Dewey's definition of philosophy as applicable to the philosophy of librarianship: philosophy as the theory of a subject-matter as a whole or as organized unity, containing some binding principles and harmony between theory and practice.

Cyril O. Houle (1946) defines librarianship as a unique discipline based on Dewey's pragmatical philosophy of education as a process that aims at change of people's skill, knowledge, attitudes and understanding, allowing them to formulate their own suitable social and personal goals. Good educational experiences must be based on a continuous interaction between library patrons' personal needs and purposes and the goals of the community served by the library.

Houle (1946a) argues in the spirit of Dewey's pragmatism that such a philosophy of librarianship must be practical, normative, not theoretical or descriptive and meaningful only in terms of

its operations. Its objectives are educational, informational and aesthetic. Similar view is expressed by Iben (1936) who argues for the philosophy of librarianship based on Dewey's educational theory. Dewey's philosophy of 'learning by doing' was advocated by Douglas Waples, who, like Dewey, was concerned more about learning as a process of new discoveries than as assimilation of old theories (Ch.I. Terbille (1992).

A. D. Carlson (1990) notes that basic in Dewey's philosophy is the concept of experience as 'learning by doing', defined as a cooperation between an individual and his or her environment. This philosophy is relevant to library education by relating library teachers personal experiences and philosophy to their method of teaching. Since the interpretation of human needs is always an abstraction of concrete experiences, J. Dewey, the pragmatist, advocated intellectual approach to practical reality, liberalizing practitioners' intellectual horizons, at the same time advising intellectuals to apply their intellectualism to practical ends (J.Z. Nitecki, 1988).

(e) Instrumental uses of libraries.

In his discussion of the 19th century 'instrumental' use of libraries, V. Jelin (1970) distinguishes between his use of the term 'instrumental' from that of Dewey. First he differentiates between the existential, humanistic emphases on the input (acquisition, organization and preservation of library material, i.e., the input, programming and storage respectively) and the 'instrumental', scientific and technological output (aiming at solution of concrete problems and exploration of unknown needs of

library patrons). Both approaches are meaningful sociologically, each reflects the particular intellectual needs of the society. However, the meaning of the term 'instrumental' is here restricted to industrial libraries that support specific needs of their organizations. Dewey's instrumentality refers to the character of thoughts or information, which is instrumental, if it resolves conflicts. Hence it is not just a static mode of knowledge, but a dynamic aspect of integrated, efficient thoughts, based on logical and epistemological principles.

Relevance:
P: Pragmatic theory of meaning and truth; experimental processes of inquiry; operational 'if-then' propositions; instrumental evaluation of ideas in terms of their usefulness in explaining changes and satisfying needs and purposes.
L: Instrumental use of libraries in resolving intellectual and practical issues. (15 citations)

DURKHEIM, EMILE (1858-1917)

A French philosopher representing sociological positivism, Durkheim emphasized collective consciousness expressed in impersonal, non-subjective group mind, superior to human mind. He rejected absolute metaphysical or theological presuppositions. Social values and moral ideas are the reflections of the individual community; since no two communities are the same, their moral and ethical standards of goodness or beauty differs.

Durkheim was interested in the psychological effect of social change on individual, which in turn impacts on the personal and impersonal relations in communication (K.J. McGarry, 1975).

H.C. Wright (1982) objected to the philosophy of librarianship based on Durkheim's contention that the laws of society do not

differ from these governing nature and that the methods used to discover them are identical with the methods of other sciences.

Relevance:
P: Positivistic notion of collective consciousness, and impact of social changes on individuals and communication.
L: Objections to library philosophy that is based on similarity between natural and social laws. (2 citations)

FRANKLIN, BENJAMIN (1706-1790)

An America politician whose philosophy was based on relevance of traditional values and Aristotelean belief in government social role. Franklin was a scientist involved in scientific experimentation with electricity, deist and moralist, popular not only in United States but also among contemporary European philosophers. His aphorisms expressed the philosophy of life for many people, advocating the conduct that would make possible a prosperous and meaningful life by following earthly virtues of thrift, hard work, diligence, prudence, moderation, honesty and shrewdness.

Franklin believed in individual initiative as a necessary 'engine of progress' with government based on citizens consent. "His essential faith was that, from tradesmen's juntas to the court of Versailles, good men working together could improve the condition of mankind" (The Encyclopedia of Philosophy, 1967, vol.3, pp.220-221). The 18th century social library of Benjamin Franklin lead to the establishment of a free public library in the next century (J. Cushman, 1960).

Shera discussed Franklin's organizations aimed at self-education by providing forum for discussion of discoveries

resulting from observations, experimentation and debates about theories and philosophies (Shera, 1949).

His social libraries were the only institutions attempting to meet popular demand for books for nearly a century (J.Thompson, 1977).

Relevance:
P: Political philosophy defining social roles of the government.
L: Free library as a model for American Public library system offering self-educational opportunities. (3 citations)

FREUD, SIGMUNT (1856-1939)

Founder of the Psycho-analytic school, Freud focused on the interpretation of neuroses by applying free association, dream interpretation, and hypnotic method of treatment. His psychological theory was based on the predominance of sex, conflicts and repressions, the influence of infantile period and their impact on subconsciousness of forgotten memories and suppressed desires. Freud's theory had major influence on the 20th century popular culture, religion and ethics.

R.J. Howard (1982) discussed the impact of Freud's symbol-deciphering method on Marxism.

Relevance:
P: Psychological theory of subconsciousness, sexual drives and psycho-analytical methodology of free association with subconscious minds as a repository for the suppressed thoughts.
L: Major impact on the 20th century popular culture and its records. (1 citation)

GALILEO, GALILEI (1564-1642)

An outstanding scientist and major inventor of his day, Galileo's philosophical contribution was in developing a scientific description of the universe based on the mathematical

interpretation of the structures and operations of the physical world verified by empirical observations. He liberated science from theological support of Ptolemean astronomy and Aristotelian concept of 'facts of reason' by developing 'facts of empirical research'. M. De Mey (1984) pointed out to the significance of grasping the dynamics of simple conversations, such as Galilean dialogues, in the discourse between the librarians and their patrons.

Galileo aphorism, 'the book of nature is written in characters of Geometry' implied that modern science is based on the notion that all laws are mathematical in nature (Young, 1987).

The attitude of Church toward Galileo illustrated probably the first attempt to control the dissemination of scientific knowledge. Galileo's writing in vernacular Italian language made his ideas popular, placing the Church authority at risk (D.A. Kemp, 1976).

Relevance:
P: Philosophy of science describing universe in mathematical terms, verified by empirical observations and substituted Aristotelean 'facts of reason' by 'facts of empirical research'.
L: Example of censoring dissemination of scientific knowledge by society and church. (3 citations)

GANDHI, MAHATMA (1869-1948)

A major representative of modern Hinduism, Gandhi was defending the truth of all religions and claimed that Hinduism provides the most satisfactory synthesis of all religious philosophies. As a reformer, he addressed traditional biases against untouchability and class divisions. He offered himself as an example of proper interpretation of the ancient Indian concept

of ahimsa, the teaching of nonviolence. His impact on the contemporary political and social philosophy was extensive.

R.L. Mittal (1969) considers Gandhi a pragmatic democrat, who strongly believed that knowledge is above religion, cast, creed, race or nationality. In one of his speeches, in 1933, Gandhi identified a number of principles for the organization and administration of libraries. Their essence is that everybody, especially poor person, should be given free and adequate library service.

Relevance:
P: In philosophy of religion knowledge is above religion.
L: Provision of free and adequate access to libraries by everyone. (1 citation)

GOETHE, JOHANN WOLFGANG VON (1749-1832)

German poet and scientist, interested in occult philosophy and religious mysticism. Not a systematic philosopher, Goethe adapted in his writings these aspects of philosophy that best fitted his literary expressions of feelings and intuition. Thus he was interested in Spinoza's determinism and non-theological philosophy but replaced his mathematical method by own imagination and intuition. Goethe's mystical interpretation of nature was akin to Schelling's philosophy, and his view of animated nature and optimism resembled Leibniz's monadology. He applauded Kantian notion that art mediates between nature and freedom, but objected to Kant's interpretation of knowledge in terms of reason, understanding and sensibility, preferring his own reliance on imagination and intellectual intuition.

F. Grasberger (1952) favors Goethe's model of librarianship, in which routine library administrative tasks are the prerequisites to the more professional, intellectual activities. Young (1987) quotes Goethe's motto, 'Connect, only connect'.

Relevance:
P: Idealistic occult philosophy and religion stressing primary role of intellectual intuition in understanding reality.
L: Library routine administrative tasks are prerequisites for intellectual activities. (2 citations)

HARTLEY, DAVID (1705-1757)

An English physician, Hartley was a founder of the associationist school in psychology. This approach is based on connections between different aspects of sensations in consciousness, especially the natural, single, simultaneous associations and acquired, reinstated, successive ideas.

C.E. Cherry (1952) refers to Hartley's contribution to the communication theory by defining information as the successive selection of symbols and by rejecting the concept of 'meaning' as a subjective factor.

Relevance:
P: Association psychology focusing on connections among ideas in consciousness and assuming that all mental states consist of unique, simple and irreducible elements.
L: Information is defined as a successive selection of symbols in communication. (1 citation)

HEGEL, GEORG WILHELM FRIEDRICH (1770-1831)

Major philosophical themes of this German modern idealist were: (a) the concepts of real and rational are complementary, evolving processes, (b) universal, rational will (mind) interrelates in a logical system all basic principles of morality, law, ethics and social institutions, (c) logic is identified with metaphysics,

(d) organization and changing events are the sources of values, (e) freedom and liberty are integral part of orderly set of events, (f) the doctrine (an expression of the method) and the method (dialectic formulation of the doctrine) are logically inseparable.

Hegel system consisted of three major elements: logic, nature and spirit. In logic (interpreted as change, development and movement) the triadic dialectic consists of the theses, antithesis and synthesis and is possible only within factual systems; contradictions cannot be resolved by dialectics because they are abstract concepts. Nature is the opposite of Idea, reflecting the difference between value and facts; both are interrelated in the final synthesis. The final stage is the Absolute Spirit, its manifestations are evident in the historical development of culture, aiming at completion and wholeness. In this process history develops in a dialectical, rational manner.

Hegelian notion of reality as the categories of mind interprets knowledge as the intuitive connection between sense-experiences and abstract ideas about them. It is the expression of conceptual tradition in philosophy as well as an essential aspect of conceptual level of metalibrarianship (J.Z. Nitecki, 1968).

The function of philosophy is to understand the reason in the universe. Thinking is an inductive process of interrelations, knowledge is the system of concepts, and the truth is the never fully understood totality.

In education, Hegel maintained that everybody must go through the stages of cultural evolution, learning from the past how to understand heritage and its process.

J. M. Whitehead's (1980) humanistic method resembles, to some degree, Hegelian dialectical philosophy. He beliefs that philosophy can be done only by doing it, and similarly, the philosophy of library and information science cannot be defined, but it can be done. Whitehead accepts the principle that the meaning of experience is reason and the meaning of reason is experience.

Major weakness of Hegelian philosophy is its glorification of the state's mythical mission at the expense of an individual.

E.E. Graziano (1955) pointed out to the Hegelian impact on the subject classification, based on his logic and metaphysical theory of reality and knowledge. In his 1975 essay Graziano posed a number of questions about the meaning of major library concepts based on the Hegelian notion that all fundamental issues are related to the definition of the identity as the entity under consideration. Since questions such as 'what is the book, a library or information science', cannot be answered within the language-operational convention; Graziano calls for a reexamination of the fundamental premises of library science based on language-operational Gestalt.

Hegel's classificatory schematism considered the whole of reality as the Absolute Idea, of which all concepts, phenomena and sciences were part. He achieved that synthesis and unity

based on the metaphysical rather than natural and empirical approach (Shera, 1965).

Hegel viewed history as a manifestation of the dialectical movement of the World Spirit (K.J. McGarry, 1975).

R. Capurro (1991) defined information science as a rhetorical discipline, based on Hegelian formal-methodological and cultural-historical philosophy.

D. Bergen (1987) in his reproach of Michael Harris dogmatic approach to the philosophy of librarianship, is critical of Hegelian indirect influence on Harris' formulation of library theory. Harris argument, Bergen claims, is based on Hegelian Marxist opposition to pluralism. It is reflected in the library neutrality toward group interests, and to positivist epistemology, responsible for librarians apolitical attitude, justified by the concept of intellectual freedom.

Relevance:
P: Idealist view of reality as a living, evolving process defined by dialectical processes.
L: Impact of Hegelian philosophy on the subject classification based on his logic and metaphysical theory of reality and knowledge. (8 citations)

HEIDEGGER, MARTIN (1889-1976)

A student of Husserl's structural analysis of pure consciousness, Heidegger proposed new, existential approach to philosophy by providing phenomenological analysis of human existence in its temporal and historical context. He embraced idealistic philosophy of man as a creative worker, and considered consciousness as 'concern' about or 'dread' of the world. He

analyzed the conceptual meanings of individual phenomena independent of the problems of reality and knowledge.

Two books reviewed by librarians are critical of the influence of Heidegger's philosophy. S.L. Fesenmaier (1988) strongly objects to Allan Bloom's The Closing of the American Mind theses, by calling Bloom 'the American 10th rate Heidegger'. Patrick Wilson (1994) equally strongly criticized M. Heim's The Metaphysics of Virtual Reality (1993), which discusses Heidegger's view on technology, by referring to his concepts of finitude, temporality, and care. To Wilson, Heim's philosophical references are ornamental, anachronistic and hyperbolic, presented in the 'pop philosopher' style.

Relevance:
P: Phenomenological analysis of human existence in its temporal and historical context.
Existential need for 'destructive' analysis of traditional philosophy in order to regain the insight into metaphysical reality.
L: Existential approach to philosophy of librarianship.
(3 citations)

HERACLITUS OF EPHESUS (ca 536-470 BC)

Heraclitus, 'the philosopher of change', maintained that everything is in a constant flux; nothing is, only change itself ('Logos') is real. 'All things flow, nothing abides. Into the same river one cannot step twice'. Everything is in a process of continuous passing away, and only the orderliness of the succession of things remains the same. The moral ideal is the rule of reason.

Heraclitus represented sensualist position that all is being, and everything except change is illusion (H.C. Wright, 1986).

His remark that 'one cannot step into the same river twice' points to the irreversible aspect of communication (J.K.McGarry, 1976).

Relevance:
P: Rationalistic view that there is no one permanent reality, everything is changeable.
L: Irreversibility of communication. (2 citations)

HOBBES, Thomas (1588-1679)

Hobbes held that form is a wholly physical or material phenomenon.

Hobbes followed Bacon in distinguishing historical and descriptive knowledge from the theoretical and philosophical. He carried the principle of binary division, and was the first to approach the order of modern science (Shera, 1965).

Relevance:
P: Materialistic view of humans as machines.
L: The principle of binary division. (1 citation)

HUME, DAVID (1711-1776)

At one time a librarian, Hume was famous for his questioning of many rationalistic assumptions and criticism of Idealism. An Empiricist, he focused on the sensory content of experience, reducing it to irreducible impressions of senses and their images, the ideas. There is no mind, only series of interrelated perceptions, 'the bundle of impressions and ideas', interrelated in memory system by resemblance, causality and succession. Thus, knowledge is created by a comparison of ideas, based on intrinsic resemblance between them. Explanation is considered in terms of Aritotelean association of ideas by similarity and by contiguity. No facts can be proven a priori; existence is not a

predicate, property or attribute, but what we think it is. Morality is based on the naturalistic principles of mental habits and social customs, such as e.g., self-interest or altruism. However, Hume was unable to reconcile the paradox of sensible world with the logic of human thought.

Hume was the first to raise the problem of induction, by arguing that the conclusion of inductive argument always implies a prediction. Yet, the fact that something happened in the past, irrespectively of its frequency, does not mean that it will happen again in the future (D.A. Kemp, 1976).

The concept of modern public library emerged from David Hume focus on utility (A. Black, 1991).

Relevance:
P: Empiricism focusing on sensory content of experience. Knowledge is created by a comparison of ideas, based on intrinsic resemblance between them.
L: Concept of utility suggested as a base for the public library. (2 citations)

HUSSERL, EDMUND (1859-1938)

Husserl, the German philosopher, redefined the concept of phenomenology as a system. His definitions of the term went through several evolutionary changes from defining it first as a descriptive analysis of subjective processes, later as the eidetic science of material essences exemplified in subjective processes, and finally as the eidetic science of transcendental subjectivity. (Eidetic stands for an idea or image that constitutes the essence of things). In all of these definitions, however, phenomenology was always interpreted as a science of the subjective with its intentional objects, as transcendental and

constitutive eidetics. Phenomenology focuses only on immediate data and is detached in consciousness from all preconceptions and natural facts.

Husserl considered thought independent of the processes producing them, bypassing the distinction between matter and mind as unrelated to the pure phenomena of experience.

Recognition of the importance of subjective knowledge by Husserl provided impetus for the non-quantitative, qualitative, phenomenological approaches (M.Glossop, 1978).

Indirectly, C.H. Rawski (1973) related Husserl's definition of scientific objectivity to librarianship. The definition reflects the growth of the discipline, its relations to other disciplines and its influence on the course of future inquiry within that discipline. But the limits of any discipline cannot be determined arbitrarily. The disciplinary sort crossing (based on spurious unity) is based on misinterpretation of the subject matter of the discipline and may negatively affect the use of methods which are not compatible with its true subject matter.

Relevance:
P: Phenomenological, introspective, descriptive analysis of consciousness; importance of subjective knowledge and independence of thoughts from the processes forming them.
L: Non-quantitative approach to librarianship and subjective definitions of library information science. (2 citations)

HUXLEY, THOMAS HENRY (1825-1895)

An English biologist, Huxley was a strong defender of evolution, and an inventor of the word 'agnosticism' and 'epiphenomenon'(an inconsequential by-product of a process, applied to consciousness). Neither materialist nor idealist, he

accepted with qualification Darwinian theory of gradual modification of species, but felt that ethics cannot be explained by evolutionary naturalism.

Information combines objective and subjective aspects of reality, thus incorporating Huxley's recognition of only material reality (B.C. Brookes, 1980a).

Relevance:
P: The defender of modified evolutionism, maintaining that Ethics is not the subject of evolutionary naturalism.
L: Objective and subjective characteristics of information. (1 citation)

JAMES, WILLIAM (1842-1910)

Major American philosopher and psychologist, known for his pragmatism (resolution of metaphysical issues by analysis of practical consequences), radical empiricism (ideas are reducible to sensations), and neutral monism (fundamental reality is a neutral, undefined, neither mental nor physical, stuff). Reality is always in the making, its description depends on individuals' own preferred philosophy; this view implies pluralism in interpretation of experience and in the structure of the universe. Truth of moral belief is determined inductively by its consequences, and therefore, it is inseparable from human experience. Experience is however, 'double-barrelled': there is the actual experience and there are things that are experienced.

G. Dunbar (1972) cites W. James' distinction between life and dead hypothesis, the former appeals to people, the latter does not.

In order to know we structure. "The subjective reason explains outer frequency by inward structure, not inward structure by outer frequency" (quoted by C.H. Rawski, 1973).

James distinguished between 'knowledge-of' (by acquaintance) and 'knowledge-about' (by systematic study and reflection) (F.Machlup, 1980).

Possessing ideals is not enough by itself (e.g., librarians' defense of freedom), but there is a need to be able to defend them by organizing the defence of freedom (Shera, 1873).

W. Kerr (1920) thinks that James philosophy is applicable to librarianship. Its workable principles will induce results based on logical and moral approach, which implies faith in ourselves, our work and people we work with. The moral and intellectual enrichment of the mind is important in librarians' educational activities.

According to James, all things, including civilization, are held together by names; without them and name-givers we would have chaos. Thinking is a process of chain responses, its 'thinking to oneself'. His and Dewey's pragmatic philosophy of education are based on the assumption that we will never know the truth, and will always revise its approximations. Hence, philosophy is based on obedience to facts and hospitability to changes (Shera, 1972).

James applied his pragmatism to the problems of classification and nomenclature: concepts are created by human in pursuit of some end endowed with names suiting these purposes. These concepts became fixed and immutable in the thought process

of the human intellect. There is no property absolutely essential to any thing; the essence of any one thing is that which gives it a name - the name stands in mind for what the thing actually is. Hence Shera suggests that by accepting James approach, every library classification would be based on properties rather than essential aspects of the things. And since the same properties may be shared by different objects, they can serve as common axes to clusters of related schemes and as bases for cross-referential classification (Shera, 1965).

H.C. Wright (1984b) criticizes James' philosophy for its anti-intellectualism.

Relevance:
P: Pragmatic resolution of metaphysical issues by analysis of practical consequences. Pluralistic concept of reality depends on individuals' own preferred philosophy.
L: James philosophy suggests classification of library material by its property rather than contents. (8 citations)

JEFFERSON, THOMAS (1743-1826)

An advocate of democracy and liberal philosophy, Jefferson drafted the Declaration of Independence, and served as the third president of the United States. In political theory he opposed centralization of government power, supported free speech, education, tolerance and religious freedom.

Jefferson promoted diffusion of knowledge as the best device for the preservation of freedom and happiness (good vs. discouraged 'dangerous' knowledge) (F.Machlup, 1980). He also encouraged the support of state universities as a service to the society (proposal for the University of Virginia) (Shera, 1972).

According to M.H. Harris (1976a) the history of American librarianship can be seen as a cycle of recurring philosophies. In early thirties, philosophy of librarianship was the reintroduction of Jeffersonian intellectual freedom and neutrality, retaining conservative views in politics and social attitudes. Harris argues (Harris, 1977) that the methodology of the studies of library history should reflect the Jeffersonian-Jacksonian-Rooseveltian, liberal, progressive continuum.

Putnam was strongly influenced by Jeffersonian concept of democracy, which requires treating each library patron as a unique individual by providing equal opportunity for education and scholarship to everyone (C.J. Krieg (1970). It was in Jeffersonian tradition, that library services were extended from serving elite to working people (D. Bishop, 1976).

The Library of Congress was restarted by purchasing Jeffersonian library. Jefferson advocated creation of small circulating libraries to educated citizens for learning how to protect their own rights (J.Thompson, 1977).

Jefferson's classification of his own collection was based on Bacon's system, and later was accepted with modification by Library of Congress (Shera, 1965).

Relevance:
P: Political philosophy promoting democracy, small government, free speech and religious tolerance. Promotion of diffusion of knowledge as a means for democracy.
L: Support of public education, providing a prototype for Library of Congress classification. (8 citations)

KANT, IMMANUEL (1724-1804)

Kant was a German tutor, under-librarian and a professor of logic and metaphysics. His philosophy is called variously as (a) critical idealism (theory of knowledge), (b) criticism (study of the nature and limits of reason and knowledge free of dogmatism and skepticism), (d) transcendentalism (superiority of intuitive over empirical approach) and (e) transcendental idealism (knowledge of the external world is obtained by transcendental unity, 'logical ego', of apperception).

Kant's central issue was the nature of presuppositions of experience and the capacities and limits of human reason. Metaphysical questions addressed by him included: (a) 'How are a priori synthetic judgments possible?'. (Universal judgments add to our knowledge but cannot be validated by experience). (b) 'What can I know? (Follow rules accepted by everyone and ask no privileges). (c) 'What ought I to do?' (Prescription: give others the rights you claim for yourself). (d) 'What may I know?' (all knowledge relates to experience, but not all is derived from it. Experienced knowledge conforms to the structure of thought; a priori knowledge makes experiences intelligible). (e) Is metaphysics possible? (There is no possibility for the science of metaphysics, but the pure reason, the theoretical knowledge, points to things-in-themselves, which we cannot know from experience, but only how they appear under a priori form of reason; we know them as phenomena). (f) 'What is aesthetic judgment?' (The harmony of an object of cognition with the forms of knowledge; the compatibility between Nature and freedom). (g)

'What is the natural purposiveness of Nature?" (Not necessarily a real attribute, but a priori, heuristic principle, a hypothesis, by which we give Nature its purpose and meaning).

Kant's assertion that the categories of understanding must be deduced theoretically are no longer necessary because they are social constructs (K.J. McGarry, 1975).

Kant rejected the idea that knowledge is an imprint of sense impressions on the passive mind, arguing that the mind is actively selecting and organizing its own experiences into 'categories', and the human knowledge is formed by interaction with the environment (K.J. McGarry, 1975).

Kant recognized 'science proper' that deals with purely analytical propositions, and metaphysics, the science of first principles of human cognition (F. Machlup, 1980).

He distinguished Pure, or Rational from Applied or Empirical knowledge; and the faculty of judgment (relating general principles to particular cases) and faculties of understanding and reason (combining these general principles) (Shera, 1965, 1972).

Kant felt that form is an ideal, abstract, nonphysical, metaphysical entity (Young, 1987). He distinguished between rational and empirical knowledge (of Plato) and followed Hobbes dichotomy between them (Shera, 19651).

Kantian ethical principles consist of (a) good will (desire to act correctly), (b) duty (adherence to the law), (c) categorical imperatives (harm-avoiding universalizable action) and (d) ethical action evaluated in terms of ends not means

(R. Hauptman, 1988).

One of the categorical imperatives in moral philosophy is to treat each person as an end, never as a means. Education should consist of discipline, culture, discretion and moral training. Its essence is the enlightenment, a logical thinking as opposed to random behavior. In educating a child, the main purpose is the development and learning through activities and to shape character and commitment to duty through principles of obedience, truthfulness, and sociableness.

J. Alexander (1944) notes a distinction between the neo-Aristotelean focus on ethical practice, Kantian deontology (merited are only the actions based on sense of duty as prescribed by reason), utilitarianism (the greatest happiness for the greatest number of people), and post-Enlightenment school of ethics. Librarians, according to C.D. Batty (1966) are focusing on form and structure rather than substance or content, on 'how' rather than 'what'. This approach required a faculty of judgment, defined by Kant as relating general principles to particular cases in the selection of appropriate rules. In discussing subjective knowledge, M. Glossop (1978) refers to Kant's distinction between things as they are perceived and as they actually are.

C.J. Krieg (1970) noted that Kant's principle of individual responsibility for self-improvement was one of the influential philosophical principles in Putnam 's own thinking.

Library is responsible for providing not only ready-made information, but also 'personal knowledge', the enlightenment in

Kantian sense of emergence from one's self-insecure immaturity (S. Larsen (1988).

J. Bekker (1976) illustrates deontological approach to library ethics by citing Kant's categorical imperative (one should act as if that action follows a universal law).

Relevance:
P: Critical Idealism concentrating on the nature of presuppositions of experience and on the capacities and limits of human reason. Form is defined as an ideal, abstract, nonphysical, metaphysical entity; distinction is made between rational and empirical knowledge.
L: The library is responsible for providing information and personal knowledge. (13 citations)

KAPLAN, ABRAHAM (1918-)

One of the papers delivered at the Chicago's Intellectual Foundations of Library Education in 1964 was an essay by Abraham Kaplan: 'The Age of the Symbol - A philosophy of Library Education'. At the time of the conference Kaplan was a professor of philosophy at the University of Michigan; his main fields of interest were aesthetics, psychoanalysis, legal and political philosophy. The essay here partly abstracted was in the past often cited by writers in the philosophy of librarianship.

Kaplan's main argument was that the library's metaphysical focus should be not on the nature of human beings but on the ideas about them. In this sense librarianship is a part of metadisciplines such as philosophy (Nitecki, 1997).

(a) On librarianship:

"The role of philosophy is . . . to hold the mirror up to nature, and particularly . . . to human nature" (Kaplan, 1964, p. 295). Human knowledge is known to very few human beings, hence

the main functions of the library are as: (1) a repository service (society's memory), (2) a means of education (improving patrons status in society by sharing with them experiences of others) and as (3) a re-search (not extending knowledge but making available the knowledge already existing).

Library focuses on a flow of ideas, shifted throughout history from the role of 'operating gas station' to 'a traffic transportation engineer', stressing fundamental issue of information flow.

Intellectual foundations of library education are based on the concept of librarianship as metascience: addressing not the nature of things but the ideas about them, the nature of reality, not reality itself, with central concepts of structure, order, and form (as contrasted with narrow subject specialization focusing on substance and content).

Librarians should avoid the tendencies described by the law of the instrument: "give a small boy a hammer and it will turn out that everything he encounters needs pounding" (Ibid., p. 303). Machine, like a computer, dictates its own ends, we adapt solutions in terms of its capabilities.

Kaplan considers the use of models as a mark of maturity of discipline (G. Harmon, 1973).

(b) On Philosophy of librarianship:

There are some similarities between philosophy and librarianship: both disciplines (a) address the whole knowledge and culture; (b) both are unable to address the substance and content of knowledge and concentrate instead on its form,

structure, order and various interrelationships, and (c) in both the problems come from outside of the disciplines, each serving as middlemen for other disciplines.

Kaplan extended the concept of metascience to librarianship, as a discipline which like logic, linguistics and mathematics is based on a metaphorical concept of structure, order and form (J.Z. Nitecki, 1979a).

J.M. Christ (1972) considers philosophy of librarianship to be a very important aspect of librarianship, citing Kaplan's statement that specific metaphysical doctrines played important influence on the directions of inquiry and in formulation of hypotheses. Kaplan defined the library from an instrumental viewpoint as a means of education, considering the library as a memory of the society, an instrumentality by which special groups take advantage of the experiences in improving their own position in a society.

R. Bryson (1970) in his search for the theoretical framework for librarianship relied on Kaplan's approach, and introduced a three-dimensional model based on sociological laws of communication needs, organizational development and division of labor.

R.G. Horowitz (1988) acknowledged Kaplan's metaphysical approach to philosophy of librarianship, B. McCrimmon (1994) noted Kaplan's comparison of librarianship with philosophy, A.R. Rogers (1984b) pointed to his consideration of both disciplines as metasciences, focusing on ideas about the nature.

H.C.Wright fully endorsed Kaplan's perception of librarianship as a metascience (Wright, 1976), with direct interest in the noetic form of the human mind itself (Wright, 1977a). And he accepted Kaplan's distinction between formal abstractions and physical manifestations of information, pointing to the ontological differences between metaphysical nature of ideas and their physical manifestations (Wright, 1986).

D.P. Bergen's (1981) criticism of conceptual approach in library philosophy included among others Kaplan's idealistic notion that philosophy and librarianship focus on structure rather than substance, and on form rather than content; it is a metaphysical approach opposing pragmatism of library practitioners.

T.W. Shaughnessy (1976) objected to Kaplan's notion of librarianship as a metascience, because it interrelates with other disciplines on the bibliographical methodology only.

On the other hand, L.F. Stieg (1978) identified the need for Kaplan's humanistic base, which would provide general laws explaining and predicting the results of library operations.

(c) On library functions:

J. Bekker (1976) quotes Kaplan's statement that everything in the library must relate to its uses and users; and that functions and purposes of librarianship are interdependent (an instrument must have some properties by which it fulfills its purpose).

Kaplan identified 3 major areas comprising the intellectual foundation of library education: (1) humanistic (uses and users of information, e.g., sociology of knowledge, history of ideas),

(2) vocational (how) and (3) metasciences (about subject matter provided by our ideas, language and ways of transmitting information about the nature, e.g., mathematics, logic, linguistics, semantics and information science) (Shera, 1972).

(d) The law of the instrument:

Kaplan's law of the instrument illustrates the danger of overspecialization, which may be important in creating new knowledge but its applicability must be left to the generalist (P.Wilson, 1983). It says that we want to do, not what is needed, but what we know how to do. He asks whether librarians ought to be telus-type (humanistic idealists) or mechus-type (materialistic scientists), and his statement is considered by H.C. Wright (1977) as 'the only honest-to-goodness philosophical statement in all library literature'. Kaplan's inclusion of librarianship in metasciences is derived not from man and nature but from human ideas, language and information processes, with the central themes of order and form. The only alternatives are either narrow specialization or impossible encyclopedism. Librarians are not humanists by choice, but by their interest in human issues, and thus librarianship may be identical with philosophy (H.C. Wright, 1977).

The law of the instrument holds that man formulates his problems in terms of how he can solve them. To Shera (1973) this is similar to saying that 'the medium is the message'.

Relevance:
P: Idealistic distinction between formal abstractions of information and its physical application, compared to ontological differences between metaphysical nature of ideas and their physical manifestations.
L: Librarianship is considered a metascience. In it everything must relate to its uses and users; the functions and purposes of librarianship are interdependent. (18 citations)

KIERKEGAARD, SOREN, A. (1813-1855)

Kierkegaard was a Danish philosopher and religious writer, who in reaction to Hegelian rationalism and Kantian 'thing-in-itself, founded existentialism, based on a dualism of thought and reality, faith and knowledge. His emphases in religion were psychological, ethical and aesthetic and represented the views of ascetic atomism. The basic tenets of this philosophy were: (a) Existentialism is non-metaphysical and anti-hypothetical. (b) Philosophy should address human predicament and inner states of individuals of alienation, anxiety, sense of nothingness and anticipation of death. (c) 'Existence is not a metaphysical concept of 'essence', has no logical or truth value, the distinction between physical and psychological realities is not valid, and although passionate it is rational and in the state of the mind, it precedes essence. (d) Abstraction is unable to communicate the reality of individual existence, universe has no rational directions, it is meaningless and absurd and provides no moral rules. (e) Although Truth is subjective, it might be objective, but known only to human beings. (f) Knowledge is based on sensations, which exist in our consciousness, its value depends not on truth but on biological value to pure data of consciousness. (f) Moral principles are created by humans to

reflect people's responsibility for their actions. (g) The only self-identity of an individual is in his act of choosing. He is unpredictable with full freedom of the will.

Kierkegaard thought that education should be subjective and religious, aiming at the development of the individuality. He criticized science and opposed vocational and technical studies because of their focus on the secular world of objectivity. It was that objectivity that resulted in the group-centered viewpoint.

D.C.L. Michaels (1985) considered subjective Kierkegaard's focus on truth interpreted in terms of environment of which an individual is a part, as one of the value concepts that ought to be a part of librarians' educational role to provide source material conductive to the growth of human values.

Relevance:
P: Existentialism, based on a dualism of thought and reality, faith and knowledge. Philosophy should address human predicament and inner states of alienation, anxiety, sense of nothingness and anticipation of death.
L: Importance of existential environment in librarians' education. (1 citation)

LAPLACE, PIERRE SIMON, MARQUIS DE (1749-1827)

Laplace was a French mathematician and astronomer, known for his nebular hypothesis of the origin of universe and the theory of probability.

In philosophy, he fully supported Newtonian physics, removing inconsistencies in it, and believed that the explanatory power of the Newtonian system can be used as a demonstration of truth. Laplace formulated a deterministic view that everything is

predetermined. If all the universe's initial conditions were known, one could predict the occurrence of all subsequent events. He defined a measure of probability in terms of the proportion of alternatives between equality of ignorance and equality of possibility. He also applied it to moral considerations (e.g., optimum size of the jury that would determine the least doubtful verdict).

To Laplace, the means for arriving at truth are based on "induction, analogy, hypotheses founded upon facts and rectified continually by observations ... given by nature and strengthened by numerous comparisons of its indications with experience" (The Encyclopedia of Philosophy vol.4, p.393).

However, J. Gleick (1987) thinks that the theory of relativity, will eliminate Newtonian notions of absolute space and time, quantum theory his hope for controllable measurement process and Laplacian deterministic predictability. It is the function of brain to find order in chaos, the function that cannot be provided by library of forms and ideas.

Relevance:
P: Deterministic philosophy of science. The methodology based on induction, analogy, hypotheses and facts rectified by observations.
L: Forms and ideas of librarianship are insufficient to provide order in chaos (1 citation).

LASZLO, ERWIN (1932-)

Laszlo, a Hungarian musician and philosopher, is known for his contributions to the systems views of nature and human mind. Natural systems are defined as wholes with irreducible properties, self-maintained and self-created in response to

changing environment. Human beings are seen as coordinating interface system in the multilevel hierarchy of nature. The unique human communication, written, spoken or communicated through art and other expressions of feelings, transfers meaning and guides human behavior. Human culture is the result of gradual transformation of means (consciousness, the self-monitoring capacity of nervous system and the subjectivity and sensitivity to environment) into an end of emancipating the human beings, limited, biological sensory reality into the self-created human world of culture (knowledge, beauty, faith and morality).

Laszlo interprets systems philosophy as a 'new paradigm of contemporary thought' by interrelating the results of the information explosion with modern methodologies and conceptual analysis. The general systems theory provides for interrelationships between scientific information and philosophical interpretation of its meaning. Expanded into a general systems philosophy, the new approach will enrich the knowledge by discovering meaningful patterns in an otherwise random universe.

The physical and conceptual realities in librarianship can be interrelated by isomorphism, a law of organization, which describes a structural correspondence between any given empirical, physical collection of data and their conceptual, mental perception. Isomorphism was defined by Laszlo as 'general orderability' that 'suggests a fundamental unity of observable" (J.Z. Nitecki 1979).

M. F. Winter (1988) discusses the concept of library knowledge as an applied metascience, concentrating on organizing the universe of published records of knowledge. He refers to Laszlo's systems theory as one of the three approaches to metascience.

In his review of one of Laszlo's books, D.J. Foskett (1974) relates his systems philosophy to library and information services discussed from two perspectives. One refers to the interrelated activities of acquisition, cataloging and classification within the network of similar national and international systems of libraries. In the second perspective library is seen as the social institution organizing information itself. Library exists as a system within other systems of a super-system. Library management aims at harmonizing the inner action to provide environment for maximizing its potential by utilizing the advantages of external relations. The library resembles the qualities of human mind, and therefore should not reduce itself to mere stimulus-response behavior.

Relevance:
P: General systems theory provides for interrelationships between scientific information and philosophical interpretation of its meaning.
L: Isomorphism describes a structural correspondence between any library empirical, physical collection of data with their conceptual, mental perception. Library and information services interpreted as a system of interrelated activities of acquisition, cataloging and classification within the network of larger systems of libraries and as a social institution organizing information itself. (3 citations)

LEIBNITZ, GOTTFRIED WILHELM (1646-1716)

Germany's 17th century philosopher, inventor of universal calculus, Leibnitz proposed a universal language of

communication, universal encyclopedia and anticipated symbolic logic and a calculating machine.

Leibnitz developed the theory of monads (universe is made of body and soul monads which have no extension, shape or divisibility) and Pre-established Harmony (logical rather than causal harmony between mind and body similar to synchronized clocks). He also introduced principles of (a) identity of indiscernible (no two thinks are exactly the same), (b) sufficient reason (nothing happens without reason), (c) noncontradiction (the truths of reason or logic are the bases for all necessary truths) and (d) the best of all possible worlds.

Leibnitz was employed as a librarian by Duke of Brunswick at Hanower, the position he held till his death. Among his proposals was the establishment of a German scientific society with a comprehensive library and a semiannual review journal. His ideal library should contain only books of invention, experiment and historical documents (R. Davies, 1981).

Leibnitz visualized the library as a depository of practical information. He also advocated universality of library approach by issuing lists of books that would begin the 'inventory of the human knowledge contained in books'. He also developed a classification of libraries according to university faculty and profession, with alphabetical catalog, chronological arrangement by year of publication and subject indexes arranged by catchword (B. Landheer, 1957).

W.B.Rayward (1983b) reviewed the relationships between librarianship and information research in the philosophical context of Leibnitz's concept of unification of knowledge followed by Kochen focus on wisdom as the product of a system.

Leibnitz set a number of principles governing the duties of the librarian (e.g., cataloging as an inventory of human knowledge in books) (Shera, 1976). He made the case for the social function of a scholarly research library, although the new era of intellectual activities did not give libraries of the day any new directions or purposes (K.J. McGarry, 1976).

Bliss classification system was influenced by Leibnitz, incorporating his categories of Theology, Jurisprudence and Medicine in the system (J. Thompson, 1977).

Leibnitz contributed to communication and information theory by his emphasis on symbolism which lead to the compression of mathematical information and to the use of mathematical symbolism as a universal language of logic (C.E.Cherry, 1952; A. Gilchrist, 1986).

M. Heim (1993) discussed the concept of virtual reality in the context of Leibnitz's and other philosophies.

Norman Wiener considers Leibnitz a patron saint of cybernetics, for his interest in universal symbolism and calculus of reason, from which present mathematical notation and symbolic logic evolved; his 'calculus ratio-cinerator' was a precursor of 'machine ratio-cinatrix' (C.H. Davis, 1968; M. Eden, 1983).

Leibnitz believed that the use of ideograms for phonograms of ordinary language can improve the process of logical analysis and

synthesis. This preference was already illustrated in mathematics and its insight laid foundations for a method of reasoning based on 'mathematical logic' or 'symbolic logic' (Shera, 1965).

Relevance:
P: Idealistic, metaphysical theory of substance that consists of physical and mental monads based on logical rather than causal harmony between mind and body, operating without each other intervention. Idea of unifying knowledge by a universal language and calculus of reasoning, connecting, in Leibnitz own words, "Plato with Democritus, Aristotle with Descartes, the Scholastics with the moderns, theology and morals with reason" (Runes, 1983).
L: The concept of the library as an inventory of knowledge and a depository of practical information. (13 citations)

LENIN, ULIANOV, VLADIMIR ILYICH (1870-1924).

Interested in social sciences and philosophy, Lenin was the chief exponent of dialectical materialism as a political doctrine, critical of idealism, positivism and capitalism. He drew a distinction between communism and socialism, proposed a dictatorship of proletariat and the world revolution.

Leninist Marxism was characterized by strong emphasis on the need to combine philosophical theory with practical action, stressing that space and time are the objective forms of matter, and matter exists independently of consciousness. Important to him was the struggle of opposing forces as the base for all changes and as the essence of dialectics. He discussed economics and politics in the context of historical materialism (the social philosophy of dialectical materialism).

M.K. Buckland (1983) quotes Lenin's appreciation of the importance of a library in building socialist way of life.

Lenin emphasized that the criteria for good library service consist of circulation and use of books rather than the quality

of their static book collections. The collections should be socially useful. This belief was accepted by other communists as the origin of the new concept of library science based on the principle of cultural revolution, opposing at the same time the view of conservative librarians like Rubakin for advocating cultural, not political library objectives. Lenin often quoted from Rubakin's works, while criticizing them for eclecticism and anti-social polemics (S. Karetzky, 1982).

Relevance:
P: Dialectical materialism as a political and social doctrine. Theory combining the concepts of independent matter with practical action, presented in the context of changes resulting from a constant struggle of opposites.
L: Social utility of library services. (2 citations)

LÉVI-STRAUSS, CLAUDE

Levi-Strauss, the French anthropologist, studied myth in the context of relationships between nature and culture, food providers and kinship systems. Myth expresses continuity and discontinuity in these relations, and reconciles the binary opposition within the society. It provides the means for interpreting intellectually and socially its own cultural structure.

Levi-Strauss maintained that the major distinction between literate and pre-literate societies is the pluralistic view of the former and primitive, monolithic, traditional views of the latter (K.J. McGarry, 1981).

He wrote that 'culture is communication' with primary non-verbal mode, mediated through objects and action (K.J. McGarry, 1976).

Relevance:
PHIL: Philosophy of social science based on myth as a way for reconciling continuity and discontinuity in social relations.
LIS: Pluralistic views of literate societies of importance in comparative librarianship. (2 citations)

LEUCIPPUS (c.450 BC)

Leucippus, Greek materialistic philosopher, who with Democritus combined Being and Becoming into an atomic model of matter (H.C. Wright, 1986). He assumed the plurality of ultimate entities, called atoms, and developed the principle that all qualitative differences in nature may be reduced to these quantitative atoms. The infinity of equally homogeneous parts of atoms, separated by non-Being (empty space), is distributed in infinite variety of forms in the infinite space. The things come into being ('becoming') by accidental gathering of these atoms. The changes in nature are the result of 'reasonable cause and necessity'.

Relevance:
P: Principle of materialistic philosophy reducing all qualitative differences to quantitative relations. Both, 'what is'(atoms) and 'what is not'(space) are real entities.
L: Objects (such as print) are perceived as images. (1 citation)

LOCKE, JOHN (1632-1704)

British empiricist and physical realist, who denied Plato's and Descartes' existence of innate ideas, categories and moral principles. Mind is at birth a 'tabula rasa'. Ideas are originated through sensation (means of knowing the external world) and reflection (activity of understanding oneself). Qualities are perceived in our minds as primary or secondary. Quantities such as size, shape and motion are primary, while color, sound, taste, temperature, pleasure and pain are secondary quantities of experience.

Abstract ideas express human inability: (a) to grasp spacial and temporal extension of sense-experience ('Infinity'); (b) to understand why qualities congregate in clumps ('Substance'); (c) to perceive how these clumps follow ('cause and effect'), producing one another ('power'); and (d) to understand that our volitions put them into effect.

Locke assumed that all our ideas are ultimately the products of sensation, and he adopted psychological Gestalt, based on three human faculties: memory, imagination and reason, and emerging from them three emanations: history, philosophy and poesy (Shera, 1965).

'Freedom' is a liberty of action in accordance with choice. 'Identity' is derived from the continuity of the content of clumps of sensation. 'Universals' represent superficial resemblance, not real essence of things. All concepts such as identity, diversity, and relations are directly 'intuited' by experience. He reduced metaphysics to the experimental science of the soul (F. Machlup, 1980). Robson (1976) sees in Locke's opposition to innate ideas and intuitive knowledge as new opportunities for changing the individuals and society through education.

McGarry (1975) searched for an answer to the question 'if man puts the code into a machine, who puts the code into man?' by studying various philosophical interpretations of the code, among them Locke's concepts of mind and tabula rasa.

Ideas are stored in the mind not statically as books on library shelve, but dynamically according to similarity, contiguity and cause-effect characteristics (C.E. Cherry, 1952).

Locke introduced new tradition in epistemology by considering mind as a tabula rasa (i.e., man is a passive creature of his environment learning most if not all through his sense experiences (K.J. McGarry, 1976).

In education, Locke stressed the importance of proper environment, variety of experience and learning different cultures through travel. He considered education as a promoter of the principles of virtue and wisdom. strongly influencing the philosophy of Putnam (C.J. Krieg, 1970).

Locke's philosophy that peoples should be governed by their own consent influenced American library movement by shifting from the 17th century focus on religious motivation to social approach, stressing universal education (J. Cushman, 1960).

By expanding the concept of the communication channel to include the recipients cognitive and neurological processes, one postulates with Locke (and Darwin) the notion that end product of perception is free of noise, thus reintroducing neutral observation language (F. Suppe, 1985).

The libertarian theory of press is based on the philosophies of Locke, Milton and Mill, expressing dedication to truth through objective reporting (D.K. Berninghouse. 1972).

Relevance:
P: Empiricistic denial of innate ideas and intuitive knowledge. Metaphor of a mind as tabula rasa, a blank tablets on which impressions are recorded by experience.
L: Education and proper learning environment as means for changing individuals and society. (11 citations)

LUKASIEWICZ, JAN (1878-1956)

Polish philosopher and logician. Lukasiewicz reviewed Aristotle's three principles of contradiction: (a) ontological (the same property cannot simultaneously belong and not belong to the same object in the same respect), (b) logical form and (c) psychological principle (two contradictory propositions cannot both be true).

In the logic of propositions, his major contribution was the discovery of the three-valued logic: truth, falsity and the principle of trivalence of three constant true propositions, eventually leading to many-valued logic.

Lukasiewicz developed a simple proof technique and his symbolism does not requires special signs of punctuation, brackets or dots; both methods were adapted by many logicians.

S. Artandi (1975, 1979) refers to Lukasiewicz concept of 'ignorance explosion', the gradual degradation of the relative individual's intellectual capacity to deal with exponentially increasing information. With the expanding technology, people relate to their environment more than ever before through information, concepts and theories ('the indicators of experience') rather than through direct experiences. Yet, the biological capacity to acquire and process information remains the same.

Relevance:
P: Introduction of three-valued logic.
L: The concept of the 'ignorance explosion' in bibliothecal communication and the role of the 'indicators of experience' in interpreting library environment. (2 citations)

LUTHER, MARTIN (1483-1546)

Distrusting the effectiveness of reason, Luther rejected Scholasticism and the Aristotelean tradition, accepting instead Mysticism.

His 95 theses about the beliefs and practices of the Church, inspired an ecclesiastical religious school that emphasized the Protestant doctrine of salvation by faith and grace of God.

Luther utilized political importance of the library in disseminating his doctrine (P. Hoare, 1987). His proclamation of 1517 started the Reformation, leading to Protestant ethics, encouraging the use of individuals' own talent, and considering reading as a virtuous act of self-improvement that would lead to wealth and self-reliance (M.W. Downs, 1969).

Relevance:
P: Protestant reformation based on the authority of Scripture and conscience.
L: The political role of the library in dissemination of knowledge and reading as a virtuous act of self-improvement. (2 citations)

MACKAY, D.M. (1922-)

In the philosophical discussions on the nature of volition a distinction is made between two phenomena: causally connected mental activities (acts of volition, or acts of willing) and their effects on a bodily motion. A corresponding linguistic interpretation, proposed by D.M. Mackay in 1957 is called 'two-languages' theory. It consists of two different languages used in

communication, a 'subject-language' based on words defined by the actor (the initiator of the communication), and 'object-language' consisting of words used by the observer, (the listener in the communication). To Mackay there is no need to search for causal mechanism affecting the relationships between the two languages, they represent a unity.

In reviewing scientific methods in the communication of information, E.C. Cherry (1952) discusses Mackay's attempt to obtain a logical quantitative definition of information in a scientific experiment or proposition. It seems that different disciplines may have logically equivalent structures, interpreted differently in different contexts. A scientific statement can be divided into elementary ('atomic') propositions, each of which may be true or false. A unit of information is that which induces us to add elementary propositions to the logical pattern of a scientific statement.

Information has two complementary aspects: (a) a priori aspects related to the structure of the scientific experiment (e.g., information determined by limited precision of an instrument) and (b) a posteriori aspect related to metrical information-content of experiment (instrument reading information as a set of values of a magnitude).

Relevance:
P: Linguistic theory of two different subject and object languages used in communication.
L: Quantitative definition of information. A priori and a posteriori measurements of information. (1 citation)

MALINOWSKI, BRONISLAW KASPER (1884-1942)

Polish born, Malinowski was an anthropologist known for his studies of the inhabitants of Trobriand Islands. He pointed out to the ability of islanders to learn from experience, unconnected with their beliefs in supernatural power. A distinction is however not clearly made between the religious and social influences on their morality. Evidence points to what Malinowski calls 'social binding forces' which consists of fear of social sanctions, habits, and appreciation of social value of rules.

Malinowski introduced the term 'functionalism' describing a method and approach in social anthropology in which facts are explained in the context of the culture, in terms of relations between each other within a system and the relations of the system to the physical environment. The principle of functionalism is the assumption that in every civilization every concept, belief or material object fulfils some specific function and need, as an indispensable part of the whole. His view was later criticized for vagueness of the terms 'indispensability' and 'needs', and for making dogmatic assertions.

W. Caldwell (1968) discussed library purposes in terms of Malinowski's social functionalism that reflects basic social needs and dynamic forces they generate. Library purposes are defined in terms of primary social needs of nutrition, reproduction, bodily comfort, safety, relaxation, movement and growth.

J.P. Danton (1973) notes Malinowski's exception to the importance of comparison in comparative librarianship, by arguing

that it is impossible to compare incomparable such as cultures, since each of them is a unique product of the cultural whole.

Relevance:
P: Anthropological interpretation of social philosophy in terms of 'social binding forces' of values and rules in a unique culture. The 'functional' methodology of explaining facts in the cultural context and its interrelations within system's physical environment.
L: The library purposes are defined in terms of primary social needs. (2 citations)

MARITAIN, JACQUES (1882-1973)

Maritain was a French philosopher advocating Thomistic philosophy's applicability to modern issues. In metaphysics his interpretation of 'being qua being' was based on 'metaphysical intuition of being', focusing not on material things, but on empirical existence as existence. This was achieved through abstract idea producing visualization of being in itself. His theory of knowledge is based on the notion that there is different ways of knowing reality: as a material being (containing both science and philosophy of nature), mathematical quantity, and metaphysical reality of being as being.

Moral philosophy must include the consideration of existential state of the individual (his ethnological, sociological, psychological and theological aspects).

Maritain's social and political philosophy expresses the Christian politics, relating to human being as both, an individual (society related) and as a person (a whole, spiritually related).

In philosophy of art, Maritain considers art as the reflection of divine creation. In the artistic knowledge, the created object

exists in its own world. within the mind, with artistic intuition directed toward concrete existence.

Maritain advocated tolerance based on the knowledge of truth and the convictions of others that are motivated by the search for truth (J.B. Black, in A.B. Lemke, 1971).

He felt that higher education should be restricted to 'universal knowledge' in which all parts of human knowledge are represented in a form of 'architecture of teaching' based on hierarchy of knowledge, from the bottom up. He identified four major types of subjects: (1) useful art and applied sciences; (2) practical sciences, (3) speculative sciences and fine arts; and (4) philosophy.

Relevance:
P: Philosophy of religion defining modern society in Thomistic terms. Existential view of relations between an individual and his society.
L: Tolerance for different interpretation of truth. (1 citation)

MARX, KARL (1818-1883)

His philosophy aimed at the interpretation of historical trends in the context of social and economic structure, considering capitalism as a phase that will be overthrown by revolution of exploited workers. (His dissertation was on the materialism of Democritus and Epicurus analyzed from the Hegelian point of view).

Marx called for proletariat consciousness and world union of workers to replace the philosophy of idealism by economic determinism recognition of a class struggle. The future classless society would work for everyone, in which an individual will not be considered a commodity, and will be given opportunity for full

development of his or her potentials. Marx was very active in practical politics and in organizing labor movements.

Together with Engels they introduced the concept of dialectical materialism. The philosophical, social and economic theories developed by them were stated in the Communist Manifesto.

In epistemology, dialectical materialism adopted empiricism, in axiology it was humanitarian and its social theory focused on historical materialism and class structure of the society. In economics it discussed the capitalistic surplus value of production. Marx considered economic factor as the overwhelming determinant in human life (K.J. McGarry, 1976). Scientific knowledge, according to J. Fogl (1979), is a component of Marxist-Leninist ideology with information influencing groups and individuals in the use of cognitive processes. Its ethical thesis rejected capitalism as unjust.

Marx felt that education, under the control of the proletariat, should be used as an instrument of changing the world by rejecting the 'hidden curriculum' that teaches status quo and subservience to the existing political and economic system.

Buckland, M.K. (1983) quotes Marx's appraisal of the importance of libraries in building socialism, by assisting in political, economic and educational processes of dialectical materialism.

According to M. Rovelstad (1974), socialistic librarianship can be understood only in the context of the communist political theory, by aiming at creation of educated society, loyal to

socialism; abolishing educational monopoly of privileged class, erasing the distinction between manual and intellectual work; and eliminating inequality of women and cultural distinction between urban and rural population.

In her 1975 review, M. Rovelstad criticized Shera for representing capitalistic philosophy of librarianship, based on abstraction that does not reflect existing social conflict.

The library as an integral part of socialistic education is responsible for implementing these ideas by collections that express ideological and political tenets of socialism.

In general, the socialistic bibliology is based on the dialectical principle that books and book cultures are subject to common laws of nature as well as of society, and should be implemented in order to promote effective practical activities (P. Molnar, 1968).

Soviet Marxism-Leninism classification is based on historically evolved subjects (J. S. Sharma, 1965). In that system, information is considered as a tool in regulating society (N.D. Stevens, 1986). L. Vagianos (1973b) noted that librarianship seems to accept the Marxist credo that a change in quantity is a change in quality.

M. Voloshin (1988) criticizes the commercialization and manipulation of information in the West by referring to Marx concept of alienation in a capitalistic society as a gradual transformation of human into thing-like beings, widening the gap between rich and poor, controllers and controlled, oppressors and oppressed.

J. Lindsay (1977) criticizes Western theory of librarianship for uncritical acceptance of the concepts of democracy and an 'irreconcilable contradictions' in linking the concept of the freedom of individual with his social dependency by giving him what he wants.

D. Bergen (1987) felt that Marxism demytologizes librarianship by severely criticizing the pluralistic social philosophy of neutrality and positivistic epistemology based on empirical testing of formal hypotheses instead of pragmatic trial and error approach which leads to trivial research.

Relevance:
P: Dialectical and historical materialism of communism; interpretation of political philosophy in the cultural and economic contexts.
L: The library as an agent of political and cultural change. (12 citations)

MEAD, GEORGE HERBERT (1863-1931)

A Deweyan pragmatist, Mead emphasized the relationships between the individual and the process of self development through social language. Based on inductive analyzes, Mead considered self as a social entity, open to analyses and not as a mentalistic, hidden inner thing.

All reality is an active process, in which symbolic processes and action always transcend any statements.

Mead interpreted the development of language in a relativistic, empiricistic and environmental view in order to meet the communication needs of a group that allows for abstract thinking, the emergence of the concept of self and a notion of purposeful behavior (Gerorge A. Miler, 1983b).

His symbolic interactionism combined empirical and ideative social orders through psychological interaction by relating physical symbols to their symbolic referents, rejecting Plato's dualism (H.C. Wright, 1986).

Relevance:
P: Pragmatic interpretation of individual self as a social entity and rejection of Platonic dualism.
L: Symbolic interactionism as a concept in communication of ideas between individuals. (3 citations)

MILL, JOHN STUART (1806-1873)

Son of the historian, philosopher and psychologist James Mill, John was influenced by his father, Jeremy Bentham and Comte's Positivism. His main interest was in the fundamental phases of knowledge, interpreted in terms of the concept of 'evidence'.

In logic he was interested in the inferences from the particular sets of facts. He established the canons of experimental inquiry based on the rule that by changing the setting of phenomena, it is possible to tell which of them is the cause. In complex situations, unexplained events must be traced to new causes. Such an approach will allow to discover uniformity in human behavior, reducing social phenomena to a science. The cause of an event is the sum total of its necessary conditions.

His System of Logic provided a preferred solution to problems in comparative studies by identifying general causes for the changing society (J.P. Danton, 1973).

Mill's inductive method consists of: (a) an agreement (the circumstance in which all instances of a phenomenon agree is the cause or effect of that phenomenon); (b) a difference (events that occur in the absence of given phenomena are not their

causes); (c) a joint agreement and difference (the circumstance in which the two instances for a given phenomenon differ is the cause or effect of the phenomenon); (d) a concomitant variations (the cause of phenomena must be present to the similar degree as the phenomena); and (e) a residues (in the phenomenon, its part that is not the residue of the previous induction is the effect of the remaining antecedents).

As an empiricist, Mill reduced material bodies to 'permanent possibilities of sensation' and mind to the succession of actual and possible states, united by an unknown aspect of mind. All inference is basically an induction based on the uniformity of nature.

Moral freedom imposes limitations on causal connections. The ethical goal is the greatest happiness for the greatest number, limited however, to pleasures selected by enlightened people.

In Western democracies, the libertarian theory of press is based on the philosophies of Milton, Locke and Mill: they call for searching truth through objective reporting (D.K. Berninghouse, 1972b).

American idealists, liberals and conservatists relate to Mill's liberal philosophy, each identifying different aspects of that philosophy: idealists emphasize liberty, individual freedom and private property; liberals stress collective action; and conservatists focus on hierarchy, family and tradition. Librarians can either accept the liberal tenants of information as a commodity, or serve as conservators of community cultural heritage. The alignment of ideals with pragmatism resulted in a

confusion of advocating social activism and neutrality on political issues (Birdsdall, W.F., 1988).

The modern concept of the 'public library' emerged from the utilitarian principle of happiness to all. J.S. Mill expanded the concept of 'pleasure' from egoistic to 'higher' pleasure-seeking, calling for altruism and society's support of public libraries (A. Black, 1991). His concept of self-help and philanthropy implied freedom from state intervention (D.Gerard, 1978).

The freedom to read is based on Mill's concept of individual freedom on (a) consciousness of thoughts, feelings and the freedom to express and publish opinions, and (b) liberty of taste and pursuit of once own objectives (E. Fain, 1977).

Following Mill's distinction between a denotation (within the definition of a profession) and a connotation (ideas suggested by the definition), M.M. Levine (1973) argues that librarianship is not the profession. The denotation of the term 'profession' implies dedication to the learned profession, the connotation implies faith in saving human life, defending justice and spiritual salvation - not applicable to librarians, who as curators of civilization are concerned with saving books not life.

D.V. Ward (1990) makes a distinction between consequential and deonotlogical ethical theories used as basis for the relationships between intellectual freedom and censorship. Consequential theories, represented by utilitarians and J.S. Mill, say that right action is determined by its outcome, best action producing greatest good for greatest number of people.

(Here the censorship is undesirable because of its consequences). Deontological theories proposed by Kant (and later by W.D. Ross) are rejected; they maintain that the right action is determined not by its consequences but by principles such as justice and duty (hence censorship is abandoned because people have rights to express their thoughts independently of their consequences). Librarians should follow the former approach, although the intellectual argument based on freedom is stronger than one based on the consequences of censorship. To Mill, censorship denies in advance the possibility of truth of censored opinion, by usurping the authority to decide for others what is right or good, based on the censor's own infallibility.

Nothing depends exclusively on either physical or moral (psychological) sciences. Mills recognized the differences between sciences (collections of facts and truths) and arts (perceptions and rules of conduct). Knowledge is classified by causes, art by effects (F. Machlup, 1980).

Mills provided the strongest argument for the liberal professional education. Man exists before professional man. Professional schools should give the graduate not only professional knowledge but most important, that which directs professional knowledge (Shera, 1965), 1972).

Lindsay is critical of librarians advocating various social beliefs for not questioning the real value of democracy and its different interpretations offered by Lenin, Marx or Mill (J. Lindsay, 1977).

Relevance:
P1: Empirical arguments for inductive methodology; knowledge interpreted as evidence and role of system of logic in comparative studies.
L: Utilitarian principles as foundations of the American public library. Right action is determined by its results. (12 citations)

MILTON, JOHN (1608-1674).

An English poet, religious, ethical and a political writer, Milton was critical of censorship of the press, and was a strong believer in the Scripture as the rule for authority and conscience. His theology was based on the principles of spirit and matter, with the theology compatible with the principles of logic by propagating faith, free will and faith. The soul is not created immediately by God but is a product of natural growth from father to son.

In ethics, Milton was a Christian humanist, considering reason as a means for choosing between good and evil, but objecting to church prescriptive morality.

In political theory Milton viewed state as a product of a social contract, in which people delegate the power to the state, with the right to withdraw it.

In his literary theory, Milton expected literature to develop moral order both in the individual and his society.

D.K. Berninghouse (1972b) noted Milton influence on the western theory of the freedom of the press, pointing to the antithesis between social responsibilities of librarians and the Library Bill of Rights, with the library press taking sides of social responsibility view.

Shera (1976) compares Milton's Isis in Areopagitica to librarians who also have to search for truth that is fragmented into a thousand pieces by human confusion. He also noted that Milton was critical of low level of education (Shera, 1965).

Relevance:
P: Philosophies of religion (authority) and politics (social contract).
L: Argument against censorship and for freedom of the press and social responsibilities of librarians. (3 citations)

MONTESQUIEU, CHARLES DE SECONDAT (1689-1755)

A rationalist, French political and social philosopher, Montesquieu stressed relationships between laws and the constitution of government, based on the social and geographic environment, customs and religion of a given society. Montesquieu proposed the concept of 'laws of laws' that contains all necessary relations derived from the nature of things. However, he did not distinguish between the normative laws of morality and the descriptive laws of science. In political theory Montesquieu established two principles: the importance of society's solidarity of interest, and the diffusion of civic virtues.

Montesquieu advocated separation of power between three distinct governmental units, in order to protect individual freedom. His book Esprit des lois (Spirit of the law) was considered the most important book of the eighteen century.

H.C. Wright (1982) in his argument for librarianship based on the knowledge about human life rather than on the action theory, cited Montesquieu, who in his concept of science of society opposed equating social realities with physical laws of nature.

Relevance:
P: Rational political and social philosophy focusing on separation of power and development of the science of society.
L: Importance of social, geographic environment, cultural customs and rules. (1 citation)

MOORE, GEORGE EDWARD (1873-1958)

An English realist, opposing the idealism in metaphysics, epistemology and ethics. Moore was a founder of neo-realistic theory of epistemological monism, He considered philosophy as the analysis of common sense. Nature is non-mental and is known directly in perception, the knowledge process does not change a physical object.

Moore distinguished between an act of sensing the object and the object itself (the awareness of 'whiteness' is not itself white; the whiteness is objective, the awareness of it subjective). Relations are external, not internal, while 'good' in ethics is undefinable, immediate, grappled by intuition, not by analysis.

His philosophy of realism had a significant impact on the analytical movement, especially on Bertrand Russell in his period of Hegelian idealism; although later their views shifted: toward common sense and ordinary language in Moore, and toward science, mathematics, logical analysis and formal language in Russell.

Moore maintained that many of our confusions are created by misunderstanding the meaning based on different ideological position, political or other beliefs, or - in case of philosophers - by attempting to convert the common sense meaning in ordinary language into abstract concepts.

In ethics, Moore formulated naturalistic fallacy of deducing moral categories from empirical or metaphysical concepts. To him 'ought' does not follow from 'is'; ethics is the search for the foundation of morality (R.Capurro, 1985). It, Capurro argues, cannot be precise, but offers only suggestions for personally or socially responsible action.

Moore's philosophy was in a form of inquiry, not as a close philosophical system. At times he held simultaneously two incompatible views, unable to choose between them. He also accepted without questioning some philosophical prejudices such as e.g., the notion of an act of consciousness and an object of that act, leading to nonsense such as a proliferation of entities.

Some time ago, American Libraries published a long essay on 'Analytic Philosophy in the 20th Century' (T.M. Reed, 1971), discussing the contribution of major philosophers, including Moore, to the development of analytical approach in philosophy and its application to other issues such as (a) historical explanation based on the analysis of causal language, and (b) ethical evaluation expressing feelings or attitudes rather than statements of facts. This approach may offer insight to practitioners of various disciplines by focusing on conceptual and methodological issues in particular fields.

Relevance:
P: Realistic philosophy opposing metaphysics, advocating monism, analysis of common sense and making distinction between sensing the object and the object itself.
L: Conceptual and methodological insight into the library profession. (2 citations)

MORRIS, CHARLES W. (1901-)

Morris developed foundations for the science of signs (semiotics), analyzing their meaning in terms of their influence on behavior. He subdivided semiotics into semantics (significance of signs), syntactics (compound signs) and pragmatics (origin, use and effects of signs). Each of them can be either pure (language about signs), descriptive (actual signs) or applied (knowledge about signs applied to various purposes).

Morris restricted communication, to signs that arouse common significata (what the sign signifies) by the production of signs. Language communication takes place when the signs produced are language signs. However, not all communication is language communication.

Pearson and Slamecka (1983) defined informatics as a semiotic discipline that encompasses information, computer science, engineering, technology, robotics, and cybernetics, addresses by Morris in the syntactic, semantic and pragmatic dimensions.

Morris defined communication as an instance of establishing a commonage (making common some properties of a number of things, such as radiator communicating heat); and he limited it to the use of signs in establishing a commonage of signification. Thus he perceives second order of communications (such as in a case of radiator) which are the channels; the commonage is established when symbols are used to form ' common mental orientation' toward a particular field of reference (K.J. McGarry, 1976).

Morris identified 5 attributes of language: (1) plurality of signs; (2) each sign is understandable to the interpreter of

signs; (3) the signs are 'comsigns' i.e., producible by interpreters family with the same signification to both the producer and interpreters; (4) pluri-institutional signs, i.e., have consistency of meaning or significance; and (5) signs must constitute a system of interconnected signs forming 'sign-processes'. He defined language as: 'a set of pluri-insituational signs with interpersonal significata common to members of an interpreter-family... producible by members of the interpreter-family and combinable ...(in some specific way) to form compound signs" (Shera, 1972).

Relevance:
P: Semiotic study of the impact of meaning in language on behavior. Communication considered as a device to identify common properties among different things.
L: Informatics defined as a semiotic discipline. (3 citations)

NAGEL, ERNEST (1901-1985)

Nagel's philosophical naturalism was based on logic and scientific empirical methodology, applied to law, history, mathematics, natural and social sciences. His philosophy of science rested on the analyzes of the nature of scientific explanation in physics and biology, logic of scientific methodology and knowledge.

Nagel maintained that a comprehensive social theory will have to be based not on the historical study of civilization, but on a methodology which does not depend on individual viewpoints but on evaluation of evidence that is consistent with the theories of the natural sciences. It will have to be very abstract in order to embrace cultural variations.

Nagel defined (with M.R.Cohen) science as a general and systematic knowledge with specific propositions deducted from general principles or fundamental hypotheses (F. Machlup, 1980).

In his search for a theory of librarianship, R. Bryson (1970) incorporated three components of Nagel's theory; (1) an abstract calculus (a logical skeleton), (2) a set of rules (assigning empirical content to the abstract calculus) and (3) a model (an interpretation of the abstract calculus).

Relevance:
P: Philosophy of science focusing on analyzes of the nature of scientific explanation and the logic of scientific methodology and knowledge. Social theory must be abstract and based on a methodology consistent with the theories of the natural sciences.
L: Nagel's abstract calculus, its rules and interpretations can be applied to library theory. (3 citations)

NEWTON, SIR ISAAC (1642-1727)

Newton's major contribution to science was the development of a synthesis that unified scientific developments in the theory of universal gravitation (the universe is composed of material bodies moving in space and is controlled by mathematical laws such as the law of gravity) and the laws of motion.

His three laws of motion consist of: 1. The Principle of Inertia: all bodies stay in the state of rest or uniform motion in a straight line unless compelled to change that state by other forces. 2. The change of the motion of a body is proportional to the force acting upon it, and such a change occurs in straight line from the acting force. 3. To every motion (action) there is an opposed and equal motion (reaction); the mutual motions

(actions) of two bodies on each other are always equal (Angeles, 1992).

Newton formulated the method of procedure in natural philosophy in his Mathematical Principles of Natural Philosophy: (1) Only true and efficient causes are to be used. (2) The same natural effects must be assigned the same causes. (3) The universal qualities of all bodies within a given experiment consist of the qualities which do not admit intention or remission. (4) In experimental philosophy we use propositions collected accurately. They are as true as possible, derived by general induction from phenomena, notwithstanding any contrary hypotheses, until other phenomena occur that are more accurate or liable to exceptions. (5) Anything that is not deduced from the phenomena is called a hypothesis, which, whether metaphysical or physical, has no place in experimental philosophy (Principle that Newton himself disregarded for example in his work on optics) (Ibid.).

Certain mathematical structures such as Newton's laws of motion, mirror reality in a mysterious way, for which there is no rational explanation (Young, 1987).

Newton's perception of patterns in the mutual relations of physical bodies laid foundations for an entire cluster of physical sciences.

As he suggested discovery is not an accident but a result of a well-defined hypothesis (Shera, 1065).

His saying 'If I have seen farther it is by standing on the shoulders of the giants' - it relates to the fact that scientists always depend on what was written before (Shera, 1976).

E.A. Bierbaum (1990) argues that Newton's deterministic description of human behavior follows the principle of Least Effort, the principle that Bierbaum recommends as a unifying concept in library research and practice.

J. Gleick (1987) noted that modern science eliminated Newtonian illusion of absolute space and time by the theory of relativity, and his dream of the controllable measurement process by the quantum theory.

Relevance:
P: Newton's philosophy of science unified the theory of universal gravitation and the laws of motion.
L: Importance of a hypothesis. (5 citations)

OCKHAM, WILLIAM OF (c.1285-1349)

Ockham's nominalism distinguished between the real and grammatical meanings of the universals. His principle of economy, simplicity or parsimony (Ockham's Razor) is a methodological principle saying that 'entities are not to be multiplied beyond necessity'. It implies: 1. choosing the explanations of a phenomenon with few assumptions, explaining satisfactorily relevant facts. 2. The simplest explanation is probably the true description of reality.

'Ockhanism' may be interpreted: (a) logically, as the use of terminology and technique of logical analysis, (b) epistemologically as expressing the thesis that universality is attributed to terms and propositions only, and not to things

existing apart of the discourse, and (c) theologically stating that no theological doctrine such as existence of God is demonstrable philosophically; religious doctrine rests on faith alone and is not subject to metaphysical or scientific explanation.

Ockham held the view that form is a wholly physical or material phenomenon (Young, 1987).

S. Gorn (1967) considers Ockham's principle of economy as one of the components describing the nature of Computer and Information Sciences. It calls for deletion of all unnecessary hypotheses, stressing simplicity in esthetics, redundancy in logic and precise expressions in the linguistics.

'Ockam's razor' expresses a general principle in the philosophy of science that the simplest explanation (i.e., using the smallest number of assumptions) is the most likely (D.A. Kemp, 1976).

C.J. Fox (1983) in his analysis of the term 'information' considers 'Ockham's razor' principle of simplicity as a particularly important concept in the ontological investigation.

Relevance:
P: Initiation of empiricistic and nominalistic philosophy.
L: Application of the Ockham principles of simplicity in information science. (4 citations)

ORTEGA, Y GASSET JOSE (1883-1955)

Ortega was a humanist trained in the Neo-Kantian tradition, but he considered 'life' rather than 'thought' to be of primary importance. His first philosophical principle was: 'I am myself plus my circumstances', i.e., one is composed by his or her inner

self and circumstances. Life is not so much 'being' as "coming to be' in terms of purposes and values aimed at, thus depending as much on future as on the present and the past. Life and reason are the two poles of a problematic situation, but they function together not as a dialectical opposition but as a necessary coexistence.

Ortega addressed the role of librarian in his 1934 essay in which he advocated more attention to be paid to the book as a living unit, with librarian performing the function of policemen, controlling the production of books by applying new bibliographic techniques. The mission of the librarian is to be 'the doctor and the hygienist of reading'. The increase in the reading is in part the result of librarians effort to ease the access to books, which however often do not reflect readers need (1935). He stressed the importance of library control of book selection as a means of improving the flow of good literature (Nitecki, 1997).

Ortega said that the mission of the librarian ought not to be the administration of books, 'but the adjustment, the setting to rights, of that vital function which is the book' (Shera, 1973).

Ortega's definition of the mission of librarianship should be interpreted in the context of (a) the 'mass man' (shallow, self-centered, ignorant, intolerant, careless reader), (b) the role of the book (an uncontrollable treat to society) and (c) librarians' professional responsibility (to control the production of books). This approach created a paradox of simultaneous approbation and rejection of his philosophy. This ambivalent position of American librarians, in sharing with Ortega his concern about the low

level of publications and their indifference to his concept of selection by censorship contradicted democratic philosophy of library service (J.F. Sosa & M.H. Harris, 1991).

R. G. Horowitz (1900) considers Ortega's definition of knowledge as a relative concept, subject to different viewpoints that complement each other. J.C.McConnell (1992) sees his metaphysically useful approach to the definition of library discipline.

Ortega felt that verbally expressed knowledge is superior to the one that is perceived; it is difficult to describe in words what one sees, i.e., knowledge includes nonverbal thoughts (F. Machlup, 1980).

Ortega focused on the purity of information as a means for screening the undesirable books, concerned about the form of the material (the book) rather than the worth of the institutional function of librarianship (J.M. Whitehead, 1980).

He perceived the role of the librarian as a filter between the massive publications of various quality and their readers (K.J. Weintraub, 1961), and saw the librarian as a gatekeeper of the last resort, determining what should be published (P.Wilson, 1983).

L. Asheim (1982) in his essay on the application of Ortega's philosophy to librarianship argued for the need to extend librarians' responsibility to 'filter' acquisition by distinguishing between 'selecting' and 'prescribing' reading material.

D. Gore linked Ortega's dissension with intellectual freedom to Plato's call for government censorship of undesirable books (1970, 1973). In his argument for librarians neutrality, Gore suggested resource sharing as a means for disposing unwanted books (1982). His essays were criticized for distorting Ortega's views and praised by others for expressing the views of most academic librarians (A.B. Lemke & others, 1971).

C.Millis (1970-71) in her annotated list of essays in librarianship includes Ortega as one of the philosophers influencing the development of a library viewpoint.

McCrimmmon (1994) noted Ortega's call for librarians acting as controllers of book production. E. Oboler (1979) quotes Ortega's notion of a librarian as 'master of the raging books' serving as a filter imposed between the reader and the 'torments' of books; A.R. Roberts refer to his notion of 'librarian as a policeman of books'(Roberts, 1984).

According to J.Thompson (1974) Ortega was the first philosopher to point to librarians the power of social and political influence on the cause of the freedom of though. He maintained that the democratic societies are 'the daughters of books'.

Relevance:
P: Humanistic philosophy focusing on the primacy of life, reason and circumstances.
L: The professional mission of librarianship considered in terms of social necessity and political power in controlling reading material. (19 citations)

PARMENIDES (fl 469 BC)

Parmenides introduced the concept of 'Being', opposing Heraclitus' 'Becoming', as an argument for permanence. This was the basic doctrine of idealism. The thought without being or being without thought cannot be, hence the two are identical. To think we must postulate the existence of something. 'Being' fills the space, non-being is empty space. Since only one 'Being' without inner differentiation exists; the particularity of individual things is only an appearance or illusion. A distinction is made between truth and opinion.

Parmenides defined the features of thought and reality in what are now called laws of (a) Identity (Being is, non-being is not), (b) Contradiction (Being cannot be what it is not), and (c) Excluded Middle (Either something is or is not). The law of Identity implies the unchanging, present and eternal Real Law of the Conservation of Energy that holds this to be true quantitatively.

H.C. Wright (1986) refers to Parmenides extreme rationalism based on permanence of being, and his consideration of everything, with the exception of 'change', as unreal. Instead, Wright calls for a dualistic, psychophysical and interactive philosophy of librarianship, distinguishing between physical symbols and formal, ideative referents.

Relevance:
P: Philosophy of Rationalism stressing the permanence, homogeneity and unchangeability of 'Being. Distinction between 'being' (essence) and 'becoming (actualization of potentials).
L: Only change is real; justification of the necessity to update library operations. (1 citation)

PASCAL, BLAISE (1623-1662)

A French philosopher (developed methods of discovering truth and basic skepticism), a mathematician (proposed probability theory), a physicist (studied vacuum), a theologian (argued for the existence of God) and an inventor (conducted numerous scientific experiments and invented a calculating machine). In his later life focused on the study of spiritual issues of human beings, considering faith sounder than reason and senses. People are aware of space, time, movement, number and truth, and take philosophical midpoint position between Skepticism and dogmatism, misery and happiness.

Al Gilchrist (1980) traced the beginning of information science to Pascal's works. His calculating machine eventually leads to a computer (Young, 1987).

Relevance:
P: Philosophy of culture combining intellectual aspects of ideas in mathematics, physics, science and religion.
L: Calculus as an antecedent of the computer. (2 citations)

PEIRCE, CHARLES SANDERS (1839-1914)

Not fully recognized in his own life, Peirce's main contribution was in his impact on other philosophers.

Peirce considered logic as the general theory of signs constituting the heart of philosophy. He introduced pragmatism as

a method of philosophy: the meaning of a concept consists of the sum of practical consequences, which are necessitated by the truth of an intellectual conception. His method examined empirical consequences as the test of the meaning of an idea.

Peirce's ethical principle says that in the physical duration of all finite things there is a need for logical identification of one's interest with these of the unlimited community of persons and things.

Peirce accepted the proposition that mind is different from a material reality; what we know about objective reality is the consequence of ideas about it, formulated in the form of the meaning applied to objects. ('Our idea of anything is our idea of its sensible effects') The ideas cannot be separated from human conduct. To have an idea is to be aware of its effects, consequences and probability. True knowledge depends on its verification in actual experience.

His pragmatic philosophy stimulated the development of progressivism in educational theory that focused on the practical aspects of life (learning by doing) and problem solving, on interdisciplinary approach to education and on close cooperation between school and society (C.Pearson and V. Slamecka, 1983).

C.H. Rawski (1973a,b) noted that Peirce always made distinction between two branches: (a) theoretical aiming simply and solely for God's knowledge of truth, and (b) practical knowledge useful in life.

Rawski cited some of Peirce's advices concerning research that may be of use to librarians: (1) The knowledge essential to

librarianship should be applied to the present, actual situation, (2) the specific professional objectives should not block the way of inquiry, (3) the research should aim at the synoptic grasp and description, analysis and explanation based on the view of librarianship as a field of study, not as a professional activity.

Relevance:
P: Pragmatics as a philosophical method; research should be relevant to contemporary issues, free of professional limitations.
L: Approach to librarianship as a field of knowledge. (2 citations)

PEPPER, STEPHEN COBURN (1891-1972)

An American philosopher interested in the metaphysical aspects of knowledge, ethics, aesthetics and the philosophy of arts. Pepper's contextualism (a derivative of pragmatism as one of the four major world hypotheses) was introduced to library literature by J.Z. Nitecki (1959) as a possible model for the philosophy of librarianship. Pepper's concept of metaphor connected qualitative experiences of the process (feelings) with its objective scientific description (conceptual analysis) within the system of science. His approach is empirical allowing for no dogmatic hypotheses, or self-evidence data, open to further investigations and corrections.

Root Metaphor Theory of Metaphysics developed in Pepper's World Hypotheses; A Study in Evidence influenced J.Z. Nitecki's ethical viewpoint (1959), and his metalibrary model of conceptual, contextual and procedural aspects in the theory of librarianship

(1963, 1964). The metaphysical structuring of postulates is based on Pepper's World Hypotheses (J.Z. Nitecki, 1968a, 1979, 1980)

Pepper's contextual approach was also used by R.G. McInnis (1982) in developing his own structural model for the teaching of library research based on a metaphorical model.

J. Bekker (1976) in defining library purpose cited Pepper's notion that in purposive behavior certain ends are sought (appetition) and certain are avoided (aversion).

Relevance:
P: Metaphysical bases for pragmatism.
L: Application of contextual approach to the definitions of library purposes, research and education. (8 citations)

PIAGET, JEAN (1896-)

Piaget is known as a psychologist and philosopher, primarily in child psychology. He reexamined experimentally a number of philosophical questions in the context of child development, leading to a new discipline, called genetic epistemology. Among the ideas studied were the abstract concepts such as classes, relations and numbers as well as physical concepts of space, time, speed atomism, conservation and chance, all derived from human behavior.

His methodology was based on pragmatic aspects of logical and mathematical processes, initially manifested in the child behavior, developed later into conceptual abstractions. In this internalized process, things are replaced by signs, order is established by trial and error arrangement of concepts, which are later inverted into thoughts.

Piaget divided sciences into logico-mathematical, physical, biological and psycho-sociological; each further subdivided into: (a) subject-matters and materials (numbers and functions), (b) conceptual structure (description, interpretation, theory), (c) endemic epistemology (evaluation of the discipline in terms of sources and methods used) and (d) derived epistemology (comparison of the endemic sources and methods with those developed in other disciplines). He further distinguished between sciences based on causative relations (eg physical and biological) or logical implications (logico-mathematical and psycho-sociological) (C.H. Rawski, 1973).

The controversy over abstract-physical reality in the 20th century resolved itself into the analysis of the space-time continuum as a geometrical or morphological identity and the question whether the process is material or physical. Piaget sees it as a dialectical game in which scientists assumes that the motion oscillates between a subordination of geometry to the properties of matter. It is not clear if that process is the geometrization of mechanics or its reverse, a convergence of concepts toward a common synthesis, rather than a process of breaking down of one discipline into another. Whether the process is geometric or physical is arbitrary. He also refuted the notion that formation and use of concepts are language dependent, since pre-language children can form some basic concepts (Young, 1987).

Piaget demonstrated that in concept formation the first, fundamental source of knowledge is action (children's manipulative skill). This suggests that old classificatory

systems depended too much on arranging the description of one class into a single series (Shera, 1965).

L.Petocz (1969) considers Piaget's research in child psychology as highly relevant to library science by providing a genetic dimension to epistemology of communication.

H.G. Furth (1974) maintains that Piaget's developmental theory of knowledge can be fundamental in the study of information. Information is either a coded fact, a static aspect of a given configuration (a figurative aspect of knowledge) or an operative knowing, a how to act process of knowing. The figurative aspect of knowledge is given to an individual, the operative aspect assimilates what is given in the individual's mind.

J.G. Pansegrouw (1990) recommended Piaget's theory of information-seeking behavior as a model in library and information science. He prefers Piaget's focus on cognitive processes over the Darwinian's approach which fails to recognize relationships between intellectual freedom and social responsibility. Piaget proved that learning depends on the accumulation of sense-data obtained by observation or experience (Foskett, 1970). He believed that perception is based on learning process that involves classificatory and relational activities. The logical structure of our thinking allows us to study the thinking processes formally.

Piaget's concept of 'operative' knowledge, the know-how to act in a given situation is hospitable to the contextual level of metalibrarianship, describing knowledge prescriptively in an effective use of actual experience (J.Z. Nitecki, 1985). His

cognitive structure defines people's way of thinking in terms of a search for equilibrium between the old and new experiences of reality - this in librarianship relates to the patron's intellectual level which determines his attitude toward a book, and consequently influences the library's information retrieval strategy (J.Z. Nitecki, 1987).

Piaget maintained that a lack of units of measurement handicaps the study in humanities (P.Wilson, 1983). His contribution to cognitive processes is discussed by L.E. Bourne and others (1979); De Mey (1984) points to the importance of understanding the dynamics of conversation in librarianship, illustrated by Piage model.

Relevance:
P: Philosophy of psychology focusing on genetic epistemology.
L: Information-seeking behavior as a model in the library and information science. (12 citations)

PLATO (c.428-348 BC)

Plato was the founder of the Academy, a school dedicated to the study of mathematics, logic, philosophy, sciences, ethical, political and legislative concepts. In his writings, his teacher Socrates takes the central role as a person in search of truth.

Plato developed first complete system of philosophy describing the meaning of knowledge that expresses the nature of the universe and humans living in it, and their virtues guided by the principles of conduct. In the word of Alfred N. Whitehead modern philosophy is but a series of footnotes to Plato.

R.A. Burke (1953) sees Plato as the last representative of the Hellenic culture characterized by the oral communication about

'truth by argument', prizing wisdom above knowledge. This era was followed by the Hellenistic period started by the Aristotelean treatises.

- On Ethics and aesthetics:

Plato's early Dialogues address the question of the meaning of moral and esthetic statements such as beauty or goodness, assuming that everyone who knows what e.g., goodness means will be good.

- On metaphysics, epistemology and value theory:

Plato's middle period focused on the meanings, origin, nature and value of the concept 'love'. In his later period, Plato discusses the notions of one and many, unity and variety, similarity and difference, the relationships between real world and ideal forms. As a dualist he distinguished between mental and psychical phenomena (B. C. Brookes (1980a).

H.C. Wright (1978) considers Plato a supreme immaterialist who studied objective and subjective aspects of ideas and systematized the form philosophy. His dualism was rejected by Mead, but transcended by Popper into the third world of forms and ideas (H.C. Wright, 1986).

D.A. White (1978) distinguishes between Plato's two worlds (a) absolute reality, the forms, which are not created, they always are, and (b) continually changing derivative reality; they relate to each other through participation.

K.J. McGarry reviews Plato's forms as imperfect representation of the ideal world. Plato theory of form relegates the world of experiences to an imperfect representation of that ideal world.

To him thought required mental symbols as images; when thinking about the physical world, the thoughts became small visual replicas of objects they represent (K.J. McGarry, 1975).

As a poet, Plato was sensitive to Form, considering anything material as secondary, making distinction between form (unexpressed, ideal reality) and its poetic expressions. There is also a difference between thought and its expressions in any material system. Language is a form, not a substance; it is not defined by substance, but defines it. His philosophy was two-world (H.C. Wright, 1977).

Young (1987) maintains that the form is not a Platonic ideal or abstract essence of objects and processes but a most powerful and least understood physical manifestation of the entire mass-energy universe.

Plato's science of 'Division' suggests the science of mutually exclusive classification. His dialectics provided method for the study of first principles (Shera, 1965).

Plato regarded the realm of abstract ideas as the only one that provides harmony and happiness. He divided human life into the realm of necessity (the cause-and-effect relationship with nature) and of teleological causes (man, free from necessity, striving for perfection). Translated to librarianship: The Realm of necessity includes communication. That is, essential for social functioning, and creative writing with no direct practical purpose beyond self-expression (B. Landheer, 1957).

The 'knowing that' has a special status among scientists as an inheritance from Plato's concept of 'superior knowledge'

expressed in declarative statements, propositions, categorical assertions and hypothetical syllogism (F. Machlup, 1980).

- On reality:

Major components of Plato's philosophy include the following principles: (1) There are two kinds of reality (a) the real, perfect, nonspacial and nontemporal and unchanged ideas (forms) and (b) the illusory spacial and temporal world of changing concepts based on our senses, reflecting imperfectly the real world. (2) Abstract concepts (universals, souls, forms and essences) exist in the real world independently of human perceptions of them. (3) Human beings develop their morality and spirituality through the use of reason which controls their emotional and irrational nature. (4) The philosophical knowledge of truth, beauty and goodness is essential as a guide in the person's conduct. (5) Life is an educative process based on individuals' own experiences within the social organization, discussed in the context of an ideal state that offers equal opportunity to all and rewards the best.

- On theory of knowledge:

Plato's theory of knowledge is interwoven with his theory of reality. He distinguishes between opinion based on sense perceptions and scientific knowledge of ideas (forms) based on mathematics and philosophy. His psychology is based on a triadic concept of souls (a) rational ruler of an organism, (b) spirited part of soul that triggers action and (c) the lowest in this hierarchy, acquisitive part of the soul.

- On education:

Plato's educational theory calls for 'drawing out' ('education') from the individual what he or she unconsciously already knows. Political philosophy is expressed by the concept of ideal state representing perfect social justice, advocating community style of life (semi-communism) for the upper classes of society. Aesthetic philosophy advocates representation of ideal rather than sense-perceived reality, the ethical philosophy is intellectualistic, considering wisdom as the greatest virtue.

K. Swigger & F.L. Turner (1986) recommend the use of Plato's Republic as a 'base book', a tool in solving many library problems in the teaching of the principles of librarianship. It provides system approach and analysis in discussing issues such as censorship and different social roles.

Western philosophy and philosophy of western education are based on Plato's teaching. Republic remains the classic statement of educational theory: good life requires good society which in turn depends on educational system that will bring that society into being and sustain it (Shera, 1972).

- Impact on:

(a) philosophy of librarianship.

B. McCrimmon (1994) discusses the philosophy of librarianship in the USA in terms of the Platonic idealism of universal concepts and ethical values and Aristotelean approach represented by the Chicago's Graduate Library School focus on sociological research and methodology.

In discussing the impact of various philosophies on librarianship, R. Staveley (1964) refers to Plato's belief in absolute value, which leads to a paternalistic view of society, and may have influenced the selection and access to library resources.

J.M. Whitehead (1980) refers to Platonic dialectical question and answers method as one of the possible ways to find out what library philosophy is about.

Plato's definition of reality in terms of rational ideas constitutes the bases for the conceptual level of metalibrarianship (J.Z. Nitecki, 1968).

(b) Information science.

R. Capurro (1991) in discussing the differences between epistemological paradigms of information science, differentiates between (1) the representation paragraph (human beings as biological information processors are knowers or observers of an outside reality; information science is preoccupied with the study of representation, codification and rational use of information). (2) The source-channel-receiver paradigm (communication is considered as exchange of information with information science which is concerned about the impact of information on its receiver) and (3) the Platonistic paradigms of two kinds: (a) materialistic (addressing search for information itself, not as a biological, psychological or sociological process but as objective nonhuman carrier) and (b) idealistic paradigm (considering knowledge as something objective in itself, independent of material carriers).

M.Heim (1993) discusses the concept of virtual reality in the context of Plato's philosophy.

Philosophy of Plato is followed by logicians who consider concepts as abstractions of the common elements shared by a number of objects (e.g., horsiness of horses or humanity of human beings). This differs from (a) cognitive approach which considers concept not as a discrete thing separated from other things, but as a relational idea, and (b) from the intellectual process of going beyond immediate perception of an object in a given information by guessing its additional properties (K.J. McGarry, 1981).

(c) The library profession:

M. W. Gregory (1983) relates the conflict within the academic world to three philosophers described by Plato: Protagoras (cynical and a careerist), Socrates (radical and a dedicated teacher in search of truth) and Plato himself (professionally polished with integrity but without narcissistic model for the library profession).

(d) library practice.

F. Stielov (1983) traces the concept of censorship to the Plato's' doctrine of the general good.

According to R.A. Fairthorne people use libraries to find out what people have to say; this follows Plato's notion of human ignorance.

The fear of new invention is illustrated by Plato's Socratic argument that invention of the alphabet will create

forgetfulness, by not using memory (Shera, 1973). Plato's dialectic was a method of studying the principles (Shera, 1976).
- Criticism of Plato.

L.V. Oracion in L. Carnovsky (1963) criticized Plato's concept of philosopher-king as a dream; S.L. Fesebmaier (1988) denounces Platonic totalitarianism and fear of change. D. Gore (1970) criticizes Plato's condemnation of writing, his opposition to the intellectual freedom and advocation of governmental censorship (Gore, 1973). M.G. Mason (1985) sees this opposition as a rejection of new technology. E. Gray (1986) explains Plato's opposition to writing because it provides information without dialogue, thus implying that instruction must precede reading.

V. Zwass (1983) rejects Plato's concept of ideal and disinterested search for knowledge in computer science, because it is often influenced by social needs.

Relevance:
P: The first fully developed idealistic system of philosophy. Immaterialistic study of objective and subjective aspects of ideas in a systematized, dualistic form philosophy.
L: Impact on the philosophy, theory and practice of the library and information science (33 citations).

POLANYI, Michael (1891-)

Polanyi, a contemporary scientist and philosopher, maintains that the concept of a 'person' as a person, based on the known laws of physics and chemistry, is a primitive and irreducible entity; a person can be an object of desires but cannot be loved. This reflects an important mutual exclusivity to the same situation by interpreting it either in terms of causes (natural

causes such as responses to stimuli) or reasons for these causes (e.g., justification for the behavior in a given situation).

Polanyi's studied epistemology in the context of the intellectual processes of individual (J.H. Shera, 1968).

Evidence is not provided in the nature, it is the product of personal judgement, accepting certain facts as evidence. Polanyi also makes a distinction between 'connoisseurship' (art of knowing) and 'skills' (art of doing) (F.Machlup, 1980).

Polanyi criticized the positivistic notion that in reality, mathematical relations between observed facts and metaphysical concepts are meaningless. Mathematics, he maintained, is a useful tool for dealing with phenomena, but it is not the phenomenon itself. This fallacy is evident also in some writings in information science (D.J. Foskett, 1973).

Polanyi divided the realm of human knowledge into public (written, explicit knowing) and private domains in our mind (tacit understanding). In his theory of 'inarticulate knowledge', he assumes that we know more than what we can tell ('tacit knowledge') (K.J. McGarry, 1975, 1976). That statement means that the process of cognition is subtle and largely unknown; one can understand something, but cannot explain it (Shera, 1973). The receiver of communication must himself discover that part of a message that was not fully communicated; that is why people react to nonverbal expressions. They participate in all acts of understanding, but comprehension is neither arbitrary nor passive experience, but an act of universal validity. Hence knowledge is conjectural. If a profession is focusing too excessively on

'know-how', it will degenerate into craft; too much theory leads to empty formalism (Shera, 1972).

The distinction is made between the truth and sophistry derives from the text of the message itself, the conception suggested by it, and the experience on which it may bear (Shera, 1965).

Polanyi also argued that in science, specialists have a thorough knowledge of only a small part of knowledge, but use their value standards in other fields. Yet, as P. Wilson noted, that does not assure the uniformity of standards used, since standards are not exact procedures (P. Wilson, 1983).

Relevance:
P: Philosophy of science is discussed in the context of intellectual processes of an individual.
P: Distinction is made between public written, explicit knowledge and private tacit understanding.
(8 citations)

POPPER, Sir KARL RAIMUND (1902-1994).

Popper was a philosopher of natural and social sciences. He maintained that philosophy like other sciences is based on trial and error conjunctions and refutations examined in the context of relationships between communicative language and the world it refers to. There is no one uniquely correct philosophical method; individual methods differ with the nature of problems examined and should always be closely related to other disciplines.

Popper rejected the intellectual authoritarianism of sacred texts, intuitions or human intelligence as the bases for establishing the truth. Although he also rejected the concept of

innate ideas, he accepted the expectation of general regularities in science as basic a priori phenomenon.

Popper followed Plato by transcending the dualism into third world of forms and ideas (C.H. Wright, 1986).

D.A. Kemp (1976) cited Popper's notions that: (a) most important point about knowledge is its truth. (b) The problem of induction is not to prove or verify a hypothesis, but to disprove or falsify it (i.e., hypotheses are not verifiable, but they are falsifiable). (c) Truth is the statement that contains the least error. (d) Credibility depends on the absence of negative evidence. (e) In Popper's three worlds (of material objects, of ideas and of the products of mind), librarianship is represented in the third world as organization of library and collection. (f) Existence of knowledge depends on the social acceptance of its compatibility.

Knowledge:

There is a need for new epistemology, a body of knowledge about knowledge. Till recent times, epistemology was a part of speculative philosophy (what we know), today it is more concerned with 'how' we know (Shera, 1972).

Knowledge is communicated through physical resources of World 1 and as symbols relating minds to ideas in World 2 & World 3. This physical symbols-ideative interaction provides the only access to private knowledge, and in that sense recorded knowledge and its interpreters form the bases for library philosophy; they relate abstract knowledge through physical carriers of recorded knowledge to library patrons (H.C. Wright, 1985).

B.C. Brookes (1974) notes a close relationships between Popper's concept of objective knowledge without a knowing subject, Shera's concept of social epistemology and Young's description of a biological role of exsosomatic brain.

Brookes agree with Popper's use of the terms 'knowledge' and 'information' interchangeably, and reject the concept of information as the hard fact, since human perception is based on prejudicial perceptions. S. Neill (1982) also notes that the use of 'knowledge' by librarians objectively as defined in World 3 is similar to Shera's concept of social epistemology.

Popper was interested in the growth of scientific knowledge, its accumulation and transmission between generations (J.S. Shera, 1968). He argued that we can never attain truth or even the substitute for it (Shera, 1973).

Three worlds:

The three worlds, physical, subjective and objective, interrelate with each other and together constitute the context of human activities. They are interactive; only users and information specialists can retrieve the accessible knowledge (subjective W2), since knowledge cannot restructure itself (objective W3) (K.J. McGarry, 1981, B.C. Brookes, 1980a, 1981, J.C. Eccles, 1983).

The three worlds are also interdependent realms, connected by communication links, while the division of reality into them avoided the problem of objective vs. subjective world (K.J. McGarry, 1975, 1976). E. Curras (1985) defines these three worlds

as materialistic and positivistic descriptions of man's external surrounding, man himself and his work.

Popper rejected the relationship between mental and physical events comparing the 'mental' stage to the concept of 'holeness' that is left after eating a donut (S.Neill, 1980).

And finally, his threefold interpretation of the world provides a bridge between conceptual, contextual and procedural levels of metalibrarianship (Nitecki, 1997).

Methodology of falsification.

Popper proposed falsifiability by observation as a criterion for empirical and scientific theories. The observations are always selectively undertaken in the context of some theory. The hypothesis is the beginning of knowledge based on individual, unpredictable insight, tested by deductive logic. More falsifiable hypotheses are less probable; and the one that escape empirical refutations are the most acceptable. The simplest hypotheses have the most extensive empirical content but are also least probable.

D.R. Swanson (1979) considers Popper's trial and error approach as proper for the library problem oriented methodology. In it, knowledge is discussed not as subjective and private, but as that which can be gained by solving problems evolved from previously criticized knowledge. Scientific knowledge, as distinguished from metaphysical interpretation is subject to testability (falsifiability). Popper's self-critical approach is based on the notion that the essence of science is self-criticism, not its objectivity or truth (D.R. Swanson, 1986)

On Science.

Popper maintained that scientific truth depends on the evidence at the time, and hence one can be sure of false propositions only (B.C. Brookes, 1984). The aim of scientific philosophy is to eliminate that which is false, rather than search for that which is true.

F. Machlup (1980) notes that the definition of science is a matter of convention; we cannot know, we only guess hence every scientific statement is tentative; the attempt to refute it is opposite to the pragmatic test of application; refutation can take place at the beginning of an argument as well as at the end; refuted theories should not be forgotten; the conclusions of theoretical knowledge become a prohibition or exclusion that forbid certain kinds of occurrence.

Popper separates science from metaphysics not by following logical positivists use of empirical verifiability to distinguish between meaningful and meaningless statements, but by purposive falsifiability criterion.

On Philosophy of social sciences.

There are no general evolutionary laws that could be used as the bases for social sciences (such assumptions are part of naturalistic errors); the approach in these sciences can only be piecemeal in a form of social engineering, not as a total reconstruction of the social order. This approach is used in an open society as means in solving its problems. It is preferred to a utopian approach, because of its often unyielding goals.

In political philosophy the main aim is not the establishment of good but the elimination of evil.

In ethics, value judgments are considered not as empirical statements but as proposals or decisions.

Impact on librarianship.

Most librarians were attracted to Popper's distinction among the three worlds. World 1, physical, explored by scientists and technologists, is the whole material world, the entire cosmos with all its matter and energy, including human brain. World 2, subjective human knowledge studied by social scientists and humanists; is a spiritual, conscious world of people's subjective experiences); it includes all thoughts, memories, ideas, creativity, of conscious experiences. World 3, manmade objective recorded products of human knowledge, the records of the other two worlds, is the world of civilized culture, of whole human creativity; the logical content of human argument, theories, ideas and production (S.Neill, 1985b).

Relevance of Popper's theory to librarianship is in his inclusion in World 3 books, libraries and computer memories; considering libraries as a world of storage of the objective contents of thoughts and values considered abstractly (S. Neill, 1982).

Popper ignored the concept of 'information', confusing it with sense-data (B.C. Brookes, 1980a, 1981).

<u>On Information</u>.

Librarianship and information science collect and organize records in World 3, their theoretical task is the description and

explanation of interactions between World 2 and World 3; with records becoming independent of knowing subjects (Popper's objective knowledge).

Correspondingly, in library environment, the reference work in World 1 provides hints that facilitate reference librarian interaction with the patron. World 2 describes the impact of the inquirer on the librarian cognitive, communicative and perceptive abilities to use information. World 3 refers to language used in communication, the meaning of knowledge, the subject-matter of library collections, and interviewing skill of a librarian. Popper's ontology should be used in library theory to: (1) understand the elements of information work, (2) realize that all factors are researchable, (3) use his model as a method in problem solving and (4) accept as a foundation in library philosophy (S.Neill, 1985).

S. Neill (1987) compares Popper and Brenda Dervin interpretations of subjectivity and objectivity in information: Popper's scientific, impartial and Derwin's personal and emotion-ladden approaches. Dervin's Information 1 (description of reality), Information 2 (individual mental image of reality) and Information 3 (subjective perception of reality) aim at the resolution of problems (S.Neill, 1987). In Popper's approach information is material in World 1, a product of mind in World 2, an analog of everything in World 1 and World 3, and it covers all manifestations in World 3 (A. Gilchrist, 1986).

The relationship between physical-mental realities is important in analyzing information: psychological experimentalists focus on

objective World 1; the psychoanalysts on the subjective, mental, cognitive reality of World 2 (B.C.Brookes, 1984).

Information retrieval provides physical and bibliographic access to documents (physical World 1) (P.Imgwersen, 1982). Popper considered the computer 'just a glorified pencil' (H.C. Wright, 1988).

Criticism.

Bergen (1980) is critical of Popper's idealism and his threefold model, claiming that the trend today is toward a dualism. He also compares Popper's three worlds with Nitecki's three primary components: World 1, material physical world versus generic book; World 2, psychological world versus user; World 3, mind's product versus knowledge. J.C. Eccles (1983) proposes dualistic hypotheses of psychophysical interaction. People are composed of two distinct and separate entities: (1) the world of physical realities, brain and body they control, and (2) the self-conscious mind, the psyche that makes up the self.

J.P. Menzel (1972) criticizes Popper indirectly for his scientific approach to history based on positivistic misconstruction of historical approach by using empirical methodology.

D. Rudd (1983) questions the use of World 3 as the epistemological bases for information science because it neglects the content and context of information; it excludes human knowing subject, yet cannot do without it. If that model is accepted, then information is seen to reside in things such as books. This is a passive interpretation of information. Furthermore, Popper's

rejection of 'truth' and impracticality of his notion of falsification is criticized since the criteria for determining what is knowledge are negotiated by human beings. The approach also ignores social context of information (D.Rudd, 1984).

Relevance:
P: Philosophy of social science based on conjunctions and refutations. Epistemology of knowledge about knowledge and methodology of falsification.
L: Inclusion of books, libraries and computer memory in Popper's World 3. (36 citations)

PROTAGORAS of ABDERA (ca 480-410 BC)

Greek Sophist and humanist, writing on grammar, logic, ethics and politics (civic virtues), Protagoras is famous for his relativism in knowledge and ethics ('homo mensura': 'man is the measure of all things, of those that are, that they are; of those that are not, that they are not'). Knowledge is based on our perception by which we know only what we perceived but not the things perceived. The only thing people can do, is to have an honest personal opinion about things, based on subjective perception accepted by others.

M.W. Gregory (1983) considers Protagoras model of 'the professional's professional', criticized in Plato's writings as a rich, cynical and archetypal careerist. Protagoras believed that reality is interpreted differently by each individual. This view relates to the approach in metalibrarianship, in which reality is considered as it 'seems to' appear to an individual patron (J.Z. Nitecki, 1988).

Relevance:
P: Relativistic view of knowledge based on individual perceptions of things.
L: A model for the library profession. (2 citations)

PTOLEMY, Claudius (C.127-151 AD)

An astronomer, Ptolemy refused to accept sun-centered planetary system because it contradicted common experience and ultra-empiricism.

D.Kaser (1971) compares librarianship, in its dedication to preserve, organize and disseminate 'the human message' with Ptolemy's geocentric view of the universe focused on egocentricity. W.E. McGrath (1981) in his theory of circulation used the Ptolemy example of explaining the rotation of stars. In library circulation we predict the behavior of library patrons based on the description of their behavior. Better the description provides better prediction.

Relevance:
P: Scientific philosophy of the earth-centered universe.
L: Egocentricity of librarianship. (2 citations)

PYTHAGORAS (c.572-487 BC.)

Greek mathematician and philosopher, Pythagoras was the founder of the school named after him, The school was based on philosophical, mathematical, moral and religious doctrine of dualism, that distinguishes between thought and the senses, the soul and the body, mathematical forms and their perceptible appearances. The universe was seen as harmonious system wit the goal of humanity to maintain similar harmony in ethics and politics. He believed in human transmigration (reincarnation) and purification of the soul and in the importance of numbers in determining the quality of things, expressed in terms of opposites such as odd-even or limited-unlimited.

In mathematics Pythagoras is credited for discovering the relations between sides in a right triangle (The Pythagorean theorem). He belief that world-intelligence is demonstrated by the intelligible order of numbers; this can be considered the beginning of a conceptual tradition and consequent conceptual level in metalibrarianship (J.Z. Nitecki, 1968).

Relevance:
P: Dualistic philosophy and harmonious system.
L: Beginning of conceptualism, and a prototype of conceptual level in metalibrarianship. (1 citation)

ROSS, WILLIAM DAVID (1877-)

A British Aristotelian scholar and interpreter, writer on morality and ethics, Ross was known for his 'practical wisdom' and speculative ability.

In ethics Ross was an intuitionist. Right and wrong are indefinable, irreducible objective qualities. Although moral goodness is part of motives, rightness of an act is independent of it. Therefore there is a distinction between the 'act' (what is done) and 'action' (the doing of an act); action can be either morally bad or good. There are four kinds of good things: virtue, knowledge, pleasure and allocation of pleasure and pain according to merit. And there are three specific duties: reparation, gratitude and keeping faith.

In discussing relationships between intellectual freedom and censorship D.V. Ward (1990) relates to deontological theory of Ross that right action is determined by factors other than its consequences (such as the intent, justice and duty).

Relevance:
P: Intuitionist definition of ethics.
L: Relationships between right action and its consequences. (1 citation)

ROUSSEAU, JEAN JACQUES (1712-1778)

Rousseau, a French philosopher and man of letters, was critical of Western civilization's deviation from the natural conditions of existence. In nature all men are equal, but through the influence of society and civilization they become unequal. He stressed 'general will' over the will of an individual. The state existence is determined by the agreement among people to live together. Rousseau's social contract is based on the notion that 'man is born free, and everywhere he is in chains.'

L. Carnovsky (1944) notes that American 'social contract' transfers individuals' rights to the elected representatives who act for those individuals.

In education Rousseau advocated an approach based on the connections between nature and experience. He did not valued books in teaching, because they reinforced the artificiality of civilization.

His views influenced future pragmatic education, considering a child as an organism going through various stages of development, with emphases on what is natural for a child and in his interest.

Relevance:
P: Critique of cultural philosophy for departing from natural conditions. The priority of 'general will' over the will of the individual.
L: Criticism of books influences on chold's development. (1 citation)

ROYCE, JOSIAH (1855-1916)

Royce was an American philosopher, a Neo-Hegelian, Synthetic Idealist. He maintained that (a) our minds are manifestations of the reality created by the absolute all-inclusive mind, (b) knowledge is an interpretation of that reality and (c) thought and being are one. The goal of an idea is to attain reality by changing from its general and incomplete, internal meaning, to the concrete and perfected, extended interpretation of that meaning.

Royce identified four different philosophical approaches, each representing a partial truth, all aiming at the same goal: the realistic (the objectivity of the real), the mythical (the immediacy and satisfaction), the critical rationalistic (analytical structure of reality) and the synthetic idealistic (the truth as the whole).

The formulation of the final principles is the goal of metaphysical logic while the principle of loyalty is the final goal of ethics.

Pierce Butler's metaphysical approach was influenced by Royce's dichotomy between phenomenal and noumenal realities, in rejecting behavioristic interpretation, and stressing instead the importance of technological scientific and humanistic cultural approach (C.Terbille, 1992).

Relevance:
P: Idealistic definition of ideas as purposes and plans for action. External meaning of reality depends on its internal interpretation based on the criterion of 'embodiment of purpose'.
L: Influence on Pierce Butler's metaphysics. (1 citation)

RUBAKIN, Nicolas (1862-1946)

Rubakin was a Russian philosopher representing extreme Benthamite view. He introduced the theory of bibliopsychology, maintaining that the meaning of the content of book changes with each reader. His theory was popular in Central Europe and influenced Polish research on reading (D.M. Gorecki, 1976). His work was ignored in English-speaking countries, until their popularization by series of essays by S. Simsova (1969).

Rubakin participated in the Russian revolutionary activities, but not as a communist, and was exiled from Russia for a short time by the Carist regime.

S. Karetzky (1982) discussed extensively Rubakin's biblio-psychology as a science of the psychology of reading based on the belief that the readers reactions to books reflect their psychology rather than the content of the book. According to Rubakin, the central goal for people should be an attempt by each individual and each society to obtain knowledge, with the library's role to guide readers toward that goal, by providing them the criteria for judgment.

The process of book reading involves four basic components: (1) facilitators of books' providing accessibility (publishers, librarians etc.), (2) a reader, (3) a book and (4) an environment. Rubakin hoped for the development of bibliopsychological classification of books, which together with the classification of readers would allow for matching individual readers' interest with the books in library collection. Such a classification would reflect the degree of books

objectivity/subjectivity, egocentricity/social attitude, and rational/irrational, inductive/deductive, analytical/synthetic ways of thinking.

His philosophy was based on the belief that striving for knowledge is central for individuals and their society. The role of the librarian is to guide the spiritual ascent of readers through education.

He was criticized by D.E. Gerarad (1983) for measuring readers emotional responses statistically, which by itself adds nothing to the understanding of readers' relationship to the authors.

As noted by Karetzky (1982), Wellard (1935) considered Rubakin's work subjective, daring and productive. He accepted Rubakin's focus on readers' psychology and approved his social ideas, but criticized him for his methodology which resulted in classifying readers by association (reaction to words depending on their interpretation). However, Wellard endorsed Rubakin's principles of books' selection: (a) goodness of the book is determined by its adjustment to the psychological needs of the reader, (b) apart from the reader, the book is a valuess instrument, and (c) the book must be an instrument of right, just and truth (S. Karetzky, ibid.).

Relevance:
P: Psychological philosophy of reading.
L: Bibliopsychological classification and reading process based on relationships between facilitators, readers, books and their environment. (4 citations)

RUSSELL, BERTRAND A.W. (1872-1970)

British mathematician, moralist, social reformer, logician and philosopher, Russell made major contributions in symbolic logic

and in the effort to identify philosophical method with that of science. He used Greek characters in some of his writings to serve speed and secrecy (J. Mountford, 1973).

(a) Philosophy.

The task of philosophy is to analyze data based on experimental science. Russell's philosophical views were constantly modified by rationalistic interpretations of the substance of universals. His explanation of matter and mind was close to Positivism and his essays on the nature of knowledge were based on a representational theory. At first, Russell interpreted reality as a system of perspectives. But influenced by physicalists interpretation of it, he expressed a pessimistic view on life, seeing Real as a neutral stuff of Neo-Realists. His analytical method was reductive, consisting of analyzing each issue in its smallest components in search of common essential features; it was also empirical, based on actual facts.

(b) Knowledge.

Russell maintained that knowledge and language are inseparable: language is the symbolic structuring of knowledge into communicable form. As an agent of communicating knowledge, language can shape the knowledge of individuals and groups (J.H. Shera, 1968).

Russell talks about specific knowledge in specific context and knowledgeability about things by understanding their observable causal relations, an aspect of contextual definition of knowledge (J.Z. Nitecki, 1984).

He distinguished between 'social knowledge' (collective capacity, encyclopedic contributions of many people) and 'individual knowledge' (individuals' knowledge obtained through experience). To him 'truth is the quality of belief in facts', one of several qualities of knowledge; all knowledge is uncertain, inexact and partial (F.Machlup, 1980).

(c) Ethics.

Russell wrote that ethics consists of general principles which determine but not provide actual rules of conduct (R. Capurro, 1985). The rules such as 'Thou shalt not steal' is not an ethical but moral issue. R. Capurro considers this distinction between ethics and morality as an misinterpretation especially if an attempt is made to deduct the concrete historical forms of morality from their ethical foundations.

(d) Symbolism.

The mathematical symbolism, because of its high degree of compression of information, became very important in modern technology utilizing the high generalization of modern mathematics. Russell and Whitehead defined the bases of mathematics as generalization of ordinary logic in the essay written almost entirely without words (C. Cherry, 1952). Both are considered co-founders of the analytic movement, with philosophy responsible for clarifying the meaning of propositions and concepts (T.M. Reed,1971).

Symbolic language devised by Boole and expanded by Russell and Whitehead allows for examining relationships between ideas in a way similar to algebra's manipulation of relations between

numbers. By means of symbolic signs large masses of complex concepts can be related to each other in algebraic terms, expressed as equations, rearranged, simplified and expanded. When translated into English they reveal new forms of relations and disclose inconsistencies; the binary system is based on two signs only (Shera, 1965).

Many concepts and relations in mathematics have no equivalent in a tangible world (K.J. McGarry, 1976).

Relevance:
P: Rationalistic approach viewing philosophy as a process of clarifying the meaning of propositions and analyzing data based on experimental science.
L: Binary system in symbolic logic as a method of analyzing relations between ideas. Distinction between 'social' and 'individual' knowledge. (9 citations)

RYLE, GILBERT (1900-1976)

British Analytic philosopher who concentrated on the issues related to the philosophy of mind and philosophical methodology.

Ryle criticized the traditional notion of mind as a non-physical substance in physical body, calling it a fallacy of 'the ghost in the machine'. This fallacy is based on the 'category mistake'. Ryle maintained that the concept of opposition between Mind and Matter is caused by the belief that both concepts are of the same logical type (J.Z. Nitecki, 1984).

Ryle was also one of the leading representatives of the ordinary language movement focusing on particular uses of words and detailed systematic analysis of mental concepts that are governed by behavioral criteria rather than by the personal unconscious motives (T.M. Reed, 1971).

C.J. Fox (1983) follows Ryle's distinction between the 'use' (a way or method of operating) and its 'usage' (a custom or practice of using the word). Only in the case of the 'use' the word can be misused.

Theory formation, according to Ryle, is making a path by marking the ground, where there was no path before (C.H. Rawski, 1973).

'Knowing how' has a direct pragmatic connotation, the 'knowing-that' can either strongly influences the knowers' action or merely satisfy their curiosity. The critics in their focus on the nature, the source and credentials of the theories, overlooked the issue of what it is to know and how to perform tasks. We learn 'how' by practice and education, seldom by theory. We build habits by drill and intelligent capacity by training; drill dispenses with intelligence, training develops it. Execution and understanding are different exercises of knowledge's certain tricks. Learning 'how' (improving abilities) is not like learning 'that' (acquiring information). Remembering (not having forgotten) is stored knowledge, recollecting (occurrence at a moment) is a retrieved knowledge (F. Machlup, 1980).

Ryle maintained that relating volition to the movement within the mind is a 'category mistake', because the will to act is also manifested in nonhuman organisms (Young, 1987).

Relevance:
P: Analytical philosophy focusing on linguistic confusions created by category mistakes.
L: Distinction between 'knowing that' and 'knowing how', and between 'use' and 'usage'. (6 citations)

SARTRE, JEAN-PAUL (1905-1980)

French radical atheistic existentialist, Sartre maintained that there is no ontological pattern for human nature and hence people are 'condemned' to be free, and must themselves develop values freely chosen. Man cannot escape from his own isolation, he can cooperate with others but without subjective communication; we are all objects to others, but need others in order to understand ourselves.

Consciousness is 'being-for-itself', its object is 'being-in-itself'. Emotions are the forms of unreflective consciousness; imagination is a total synthetic organization of consciousness. There is no meaning in the existence and no realm of ideas or independent physical reality with its own independent meaning. Existence precedes essence. The meaning of concepts such as 'nature', 'law' and 'sciences' are manmade, each meaningless without specific human interpretation.

Politically, Sartre was a Marxist, although he rejected materialistic determinism. He believed that individuals can find value by participating in the social and political processes and that society should constantly aim at greater freedom.

Sartre's philosophy is sometimes divided into four periods: (1) solipsistic despair (one cannot prove the existence of others). (2) Negative spirit of resistance (there are contradicting attitudes toward others: love, language, masochism, and indifference, desire, hate, sadism). (3) Existentialism as a Humanism (self-assurance of one's own thoughts). (4) Critique of

Dialectical Reason (existentialism as a humanizing influence within Marxist system) (D.D. Runes, 1983).

Sartre once wrote that: "man is nothing else than his plan; he exists only to the extent that he fulfills himself; he is therefore nothing else than the ensemble of his act; nothing else than his life" (Essays in Existentialism, quoted by D.D. Runes, 83).

R.J. Howard (1982) in his definition of Hermeneutics refers to Sartre's extreme view of value system of individual, responsible in part for the kind of reality we perceive.

In discussing librarians' role as an educator, Michaels (1985) identifies Sartre's existential truth of existence as one of the value concepts, but recommend the propositional truth based on the hypothesis followed by its proof.

Relevance:
P: The Existential notion that existence precedes essence.
L: The meaning of ideas is manmade and subject to human interpretation. Impact of existential value system on perception of reality. (2 citations)

SEXTUS EMPIRICUS (c.200 AD)

Sextus was a Greek philosopher and physician arguing against dogmatic claims to absolute truth in the theory of knowledge and in logic. His skeptical empiricism influenced future writings in science and ethics.

He maintained that: (a) one should suspend judgment about the possibility of knowledge. (b) No belief is either more or less probable or improbable. (c) One should not accept any belief. (d)

No belief or disbelief can be proven true or false. (e) Believing should be avoided because it creates emotional turmoil.

D. Gore (1970) feels that Skepticism can offer some insight into the philosophical foundation of librarianship by quoting Sextus three categories of thinkers: (1) dogmatists who believe that truth exist and they know what it is; (2) nihilists who deny the possibility of knowing the truth; and (3) Sceptics, the inquirers, the searchers constantly searching for truth. Neither of the first two categories of thinkers can tolerate the library collections containing variety of ideas on the subject of truth; only the third group appreciates the collections which mirror variety of opinions and theories.

Relevance:
P: Empirical denial of absolute truth.
L: Skeptical methodology (especially in research) suggested as the base for philosophy of librarianship. (1 citation)

SKINNER, B.F. (1904-)

A leading proponent of modern behaviorism in psychology, Skinner criticized philosophical approach to psychology for its introspective generalizations of human behavior. Yet, his utopian views in Walden Two express social radicalism by asking 'what is man?' To him human behavior is reinforced by specific environmental contingencies; individual consciousness and self-awareness are social products. Human beings are both controllers of culture and biologically controlled.

To Skinner, the 'thought is simply behavior - verbal or nonverbal, covert or overt' (In J.Z. Nitecki, 1987).

In ethics, something is 'good' if it is a positive reinforcer in the personal, social, and cultural survival context. Value is that which has desired reinforcing effects.

K.J. McGarry (1987) argues that Skinner's views are incomplete about (a) information (as an independent variable) and (b) an individual (as a discrete entity, a unit of production and consumption and social datum that can be easily computable). They do not include human activities of creating and transforming symbols, expressing meaning by different symbolic forms such as poetry or mathematics, each with its own validation, none reducible to other forms.

G. A. Miller (1983) in his discussion of relationships between language and communication cites Skinner's behavioristic notion of "speech as a chain of conditioned reflexes established by environmentally controlled reinforcements, ... elicited by occurrences in the environment of the appropriate discriminative stimuli."

Relevance:
P: Psychological philosophy interpreting human behavior (equated with thought) in the context of environment.
L: Speech is considered as a chain of conditioned reflexes. (3 citations)

SMITH, ADAM (1723-1790)

A professor of moral philosophy and logic, Smith is known for his essays in economics, The Wealth of the Nation, and in Ethics for his the 'Theory of Moral Sentiments'. He considered sympathy as the bases for moral consciousness. He was also interested in the methods for improving human conditions.

In USA the decision-making initiative was taken over by laymen, stressing Smith's concept of decentralization and minimal government involvement (N.Harlow & others, 1969). Smith division of labor contributed to the application of economics to the concept of management (J.L. Massie, 1987).

M.K. Buckland (1983) in reviewing the issue of needs for library services refers to Smith's definition of price as a sum of the disadvantages accruing to the purchaser.

Adam Smith referred to the knowledge as a product, subject to resource allocation, thus shifting the focus from the 'promotion' of knowledge as exogenous independent variable to an endogenous variable dependent on input and allocation of resources (F. Machlup, 1980).

Relevance:
P: Philosophy of social sciences aimed at the foundation of morals and improvement of human conditions. Knowledge considered a variable dependent on economic environment.
L: Application of division of labor in library management. (4 citations)

SNOW, Sir, Charles Percy (1905-)

Contemporary British philosopher, Snow introduced the concept of two competing cultures of humanities and technology (K.J. McGarry, 1975). These two cultures, artistic and scientific, differ in their ways of knowing with no common ground (D.E. Kemp, 1976).

C.P. Snow compares the roles of a scientist, a specialist, with these of a manager, a generalist, each manifesting distinct differences in moral and intellectual temperament (P. Wilson, 1983).

He considered the gap between the two cultures as an unmitigated disaster for a technological society, and that the two approaches to reality are complementary not antithetical (K.J.McGarry, 1976).

Snow examined the mutual misunderstanding, incomprehension and dislikes between natural sciences and literary scholarship of humanities, each groups reflecting two different intellectual and anthropological viewpoints. Machlup thinks that Snow confused 'mutual comprehension', between many fields in science and humanities, with mutual 'incomprehension' evident between various disciplines. The problem is less mutual incomprehension than a cultivation of snobbishness, resulting from overspecialization. (Humanists consider themselves the only intellectuals, and natural scientists think that they are the only scientists; accusing each others' research as either nonintellectual or nonscientific) (F.Machlup, 1980).

Relevance:
P: Philosophy of culture based on cultural duality between sciences and humanities.
L: Distinction between the specialist and manager in librarianship. (5 citations)

SOCRATES (c.470-399 BC)

Socrates is known to us primarily through Plato's Dialogues as a philosopher concerned about human being in relations to himself and his environment,

Philosophical viewpoint.

Socrates emphasized the personal, ethical and social aspects of life. His main focus was on (a) needs, goals and values of human nature, (b) the nature of language expressing thinking,

meaning, logic and intuition, (c) the nature of true reality defined in terms of perfect ideal forms, imitated in the present world, and (d) the nature of universal values (goodness, truth, beauty, justice, righteousness, courage and temperance).

Socrates considered himself a disinterested seeker of truth and moral values and a dedicated teacher, providing meaningful insights (M.W. Gregory, 1983). He was the father of humanism, ending the matter-philosophy of Ionian school and starting a never ended competition between two philosophical approaches, one stressing the physical nature of the universe, the other the formal nature of the human being (C.H. Wright, 1984a). Socrates calls for introspection (know thyself) and introduced an anthropocentric interpretation of life (C.H. Wright, 1986).

Socrates, as many other prominent philosophers of the time, was an unorthodox Sophist although he criticized shallowness of their movement. Most sophists were very exaggerated about written words and books; Socrates and Plato were opposing them (H.C.Wright, 1977).

Socrates believed that each word is just a name for an idea (eidos), a 'form' accessible not by senses but by the thought alone (Young, 1987).

Socrates criticized sophists for their erudition and careless logic (R.A. Burke, 1953). R. Capurro (1991) points to Socratic insight recognizing that knower is also a non-knower. This concept was further developed in contemporary cognitive approach, considering an 'anomalous state of knowledge' as a basic phenomenon in information retrieval process.

Methodology.

Socratic method consisted of asking series of pointed questions, without providing any relevant information, which would help the person being asked, to answer them. This method is based on the assumption that people are already born with knowledge.

M. De Mey (1984) stresses the importance of understanding the interaction between users involved in a simple conversation, illustrated by Socratic method of questioning. The questioning itself were concentrated on the simplicity of many assumptions about human existence (C.O'Halloran, 1967).

Applicability to librarianship.

Socratic dialogue's inductive method aimed not at the consensus but the clarification of the concepts; the methodology that could be used in search for the meaning of librarianship (J.M. Whitehead, 1980).

Dewey's insistence that librarians are responsible for guiding patrons reading taste is based on Socratic concept that knowledge creates virtue (M.Harris, 1976a).

Socratic belief in absolute values leads to a paternalistic view of the society which may impact on the selection and access to resources in librarianship (R. Staveley, 1964).

D. Gore (1970) cites Socrates as one of the early philosophers who feared books and considered written words as useless. Books to him were at best means for reinforcing the thinking of those who know the truth (D.A. White, 1978).

Relevance:
P: Reflections on the nature of human values.
L: Role of Socratic methodology in bibliothecal communication. (14 citations)

SPENCER, HERBERT (1820-1903)

Spencer, a British philosopher and social scientist considered mental and moral development based on knowledge as the primary aim of self-preservation and education (his notion of 'survival of the fittest' was later borrowed by Darwin).

Spencer bifurcated knowledge into the Abstract and the Concrete (Shera, 1972), dividing it into three categories: an unorganized common sense, partially organized science around a specific issue, and a completely organized philosophy. Knowing processes mediate between idealism and realism.

Basic concepts in philosophy are (1) similarities and differences, (2) self and not self, and (3) physical realm subdivided into space, time, matter, motion and force. Matter through evolution evolves from the incoherent 'homogeneity' into a coherent 'heterogeneity', and after reaching it, it reverses to the previous stage. This pendulum is repeated throughout eternity.

As a secular realist Spencer promoted study of science by scientific method. He interpreted life, mind and society in terms of matter, motion and force.

Spencer demolished the theory that the sciences developed historically in the order suggested by Comte, and tried to develop a theory of the unity of all sciences, but he failed to

deny Comte's principle of filiation (that each science is dependent on the one that preceded it) (Shera, 1965).

Spencer's notion of equating changes in society with biological growth provided justification for comparative studies in librarianship (J.P. Danton, 1973). His consideration (a) of social institutions as a part of a total social organization within local community, played an important, independent role, and (b) of environment adapting to changing conditions, suggested to M. Egan (1955) a model for librarianship.

Librarians were eager to incorporate Spencer's social evolutionary patterns to library context (S. Ditzion, 1973).

Relevance:
P: Philosophy of social sciences based on evolutional development.
L: Societal changes as the base for comparative librarianship; significance of changing context of library environment. (5 citations)

STRAWSON, PETER F. (1919-)

A British philosopher, Strawson is known for his contribution to the theory of truth and criticism of Russell's theory of description. In his attempt to discover the metaphysics that would be compatible with analytical philosophy, Strawson made a distinction between revisionary and descriptive metaphysics. Revisionary, classical metaphysic is concerned with producing a superior conceptual framework for metaphysical inquiry. Descriptive metaphysics aims at description through conceptual analysis of actual structures of our thoughts about the world. It differs from conceptual analysis in the scope and generality of its conclusions (T.M. Reed, 1971).

Relevance:
P: The philosophy of ordinary language distinguishing between referring to a thing and the assertion of its existence.
L: The term 'person' as a fundamental concept in librarianship, referring to consciousness and physical properties of an individual. (1 citation)

VASCONCELOS, JOSE CALDERON (1882-1959)

A Mexican philosopher known for his work in educational, political and philosophical life of Mexico, Vasconcelos was at one time a director of the Biblioteca Nacional de Mexico.

His philosophy concentrated on the history of thoughts, esthetics, metaphysics, ethics, and history of culture in Latin America. He emphasized feeling and will over reason and considered art as an important force in unifying varied elements into organic creativity.

He was also involved in the development of libraries in Mexico. P.M. Christenseen (1976) discussed Vasconcelo's philosophy in terms of its possible application to librarianship.

Relevance:
P: Philosophy of culture based on aesthetic monism, scientific realism and organic logic.
L: Combined intuition and scientific approach as the model for librarianship. (1 citation)

WEBER, MAX (1864-1920)

German jurist, historian, economist and philosopher, Weber developed a critical evaluation of current economic theories, proposing a 'capitalistic spirit' as the rational for modern culture. His approach was based on the study of behavior among people, interpreting empirical science as not concerned with the 'ought' but with the 'how' and the will of human behavior.

Weber developed now classic model for formal organization, symbolized by organizational chart (P.B. Knapp, 1973).

He also discussed the power of charismatic authority of individuals, affecting the cognitive authority of others by influencing their opinions (P. Wilson, 1983).

Weber's essay 'Wissenschaft als Beruf' is often translated as 'Science as a Vocation' misleading some readers not familiar with broad definition of science; they would understand it better as 'Science and Scholarship' or 'Research and Higher Learning' (F. Machlup, 1980).

Bureaucratic model of Weber, based on his theory of authority and structure in organization was influential in the theory of library management and consequent movement toward scientific management. His emphasis was on the position rather than a person; he advocated delegation of responsibility, recognition of channels of communication and specialization in decision-making processes. Many characteristics of a modern library reflect a bureaucratic model in its hierarchical structure, characterized by several rules, technical competence and division of labor (R.D.Stueart and B.B. Moran, 1987).

W.J. Goode (1961), in his argument for a philosophy of librarianship agreed with Weber, that the 'Golden Mean' is not necessarily more correct that either extreme.

Relevance:
P: Philosophy of social sciences based on the theory of authority and structure in organization.
L: Bureaucratic model in the theory of library management. (5 citations)

WHITEHEAD, ALFRED NORTH (1861-1947)

A mathematician and philosopher, Whitehead characterized European philosophical tradition as a series of footnotes to Plato (Shera, 1972). In an attempt to reconcile some aspects of idealism with realism, he redefined the vocabulary of philosophy to free it from its past connotations thus formulating bases for modern science. To him philosophy is a search for patterns in the universe.

On Metaphysics.

Metaphysics can be understood in terms of the principles of relativity. Whitehead rejected the 'bifurcation of nature' into two unequal systems of mind and body. Instead, he proposed a philosophy of organism in which only the reality of perception exists; nothing exists beyond our experience of any networks of events and everything is sensitive to the existence of all other things (the concepts of 'prehensive occasions' and positive or negative prehension'). The individuality of every entity is lost when it perishes, but its relation with other entities is preserved, thus past events achieve 'objective immortality.'

Whitehead considered truth as a generic quality with a variety of degrees and modes. He distinguished between sense and thought objects; 'the truth is various in its extent, its modes, and its relevance... appearance summons up new resources of feeling from the depth of reality. It is a Truth of feeling, and not a Truth of verbalization' (F. Machlup, 1980).

Whitehead maintained that form is a Platonic, ideal and abstract, nonphysical entity (Young, 1987).

On Knowledge.

In his theory of knowledge Whitehead used rationalistic analysis but also stressed the concept of feeling as an expression of sensitivity. Reality consists of event with spatial and temporal characteristics, expressing the 'ingression' of universals into individual instances. Reason help people to live well.

Whitehead also talked about the continuum in the relations known, providing at the empirical level a pattern of changes within an organism that exemplifies the 'whole - part' relations, 'so that the plan of the whole influences the very character of the various subordinate organisms which enter into it' (In J.Z. Nitecki, 1984).

Whitehead's argument for a referential classification of sciences, derived from projective geometry, rejected Aristotelean logic of mutually exclusive genera and species. There are two orders: observational and conceptual; the former is interpreted in terms of the latter. Observational discrimination is not dictated by the impartial facts, therefore no scientific schematism is valid if it is based on the independent individuality of each bit of matter. Hence, classification needs not be a process of atomization, its components may be simple facts, ideas or concepts, or their constellations used consistently as a unit. Classification can be synthesis as well as analysis, and its relations can be expressed in terms of generic properties, functions or any unifying principles. He called Aristotelean logic 'the fertile matrix of fallacies',

restricted to the abstract propositions only. Taxonomic basis for classification, (referential classification) lead to the development of a variety of special classifications.

On Education.

In education the most important to Whitehead was the learning of ideas, primarily useful and articulated, 'living ideas'. Education should facilitate understanding the flow of existence, the process-patters of reality. Education to him was 'the acquisition of the art of the utilization of knowledge'. By 'utilizing an idea', he meant relating it to sense perception, feelings, hopes etc.

He also advocated union of practice and theory in education; technical education should be liberal, and vice versa, it should impart both techniques and intellectual vision (Shera, 1965).

Whitehead's concept of 'quality of life' extends beyond the mere facts of life, as illustrated by social sense of public acceptance of certain opinions and practices (D.J. Foskett, 1973).

Whitehead viewed society as a balance between conservatism and innovation; both the spirits of change and conservation are the principles inherent in the nature of things. Teaching static ideas (such as 'this is the correct think to know') is dangerous. This, according to Shera, relates to the fallacy of educating library specialists without introducing them to basic courses in librarianship (Shera, 1973).

On Science.

In his criticism of scientific interpretation of information, H. C. Wright (1982) refers to Whitehead's own criticism of science's limitations.

There is no permanence in science, no ultimate truth in the absolute sense (Shera, 1973).

On Information.

E.C. Cherry (1952) points to the importance of symbolism in information theory. The high degree of compression in mathematical language is illustrated in Whitehead and Russell treatment of the mathematics as the generalization of ordinary language.

On Profession.

Whitehead notes the tendency of professionals to think and grow within their own field, considering all other issues outside that speciality as imperfect categories of thought (P. Wilson, 1983).

On writing.

Whitehead noted that initially writing did not have much impact on society. For long time it was used in accounting, but its significance fast increased once people started putting their thought in writing (Shera, 1972).

Relevance:
P: Realism aiming at reconciliation in science of some aspects of idealism with realism, such as subjective perception with objective facts.
L: Importance of theory and practice in library education. (12 citations)

WITTGENSTEIN, LUDWIG JOSEPH (1889-1951)

An Austrian philosopher, mathematician and logician, Wittgenstein emphasized the importance of studying language and the conditions necessary for the use of symbolism as representation. He distinguished between 'saying' and 'showing' by criticizing philosophy for saying what can only be shown, thus making meaningless efforts to say 'unsayable'.

Both logical and mathematical truths are tautological by being functions whose 'truth-values' are always assumed to be true. Wittgenstein rejected metaphysics as speculation about something beyond experience and observation.

R. Capurro (1991) saw information science as a rhetorical discipline based on formal methodological and cultural-historical philosophies derived among others from Wittgenstein's analytical, philosophical insight.

R.J. Howard (1982) points to the Wittgenstein's contribution in rejecting a mono-methodological empiricism and accepting subjective elements in philosophical analysis. T.M. Reed (1971) comments on Wittgenstein's structural conditions for any language; most of the metaphysical propositions are not false but nonsensical because they violate the logic of language.

'The meaning of a proposition is the method of its verification' (F. Machlup, 1980).

Relevance:
P: Philosophy of science concentrating on the symbolism as the representation of facts.
L: Importance of the methods of verification and of the logic of language in library work. (5 citations)

PART III: APPENDIXES

APPX-1: Profiles of Cited Philosophers.
A: Philosophers

Philosopher	Date	Nationality	School of Philosophy (Primary affiliation)
Adler, M.	20	US	Pragmatism
Ampere, A.	18-19	French	Realism
Aquinas, T.	13	Italian	Realism, Ethics
Aristotle	3 BC	Greek	Rationalism, Realism, Ethics
Austin, J.	20	English	Analytical Philosophy
Ayer, A.	20	English	Logical Positivism, Ethics
Bacon, F.	16-17	English	Realism
Bacon, R.	13	English	Realism
Barfield, A.	20	English	Transcendentalism
Bentham, J.	18-19	English	Utilitarianism, Ethics
Bergson, H.	19-20	French	Monism
Berkeley, G.	18	Irish	Idealism
Bertalanffy, L.	20	Austrian	General Systems
Berlin, I.	20	US	History (philosophy)
Bohm,D.	20	US	Holistic Philosophy
Bubber, M.	20	Austrian	Existentialism
Carlyle. T.	19	English	Idealist, Culture, History
Chomsky, N.	20	US	Logical Positivism, Language
Comte, A.	19	French	Positivism, Phenomenology, History, Social Science
Darwin, C.	19	English	Evolutionism, Pragmatism
Democritus	4-3BC	Greek	Materialism, Realism
Descartes, R.	17	French	Rationalism, Realism, Dualism
Dewey, J.	19-20	US	Pragmatism, Instrumentalism
Durkheim, E.	19-20	French	Positivism, Social Science
Franklin, B.	18	US	Political Philosophy, Realism
Freud,S.	19-20	Austrian	Psychology, Behaviorism
Galileo, G.	16-17	Italian	Naturalism, Science
Gandhi, M.	19-20	Indian	Pragamatism, Religion
Goethe, J.	18-19	German	Idealism
Hartley, D.	18	English	Utilitarianism, Psychology
Heger, G.	18-19	German	Idealism, Individualism
Heidegger, M.	20	German	Existential Phenomenology
Heraclitus	5-4BC	Greek	Rationalism
Hobbes, T.	17	English	Materialism, Ethics
Hume, D.	18	English	Empiricism, Ethics
Husserl, E.	19-20	German	Phenomenologism, Realism
Huxley, T.	19	English	Realism, Evolutionism
James, W.	19-20	US	Pragmatism, Ethics
Jefferson, T.	18-19	US	Political Philosophy
Kant, I.	18-19	German	Critical Idealism, Ethics
Kaplan, A.	20	US	Idealism
Kierkegaard, S.	19	Danish	Existentialism

Philosopher	Date	Nationality	School of Philosophy (Primary affiliation)
Laplace, P.	18-19	French	Science
Laszlo,E.	20	Hungarian	Systems
Leibnitz, G.	17-18	German	Idealism
Lenin, U.	19-20	German	Communism, Materialism,
Leucippus	4BC	Greek	Materialism,Pluralism
Levi-Strauss, C	20	French	Social Science
Locke, J.	17	English	Realism, Empiricism
Lukasiewicz, J.	20	Polish	Logic, Science
Luther, M.	16	German	Religion
Mackay, D.	20	US	Language, Science
Malinowski, B.	20	Polish	Anthropology, Social Science
Maritain, J.	20	French	Religion, Existentialism
Marx, K.	19	German	Dialectical Materialism Communism, Materialism
Mead, G.	19-20	US	Pragmatism
Mill, J.	19	English	Utilitarianism, Ethics
Milton, J.	17	English	Humanism
Montesquieu, C.	18	French	Rationalism
Moore, G.	19-20	English	Analytical Philosophy, Realism
Morris, C.	20	US	Logical Positivism, Language
Nagel, E.	20	US	Logical Positivism, Science
Newton, I.	17-18	English	Science
Ockham, W.	14	English	Empiricism, Nominalism
Ortega, G.	20	Spanish	Humanism
Parmenides	4BC	Greek	Idealism, Monism,Rationalism
Pascal, B.	17	French	Culture, Science
Peirce, C.	19-20	US	Pragmaticism
Pepper, S.	20	US	Contextual Pragmatism
Piaget, J.	20	Swiss	Psychology, Behaviorism
Plato	4-3BC	Greek	Idealism, Ethics
Polanyi, M.	20	US	Science
Popper, K.	20	Austrian	Science, Social Science
Protagoras	4BC	Greek	Humanism
Ptolemy, C.	1AD	Greek	Science
Pythagoras	4-4BC	Greek	Science, Dualist
Ross, W.	19-20	English	Intuitionist, Ethics
Rousseau, J.	18	French	Realist, Culture
Royce, J.	19-20	US	Idealism, Monism
Rubakin, N.	19-20	Russian	Psychology
Russell, B.	19-20	English	Analytical Philosophy, Rationali Rationalism
Ryle, G.	20	English	Analytical Philosophy
Sartre, J.	20	French	Existentialism
Sextus Empiricus	2AD	Greek	Empiricism, Skepticism
Skinner, B.	20	US	Behaviorism
Smith, A.	18	English	Social Science

Philosopher	Date	Nationality	School of Philosophy (Primary affiliation)
Snow, C.	20	English	Culture
Socrates	4-3BC	Greek	Idealism, Humanism
Spencer, H.	19	English	Social Science, Realism
Strawson, P.	20	English	Analytical Philosophy Language
Vasconcelos, J.	20	Mexican	Culture
Weber, M.	19-20	German	Social Science, Behaviorism Capitalism
Whitehead, A.	19-20	English	Realism, Science
Wittgenstein, L	20	Austrian	Logical Positivism, Science

Total nationality:
26 were Englishmen ..
18 US citizens .: subtotal of 44 philosophers
13 were French :
11 Ancient Greek : subtotal of 39 philosophers
10 German :
5 Austrian .:

Thus 83 philosophers (88.3% of all cited individuals) were of Anglo-Saxon origin.

B: Schools of Philosophy (Primary Affiliations of Philosophers)

Philosophical Schools	# of times cited by librarians
Analytical Philosophy	5x
Anthropology,	
Behaviorism	4x
Capitalism	
Communism, Materialism	2x
Contextual Pragmatism	
Critical Idealiism	
Culture	4x
Dialectical Materialism	
Dualism	2x
Empiricism	4x
Ethics	11x
Evolutionism	2x
Existential Phenomenology	
Existentialism	4x
General Systems	
History	2x
Holistic Philosophy	
Humanism	4x
Idealism	10x
Individualism	
Instrumentalism	
Intuitionism	
Language	4x
Logic	
Logical Positivism	5x
Materialism	3x
Pluralism	
Monism	3x
Naturalism	
Nominalism	
Phenomenologism	2x
Political Philosophy	2x
Positivism	2x
Pragmatism	6x
Psychology	3x
Rationalism	7x
Realism	15x
Religion	3x
Science	13x
Social Science	8x
Skepticism	
Systems	
Transcendentalism	
Utilitarianism	3x

C: Rank Order of Cited Schools

	Most Frequently Cited Philosophers		All Other Philosophers	
School of Philosophy	# Cited	Rank	# Cited	Rank
Idealism	91	1	18	6
Humanism	51	2	5	11
Ethics	49	3	29	3
Realism	49	4	27	4
Science, Soc.Sciences	46	5	52	1
Materialism	31	6	3	12a
Pragmatism	27	7	42	2
Rationalism	20	8	21	5
Dualism	20	9	13	7
Pluralism	13	10	8	9
Psychology, Behavior	12	11	12	8
Communism	12	12	1	14
Systems	11	13	3	12b
Empiricism	10	14	6	10
Totals	442		240	

Appx-2: Major Philosophical Systems.

A. Synopsis.

- Analytic philosophy:
  It is defined as contemporary linguistic analyses of meaning in search of clarity of expression. Clarification of the meaning of ideas dissolve many philosophical problems. The analysis can be either philosophical (reductive) or logical (descriptive).
  The method is based on assumptions that the philosophy is empirically uninformed, its primary function is the analysis of the language and that the locus of meaning is in the proposition or a statement. Central is the formulation of definitions: linguistic, nonlinguistic, real or contextual use of symbols. C. J. Fox (1983) used philosophical method of analytic philosophy in defining the semantic aspects of the word 'information' and related terms, stressing their ordinary use. The principles governing such an analysis is the consistency, simplicity and systematicity.
  [See also Logical Positivism]

  Analytical Philosophers:
  Russell, Bertrand (1872-1971)
  Moore, George Edward (1873-1958)
  Ryle, Gilbert (1900-1976)
  Austin, John Langshaw (1911-1960)
  Strawson, Peter F. (1919-)

- Animism:
  Natural objects and phenomena have soul (spiritual aspect), which is the principle of life and universe.

  Animists:
  Thales (624-550 BC)
  Zeno (335-265 BC)
  Leibnitz (1646-17-16)

- Behaviorism:
  (a) reductive materialism explaining consciousness in terms of overt behavior responses.
  (b) American school of psychology which rejects the concepts of mind and consciousness, restricting psychology to the study of behavior.

  Behaviorists:
  Freud, Sigmunt (1856-1939)
  Weber, Max (1864-1920)
  Piaget, Jean (1896-)
  Skinner, B.F. (1904-)

- Capitalism:
  System in which means of economic production are controlled by private individuals or groups, subject to natural, political and social environment. Major aspect of the system are the notions of 'individual' interest', 'profit', 'private property' and 'free enterprise'.
  Capitalists:
  Veblen, Thorstein (1857-1929)*
  Weber, Max (1864-1920)

- Cynicism:
  Anti-intellectual, nonsystematic, nonspeculative and individualistic philosophy believing that the highest good is the intelligent living of self-control and independence from customs and conventions. Considered family, property, loyalty and patriotism as false obligations.
  Cynics:
  Antisthenes (406 BC)
  Diogenes of Sinope (412-323 BC)

- Communism:
  Social philosophy restricting private rights and possessions by consent of the whole society.
  Communists:
  Marx Karl(1818-1883)
  Lenin, Vladimir Ilyich (1870-1924)

- Culture, philosophy of:
  Philosophical aspects of intrinsic values of society and its means (tools, customs, institutions).
  Culture philosophers:
  Pascal, Blaise (1623-1662)
  Carlyle, Thomas (1795-1881)
  Vasconcelos, Jose (1882-1959)
  Snow, Sir Charles Percy

- Dialectical Materialism:
  The ultimate reality is material, characterized by constant struggle of opposites. Matter (nature) is real in its own right. Dialectical term expresses interconnectedness and change reflecting the tensions created by social conflicts.
  Dialectical materialists:
  Engels, Frederick (1820-1895)*
  Marx, Karl (1818-1883)
  Lenin, Vladimir (1870-1924)

- Dualism:
  Reality consists only of two irreducible substances: matter and spirit
  Dualists:
  Pythagoras (c.572-497 BC)
  Descartes, Rene (1596-1650)

- Ethics: see Moral Philosophy

- Empiricism:
  It appeals to experience and stresses the importance of sense experiences over thought in verification. Experience is the sole source of knowledge, i.e., ideas and concepts are reducible to the content of experience.
  Empiricists:
  Ockham, William of (c.1285-1349)
  Hume, David (1711-1776)

- Evolutionism:
  More complex things develop from the earlier less evolved; the highest good is in the greatest number of possibilities, with everything tending toward a purpose or end, however not all evolution means progress.
  Evolutionists:
  Comte, Auguste (1798-1857)
  Darwin, Charles 91809-1882)

- Existentialism:
  Forms do not determine existence, which makes up its own essence. The human predicaments include among others alienated individual in a hostile environment, anxiety, dread of death and sense of nothingness.
  Existentialists:
  Kierkegaard, Soren A. (1813-1855)
  Buber, Martin (1878-1965)
  Maritain, Jacques (1882-1973)
  Heidegger, Martin (1889-1976)
  Sartre, Jean-Paul (1905-1980)

- General systems:
  Arrangement of concepts in a coherent order according to some intelligible principles, and grouping of things into unified whole by interrelationships of their parts.
  [See also: Systems]
  General systems philosophers:
  Bertalanffy, L. (1901-)
  Laszlo, Ervin (1932-)

- History, philosophy of:
  (a) Critical philosophy of history, logical, conceptual and epistemological analysis of the historiography.
  (b) Speculative philosophy of history as a search for meaning, pattern and nature of change, value, purposes and meaning of
  History philosophers:
  Carlyle, Thomas (1795-1881)
  Comte, August (1798-1857)
  I.Berlin

- Holistic philosophy (wholism): There is a real, fundamental difference between living (organic) and nonliving (inorganic) activities. Organic wholes must be studied as such, since the observable activities of its parts do not necessarily act the same way within and outside the whole. Hence, the functions such as purposes, properties or activities must be explained in terms of the form, totality and unity of the whole; the activities of the parts of the whole are explained in terms of the functions of the whole.
  Holists:
    David Bohm

- Humanism:
    Primacy of the human factor in the universe
  Humanists:
    Protagoras (c.480-410BC)
    Milton, John (1608-1674)
    Ortega, Y Gasset Jose (1883-1955)

- Idealism:
    Ideas are true reality and reality is mental, explained in terms of the concepts such as minds, soul, selves, spirits, ideas, absolute thoughts, and life.
  Idealists:
    Parmenides (fl 495 BC)
    Socrates (469-399 BC)
    Plato (427-347)
    Leibnitz, Gottfried, Wilhelm (1646-1716)
    Berkeley, George (1685-1753)
    Kant, Immanuel (1724-1804)
    Goethe, Johann Wolfgang von (1749-1832)
    Hegel, Georg Wilhelm Friedrich (1770-1831)
    Carlyle, Thomas (1795-1881)
    Royce, Josiah (1855-1916)
    Kaplan, Abraham (1918-)

- Individualism:
    The doctrine of the importance of individual. In political philosophy the notion that the state exists for the individual, in political economy the belief in the laissez faire of competition.
  Individualists:
    Spinoza, Baruch (1632-1677)*
    Rousseau, Jean Jacques (1712-1778)
    Hegel, Georg (1770-1831)
    Nietzsche, Friedrich (1844-1900)*

- Intuitionism:
    Ultimate truth can be obtained not by analysis but by an immediate grasp of its content
  Intutionists:
    Ross, William David (1877-)

- Language, philosophy:
  Philosophical investigations of language defined as a system of signs used in communication. Major areas of inquiry include the origin of language, its nature and semantic meaning.
  Language philosophers:
  Chomsky, Noah

- Materialism:
  Only matter is real and exists as the fundamental constituent of the universe. Everything is explainable in terms of matter in motion. Wealth, satisfaction and pleasure are the most important values. Historical changes are economically determined.
  Materialist:
  Democritus (c.460-370 BC)
  Hobbes, Thomas (1588-1679)
  Engels, Friedrich (1820-1895)*
  Marx, Karl (1818-1883)
  Lenin, Vladimir (1870-1924)
  Montague, William (1873-)*

- Monism:
  There is but one fundamental reality (matter, mind, energy, form etc)
  Monists:
  Parmenides (6-5 BC.)
  Spinoza (1632-1677)
  Royce (1855-1916)
  Bergson, Henry (1859-1941)

- Moral Philosophy (Ethics):
  Study of judgments of approval, rightness, goodness, virtue, wisdom of action, disposition, ends, objects, states of affairs. The studies are either focusing on psychological or sociological analysis of ethical judgment of value (axiology) or obligation (deontology).

Moral Philosophers (Ethics):
Plato (428-7-348-7 BC)
Aristotle (384--322 BC)
Augustine, Saint (354-430)*
Aquinas, Thomas (1224-1274)
Hobbes, Thomas (1588-1679)
Hume, David (1711-1776)
Kant, Immanuel (1724-1804)
Bentham, Jeremy (1748-1832)
Schopenhauer, Arthur (1788-1860)*
Mill, John Stuart (1806-1873)
James, William (1842-1910)
Nietzsche, Friedrich (1844-1900)+
Santayana, George (1863-1952)*
Russell, Bertrand (1872-1970)
Moore, George E. (1873-1958)
Ayer, Alfred J. (1910-1989)
Ross, William D. (1877-)

Logical Positivism:
Also referred to as: logical or scientific positivism or empiricism. The approach based on the verifiability of the cognitive meaning of the statement; mathematical and logical statements are tautological; knowledge of reality is correct only by scientific method; metaphysical statements are meaningless, and the function of philosophy is to analyze and clarify the meaning of concepts using logical and scientific methods.
Logical positivists:
Wittgenstein, Ludwig Josef (1889-1951)
Chomsky, N.
Morris Charles (1901-)
Nagel, Ernest (1901-)
Ayer, Alfred Jules (1910-1989)

- Materialism:
In metaphysics matter is the ultimate reality, consisting primarily of physical properties. In ethics physical well-being is of highest value. Mind, if it exists, is depended on matter and material changes. Every change (activity or event) can be explained only in terms of matter in motion and physical conditions.
Materialists:
Hobbes, Thomas (1588-1679)
Marx, K. (1818- 1883)
Lenin, V. (1870- 1924)

- Naturalism:
The natural world is the whole of reality. There is no need for supernatural causation, the natural world is self-explanatory.
Naturalists:
Galileo, Galilei (1564-1642)

- Nominalism:
  In Scholasticism the theory that abstract or general, universal concepts represent no objective real existence but are merely names.
  Nominalists:
  Ockham, William of (1280-1349)

- Personalism:
  The person is the ultimate reality; every fact is contained in some person's experience. The whole existence is an expression of universal personal consciousness; persons are irreducible elements of universe, and the life is superior to any logical form, self is interpreted as a phenomenological experience.
  Personalists:
  Schleiermacher, F.D. (1768-1834)*
  Harris, W.T. (1835-1909)*
  Bowne, B.P. (1847-1910)*
  Royce, J. (1855-1916)

- Phenomenology:
  Introspective analysis of consciousness, immediate experiences and various forms of phenomena present in consciousness. Kind of realism which holds that the objects of thoughts are independent of the process by which they are apprehended.
  Phenomenologists:
  Comte, Auguste (1798-1857)
  Husserl, Edmunt (1859-1938)

- Pluralism:
  There are more than two irreducible ultimate substances (realities), the universe is indetermined in form, have no unity, continuity or coherent order.
  Pluralists:
  Leucippus (fl.450 BC)
  Democritus (460-360 BC)
  Leibnitz, G.W. (1646-1716)
  James, W. (1842-1910)

- Political philosophy:
  Origin, nature, purpose and importance of government in human affairs; relationships between individual and government; value concepts of justice, equality, freedom, liberty and political rights.
  Political philosophers:
  Franklin, Benajmin (1706-1790)
  Jefferson, Thomas (1743-1826)

- Positivism:
  The highest form of knowledge is a simple description of sensory phenomena, often expressed in mathematical formula rather than in psychological introspection. (Also known as Logical, scientific empiricism or positivism).

Positivists:
Comte, A. (1798-1857)
Poincare, H. (1854-1912)
Durkheim, E. (1858-19170
Dewy, J. (1859-1952)

- Pragmatism:
The approach based on experience, experimental methods and practical value. The truth of a belief is determined by its effect in practice
Pragmatists:
Darwin, Charles, R. (1809-1882)
Peirce, Charles Sanders (1839-1914)
James, William (1842-1910)
Dewey, John (1859-1952)
Mead, George H. (1863-1931)
Gandhi, Mahatma (1869-1948)
Adler, Mortimer J. (1902-)
Pepper, Stephen C. (1903-1972)

- Preformationism:
All organs and its hereditary characteristics of living creatures already exist in the germ, either structurally or by differentiation. (eg Leibnitz's monads)
Preformationists:
Leibnitz, G.W. (1646-1716)

- Psychology, philosophical:
Issues relating to mind and consciousness studied in the context of scientific psychology, and with metaphysical or epistemological ramifications. (Includes Psychologism: Psychological interpretation of ethical, logical, aesthetic or metaphysical philosophical concepts and problems).
Psychologists, philosophical
Hartley, David (1705-1757)
Freud, Sigmund (1856-1039)
Rubakin, Nicholas (1862-1946)
Genetic epistemologists:
Piaget, Jean (1896-)

- Rationalism:
Reason is the origin of knowledge, thinking (abstract reasoning) provides the truth about the nature of reality and of ethical good.
Rationalists:
Heraclitus of Epheus (ca 536-470 BC)
Parmenides (fl 495 BC)
Aristotle (384-322 BC)
Montesquieu, Charles de (1689-1755)

- Realism:
Principle of independence of nature from human mind; the reality is ultimately independent of any knowledge of its existence.

Realists:
Democritus of Abdera (c.460-370 BC)
Aristotle (384-322 BC)
Bacon, Roger (c.1214-1292)
Aquinas, Thomas (1225-1274)
Bacon, Francis (1561-1626)
Descartes, Rene (1596-1650)
Locke, John (1632-1704)
Rousseau, Jean Jacques (1712-1778)
Franklin, Benjamin (1706-1790)
Ampere, Andre Marie (1775-1836)
Spencer, Herbert (1820-1903)
Huxley, Thomas Henry (1825-1895)
Husserl, Edmund (1859-1938)
Whitehead, Alfred North (1861-1947)
Moore, George Edward (1873-1958)

- Relativism:
The truth is relative, all knowledge is relative to human mind and its senses. Opposition to any theory of knowledge, reality and conduct based on absoluteness.
Relativists:
Protagoras (480-410 BC)
Comte, A. (1798-1857)
Wundt, W.M. (1832-1920)*
Dewey, J. (1859-1952)

- Religion, philosophy:
Philosophy of religion: systematic study of religious consciousness, their theories and historical relations in the cultural context. It differs from theology by recognizing priority of reason over faith.
Religious philosophers:
Luther, Martin (1483-1546)
Gandhi, Mahathan (1869-1948)

- Science philosophy:
Study of concepts, presuppositions, methodology of science and of reasoning processes, symbolic structures and consequences of scientific knowledge.
Science philosophers:
Ptolemy, Clausius (c.127-151 AD)
Pascal, Blaise (1623-1662)
Galileo, Galilei (1564-1642)
Newton, Sir Isaac (1642-1727)
Laplace, Pierre Simon (1749-1827)
Lukasiewicz, Jan (1878-1956)
Popper, Karl (1902-1994)
Mackay, D.M.
Polanyi, Michael

- Skepticism:
Human efforts to know are futile; the state of doubting, suspended judgement.

Skeptics:
Sextus Empiricus (ca 200 AD)

- Social science philosophy:
  Study of society and its relations. Its methodology was initially based on natural sciences, then biology and psychology.
  Social science philosophers:
  Smith, A. (1723-1790)
  Comte, August (1798-1857)
  Levi-Strauss, Claude
  Malinowski, Bronislaw, Kasper (1884-1942)

- Transcendentalism:
  The approach stresses the superiority of the intuitive and spiritual over empirical and scientific approach. It transcends empiricism by search for a priori principles of knowledge.
  Transcendentalists:
  Barfield, Arthur Owen (1898-)

- Utilitarianism:
  The proposition that proper action is one that produces happiness to the greatest number of people and that ethical values are determined by the consequences of the ethical act.
  Utilitarianists:
  Hartley, David (1705-1757)
  Bentham, Jeremy (1748-1832)
  Mill, John Stuart (1806-1873)

B. Examples of Contrasting Interpretations of Some Philosophical Concepts

	Opposing views
Intellectual, conceptual knowledge, (apprehension of ideas or concepts)	Experiential, concrete experience (perceptual, intuitive, introspective)

A: KNOWLEDGE: relations known between subject and object.

I-1: Knowledge definitions: a faculty to abstract and infer:

Metaphysical Rationalism: transcendence of empirical model in the mind's innate ideas [Pythagoras, Plato, Descartes Leibnitz]	Positivism: Descriptive sensory phenomena in science as the only valid knowledge [Comte, Poincare, Dewey]

M: Interrelationships between humanities and sciences in library collections.

I-2: Its limits.

Cynicism: Lack of confidence in the worth of human knowledge. [Antishenes, Diogenes]	Skepticism: Suspended judgment subject to constant testing. [Ockham, Descartes, Hume] Kant, Locke, Hume]

M: Need for a constant revision of models in the philosophy of librarianship.

I-3: Its meaning:

Cognitive analysis: meaning asserting something.	Logical meaning derived from the form of the statement.

M: Definition of basic concepts in Metalibrarianship.

I-4: Its abstract terms

Realism: Objective	Nominalism: Subjective
Abstractions; Universals as Platonic ideas Platonic Idea Aristotle's Form; ante res universals. [Machiavelli, Spencer, Russell, Moore,]	utterances; Abstractions are names only; No objective essence; post res universals [Ockham]

M: Conceptual, contextual and procedural levels of metalibrarianship.

.....I-5: Its scope.

Emotive Theory:	Logical Positivism
Non-cognitive expressive meaning	Cognitive, scientific verified meaning [Carnap, Ayer]

M: Distinction between artistic and scientific communication.

.....

I-6: Its sources:

Rationalism:	Empiricism:
Abstract reasoning prior to sense perception [Parmenides, Plato, Aristotle, Descartes, Leibnitz, Hegel]	Experience of sense data as the only source of knowledge [Hobbes, Locke, Hume, Mill, Poincare]

M: Metaphysical and physical aspects of metalibrarianship.

B: ETHICS: Inquiry into the nature of morality and moral acts.

.....

I-1: Values, its source:

Humanism:	Naturalism:
Freedom exercised in nature and in society [Protagoras, Comte]	Values are human made but conditioned by nature [Democritus, Galileo, Hobbes, Voltaire]

M: Recognition of a conflict between individual and social rights.

.....

I-2: Value, its concepts.

Objectivism:	Subjectivism:
Values exist independent of their comprehension [Montague]	Values have no independent existence and reflect human feelings and attitudes [Berkeley]

M: Bases for the librarians code of ethics.

.....

I-3: Morality, its nature.

Intuitionism:	Utilitarianism:
Intuitive apprehension of right action disregarding its consequences [Bergson, Martineau, Moore]	Right action maximizes pleasure and happiness (Principle of utility) [Bentham, Mill, Sidgwick]

M: Distinction between deontological and axiological interpretations of right and good actions.

C: REALITY: defined as the aggregate of all that exist apart from appearance and consciousness.

.....

I-1: Its appearance (to the observer) and its reality (in itself).

Transcendental Idealism:	Protagorean Relativism:
unknowable thing-in-itself. [Kant]	We know what we perceive but not things perceived. [Protagoras]

M: Bibliothecal communication about both the appearances and reality of the universe.

.....

I-2: Its attributes:

a priori	a posteriori
Independent of senses, necessary condition of experience, non-empirical knowledge. [Kant]	Derived from senses experience, based on veracity of experience, probable knowledge.

M: Examples of a priori planning and a posteriori implementation of the plans.

I-3: Its growth:

Preformationism:	Evolutionism:
Preformed organs; hereditary changes. [Leibnitz]	Genetic adaptation; phylogenetic change. (Aristotle, Darwin)

M: Nature of Library Information Science development.

I- 4: Its definitions

Rationalistic:	Empirical:
Ultimate being, self-caused and self-sustaining.	Substratum in which properties and qualities inhere.

M: Rationalistic reader-book-its content (alpha-beta-gamma) primary concepts and empirical conceptual-contextual-procedural relationships between them.

I-5: Its focus:

Antropomorphism Personalism:	Zoomorphism Animism:
Irreducible personal consciousness.	There is no difference between animals and human. [Thales, Zeno, Leibnitz]

M: Concern about overemphasis of the technology in LIS.

I-6: Its Meaning:

Transcendentalism:	Materialism:
Intuitive reality transcending empiricism. [Emerson]	Only matter in motion exists and is real. [Hobbes]

M: A need for balancing theoretical and practical aspects of library information science.

I- 7: Its methodology:

Metaphysical:	Pragmatic:
Rational study of ultimate reality in itself, its its self-sufficient ground, science of being as such, knowledge by causes.	Interpretation of ideas in in terms of their consequences, anti-intellectual, similar to scientific method.

M: Metaphysical nature of LIS philosophy and it's pragmatic applications.

.....

I-8: Its nature:

Idealism:	Materialism:
supra, non-spatial non-pictorial, in-corporeal, supra-sensuous, normative, valuational, teleological. [Plato, Berkeley, Leibnitz, Hegel, Emerson, Royce]	spatial, pictorial, corporeal, sensuous, non-valuational, factual, mechanistic. [Hobbes]

M: Distinction between form and matter in library information science.

.....

I- 9: Its scope:

Individual:	Universal:
Concrete reality of the individual.	Reality exists independent of its awareness.

M: Communication concerning reality that is not recorded is not the subject of bibliothecal communication.

.....

I-10: Its Substance: the underlying substratums of all phenomena sough by philosophers as the primary being of things.

Monism:	Dualism:
There is only one reality; everything else is illusion. [Thales, Bergson, Royce, Montague]	There are two independent and mutually irreducible substances. [Pythagoras, Descartes, Locke]

Pluralism:
There are more than two kinds of fundamental, irreducible, realities.
[Democritus, Leibnitz, James]

M: Distinction between primary (primitive), secondary (qualitative) and tertiary (quantitative) concepts in metalibrarianship.

.....

D: CONTROVERSIES BETWEEN PHILOSOPHICAL SCHOOLS:

I-1: Analytic Philosophy focuses on the analysis as the proper philosophical method and on clarification of statements as the prerequisite of analysis.

Linguistic Analysis:	Logical Analysis:
Philosophy as an activity; Description, elucidation; Language as a philosophical philosophical tool-box.	Philosophy as propositions; Definition, reduction, analysis; language as a isomorphic structure of reality.

M: Words must be interpreted in their context.

I-2: Culture, philosophy of: study of intrinsic values of society.

Culture:	Civilization:
Human interpretation of the complex whole of meanings, values and purposes in life and society.	Universal and accumulative product of science and technology relating primarily to nature rather than human.

M: Distinction between cultures and civilizations in comparative librarianship.

I-3: Dialectical Materialism, philosophy of: Juxtaposition between dialectical and materialistic approaches:

Hegelian Dialectics:	Dialectical Materialism:
Idealistic, metaphysical, logical categories [Hegel]	social & economic opposites and contradictions [Engels, Marx, Lenin]

M: Metalibrarianship
Triadic methodology of metalibrarianship.

I-4: Existentialism, Philosophy of: existence prior to essence.

Essentialism:	Existentialism:
Essence of universals: 'what a thing is'.	Existence precedes essence 'A thing is'.

M: Distinction between bibliothecal communication, and things communicated by it.

I-5: History, philosophy of: development of people as social beings within psychophysical causality.

Metaphysical (Meaning)	Logical (Understanding)
Their background, causes, laws, meaning and motivation.	cognitive understanding; values and laws are discovered.

M: Historical context of metalibrarianship.

I-6: LANGUAGE, philosophy of: conceptual analysis of language as signs in communication

Metaphysical	Epistemological
Meaning, implications forms, function of ordinary language.	Structural identity between symbols and facts they represent in language.

M: Linguistic aspects of bibliothecal communication.

.....

I- 7: POLITICAL SCIENCE: Philosophy government, its essence, origin and value and relations to individual.

Anarchism:	Political Philosophy:
Abolition of political control. [Rousseau]	Definition of political power. [Plato, Aristotle, Aquinas, Machiavelli, Hobbes, Rousseau Kant, Hegel, Narx, etc]

M: All inclusive political environment in bibliothecal communication.

I-8: PRAGAMATISM: philosophy of a group of associated theoretical ideas about meaning, beliefs and methods interpreted in terms of their consequences.

Realistic Pragmaticism: (C.S.Peirce)
Method of clarifying and determining the meaning of signs in facilitating communication

Nominalistic Pragmatism: (W. James)
Focus on value, morals and and religious beliefs in terms of their practical consequences

M: Pragmatic nature of service disciplines such as library information science.

I-10:: Psychology, Philosophy of: metaphysical and epistemological ramification in the study of mind, consciousness, cognition and mind-body relations.

(a) Methodology:

Structural:
Analysis of mental states into component sensations, images and feelings, description of consciousness as an interaction with environment

Functional:
Mental processes of sense perception, emotion, volition, thought as functions of biological adaptation to environment.

M: Psychological aspects of library interview technique.

.....

(b) Consciousness, its meaning:

Phenomenology:
Subjective inner life.
[Husserl]

Behaviorism:
Overt behavior
Responses.
[Pavlow, Watson

M: Importance of body signs in communication.

.....

(c) Mind-body: Mental and physical states: (eg distinctions between events, qualities and material objects).

Dualistic:	Monistic:
Body as mental processes. (Descartes, Locke, James)	Mind as a bodily function. (Aristotle, Hobbes, Hegel)

M: Distinction between format and content of a book.

I-11: RELIGION: Philosophy of: nature, function and value of religion.

Idealistic	Naturalistic
human apprehension of values as part of real world itself.	values are human products expressed in biological and physical terms.

M: Subject-matter of religious collections.

I-12: SCIENCE, philosophy of: systematic study of the nature, methods and presuppositions of science and its relations to other disciplines.

Rational inductive, logicomathematical, inferential, abstract reasoning.	Scientific, deductive, logicomathematical, conceptual, hypothesis

M: Relationships between humanistic and scientific interpretation of library information science.

.....

I-13: Social sciences: disciplines concerned with the study of human behavior.

(a) definitions of social processes

Anthropology:	Sociology:
Study of essence of human being.	Study of society and social relations.

M: Emergence of social epistemology.

.....

(b) Economic stages in social development.

Communism:	Capitalism:
Communal ownership of production. [Engels, Marx, Lenin]	Private control of production.

M: Balancing societal and individual bibliothecal needs in providing library services.

.....

(c) Methodological issues: Aggregative vs. configurative approaches:

Holism:	Individualism:
Focus on social wholes as a macroscopic view of society [Bergson, Alexander]	Individuals as ultimate constituents of social world: macroscopic view

M: Balance between social and engineering aspects of LIS.

.....

I-14: Systems, philosophy of: interrelated parts unified in a consistent whole. System's paradigms.

Classical science:	General Systems:
Closed system, no import or export of matter	Open system, exchange of matter within environment

M: System approach to the theory of library information science.

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APPX-3: Major Key Words

Key Words
(a): Numerical reference to philosophers in APPX-B
(b) Levels of references (see notes below)

(a)	K E Y W O R D S	(b)
	Antiquity	
1	Change=nothing is,only change is real	Co-W
1	Communication>is irreversible	Cx
2	Concept=notion of intelligibility (conceptualism)	Co-N
3	Materialism=concept of atomic matter	Co-W
4	Rationalism=permanence of being,only change is real	Co-W
5	Reality=as it appears to individual (metalibrarianship)	Co-N
5	Professionalism>Protagoras as a model	Cx
6	Reality>physical & formal combined in atomic matter	Cx-W
7	Knower=is also a non-knower	Co
7	'Know thyself'=antropocentric interpretation of life	Co-W
7	Method,Socratic^paternalistic in selection & access	CR
7	Books^preference of live dialogue over written words	CR
7	Books & written words^Socratic opposition	CR-W
7	Truth>Socrates as disinterested seeker & teacher	Cx
7	Idea (eidos)>a form accessible by thoughts only	Cx
7	Logic>careless use by Sophists	Cx
7	Conversation>understanding users interaction	Cx
7	Knowledge>creates virtue	Cx
7	Books>at best reinforce the thinking of those who know	Cx
7	Humanism>philosophy introduced by Socrates	Cx-W
7	Reality>competition between physical & formal views	Cx-W
7	Method<Socratic inductive dialogue	Pd
8	Language=is form not substance	Co-W
8	Form^as imperfect representation of ideal world	CR
8	Form^not Platonic abstract but physical mass-energy	CR
8	LIS,paternalistic^impact of Plato on selection	CR
8	Censorship^based on Plato's 'general good'	CR
8	Philosopher-king^as a dream	CR
8	Change,fear of^leading to totalitarianism	CR
8	Books^fear of	CR
8	Censorship^of intellectual freedom	CR
8	Methodology^rejection of technology	CR
8	Computer science^rejection of ideal search concept	CR
8	Alphabet^fear of invention	CR-S
8	Communication,oral>about truth by argument	Cx
8	Dualism>distinction between,mental & physical phenomena	Cx
8	Reality>absolute & changing	Cx
8	Form>relegates experience to imperfect ideal world	Cx
8	LIS,communication>essential for social functioning	Cx
8	LIS philosophy>Platonic vs Aristotelean approaches	Cx
8	LIS philosophy>based on Platonic dialogue	Cx
8	Information science>materialistic & idealistic paradigm	Cx
8	Reality,virtual>and Plato's philosophy	Cx
	Concept>cognitive,intellectual & abstractions	Cx

8	Philosophy & academic conflict>Protagoras,Socrates,Plato	Cx
8	LIS,use of>motivated by human ignorance	Cx
8	Method>instruction prior to reading	Cx
8	'Knowing that'>as a superior knowledge	Cx-M
8	LIS conceptual level>based on reality of rational ideas	Cx-N
8	Science>of mutually exclusive classification	Cx-S
8	Method>dialectics in study of principles	Cx-S
8	Ideas>objective & subjective aspects of immaterialism	Cx-W
8	Education<Plato's Republic as a tool	Pd
8	Education,Republic<as an argument for democracy	Pd-S
9	Dualism=eidos & morphe (ideal & material form)	Co
9	Librarian's definition=librarian qua librarian quality	Co
9	LIS theory=terminus ad quo,ad quem & the process	Co
9	Science=defined as absolute certainty	Co-M
9	Classification of knowledge^based on hierarchy	CR-S
9	Dualism>between life (mind) & machine (nervous system)	Cx
9	Ethics>people as political animals	Cx
9	Library>impact of Alexandrian collection	Cx
9	Theory>holistic principle	Cx
9	Model>mechanical & organismic analogies	Cx
9	LIS >neutrality vs equals treated as unequal	Cx
9	Information society>based on recorded knowledge	Cx
9	Communication>speaker-speech-audience & Shannon theory	Cx
9	Communication> and speaker's ethos	Cx
9	Sociology>differentiation & interrelatedness	Cx
9	Methodology>Aristotelean at GLS	Cx
9	LIS philosophy>based on efficient & final cause	Cx
9	Education>Aristotelean & Platonic tradition	Cx-S
9	Dualism,ontological>combining form & materialism	Cx-W
9	Dualism>form in matter vs form & matter	Cx-W
9	Logic>computer search based on Boolean algebra	Pd
10	LIS >compared to Ptolemy's geocentric view	Cx
10	LIS>circulation theory & Ptolemy's approach	Cx
11	LIS philosophy=skeptic's search for truth	Co
	13th-19th Centuries	
12	Censorship> based on Plato's 'general good'	Cx
12	Form=an ideal,nonphysical,metaphysical entity	Co
13	Communication>bilateral code	Cx
13	Knowledge>doing vs hypothesis	Cx-S
14	Form=physical,material entity	Co
14	Computer science>principle of economy	Cx
14	Philosophy of science= defined as simple explanation	Co
14	Information> impact of Occam's Razor principle	Cx
15	LIS>political role	Cx
15	LIS>impact of Protestant ethics (self-improvement)	Cx
16	Philosophy of science=experimentation & observation	Co
16	Science=image of the essentials	Co-M
16	Methodology>technological impact on intellectual life	Cx
16	Knowledge classification>tripartite division	Cx-S
16	LIS>Baconian outline of knowledge & classification	Cx
16	LIS idols> based on Bacon's preconceptions	Cx
16	LIS classification>Baconian inverted categories	Cx
	Reading makes a full man>limitations	CR-S

16	LIS power> in 'knowledge is power'	Cx
16	LIS=philosophy based on importance of reading	Co
16	Reading^criticized as library principle	CR-S
16	Book quality>influence on Putnam	Cx
16	LIS theory>middle axioms principle	Cx
16	Information retrieval>and Bacon's sensory perception	Cx-S
16	LIS philosophy> and Bacon's humanism	Cx
16	LIS philosophy^substance vs its instruments	CR-W
16	Ideas > determine relevance of facts	Cx
16	LIS philosophy>impact of inductive methodology	Cx
17	LIS discourse> based on Galilean dialogue	Cx
17	Scientific laws> are mathematical in nature	Cx
17	Censorship> initiated by Church control of dissemination	Cx
18	Form=metaphysical entity uniting mind-body dualism	Co
18	Duality of mind-body ^ criticized as a mechanical view	CR
18	Communication> by compressed mathematical information	Cx
18	LIS social role> implied by opposition to deductive view	Cx
18	Communication< of cognitive & neurological processes	Pd
18	Cybernetics> based on Descarates mechanistic view	Cx
18	Model=analogies & mechanical description	Co
18	Science > contains no questioned knowledge	Cx-M
18	Thinking > as a base for generalizations & reason	Cx-S
19	Knowledge >descriptive vs philosophical	Cx-S
20	LIS > social responsibility & freedom of the press	Cx
20	Librarians > search for fragmented truth	Cx-S
20	Education > criticized for low level	Cx-S
21	Information science>anticipated by calculating machine	Cx
21	Computer's> anticipation in calculating machine	Cx
22	Library collection> of inventions,experiments & history	Cx
22	Classification=alphabetic,chronological & by subject	Co
22	Library = as depository of practical information	Co
22	LIS & information science> unification	Cx
22	Librarians= principles & duties	Co-S
22	Library = scholarly social function	Co
22	Classification system > impact on Bliss	Cx
22	Information & communication theory>stressing symbolism	Cx
22	Logic > mathematical symbolism	Cx
22	Reality,virtual > and Leibnitz philosophy	Cx
22	Cybernetics = symbolism & calculus of reason	Co
22	Logic,symbolic > based on Leibnitz philosophy	Cx
22	Logical analysis> and synthesis as bases for reasoning	Cx
23	Ideas > as products of sensation	Cx-S
23	Metaphysics = reduced to experimental science	Co-M
23	Education> rejecting innate ideas & intuitive knowledge	Cx
23	Mind = as tabula rasa	Co
23	Ideas> stored by similarity,contiguity & cause-effect	Cx
23	Mind> as tabula rasa and learning by experience	Cx
23	Education > importance of environment	Cx
23	LIS > influenced by people's consent	Cx
23	Communication< of cognitive & neurological processes	Pd
23	Information media < Truth of objective reporting	Cx
23	Education = promotion of virtue & morals	Co
24	Reality > mirrored by mathematical structure	Cx
	Hypothesis = method of discovery	Co-S

24	Scientists> dependence on recorded knowledge	Cx-S
24	LIS research < practice & principle of least effort	Pd
24	Science ^ vs Newton's absolute space & time	CR
25	Reality > monistic, mental	Cx
25	Thinking > dependent on experience	Cx
25	Reality > its qualitative properties are apparent	Cx-N
26	LIS > modern university is a library of books	Cx-S
26	Librarian < as book specialist & provider of reading	Pd
26	Book < as the preserver of culture	Pd
27	Methodology > of induction based on predictions	Cx
27	Library,Public> focus on Hume's principle of utility	Cx
28	LIS>and science of society (social vs physical reality)	Cx-W
29	Cybernatics = as the science of the government	Co
29	Cybernatics=relationships between people making choices	Co
30	Library,Public > began with utilitarian principle	Cx
30	Knowledge > acquisition based on end-results	Cx
30	Readers behavior^ interpreted statistically criticized	CR
30	Knowledge^instrumental vs metaphysical ideas criticized	CR-W
30	LIS goal^ of greatest good impossible mathematically	CR-S
31	Library,Public > a descendent of 18c. social library	Cx
31	Education = forum for discussions about philosophies	Co-S
31	Library,social > the only provider of popular books	Cx
32	Communication theory = information-selected symbols	Co
33	Individual rights > interpreted by social contract	Cx
34	Decision-making=decentralization & little government	Co
34	Management > division of labor	Cx
34	Library services = price for disadvantages to client	Co
34	Knowledge = a product subject to recourse allocation	Co-M
35	LIS>administration as prerequisite for professional act	Cx
35	Communication = principle of connecting	Co
36	Reality = as category of mind & base for conceptualism	Co-N
36	Humanistic method < similar to Hegelian dialectics	Pd
36	LIS philosophy=undefined but based on experience	Co
36	Classification,subject+ knowledge,logic & metaphysics	Co
36	LIS>major concepts relate to definitions of entities	Cx
36	Classification = as metaphysical synthesis	Co-S
36	History = dialectical expression of World Spirit	Co
36	Information science = formal-methodological & cultural	Co
36	LIS neutrality ^ opposed by Hegelian Marxists	CR
37	Knowledge diffusion=its goal preservation of freedom	Co
37	Library,university mission = service to society	Co-S
37	Library history>intellectual freedom and neutrality	Cx
37	LIS history > as a progressive liberal continuum	Cx
37	Library patron>unique individual and need to educate all	Cx
37	LIS>shift from serving elite only to all working people	Cx
37	Library,small circulating=aim to educate citizens	Co
37	Classification > based on Baconian system	Cx-S
38	Understanding categories ^ replaced by social contract	CR
38	Knowledge> formed by interaction with environment	Cx
38	Metaphysics = as science of first principles	Co-M
38	Knowledge = pure,rational & applied,empirical	Co-S
38	Knowledge = understanding & reason	Co-S
38	Form = ideal,abstract,nonphysical entity	Co
38	Ethics = principle defined in terms of ends not means	Co

38	Ethics>Neo-Aristotelean practice vs Kant's deontology	Cx
38	Form & structure> vs substance & content;'how' vs 'what'	Cx
38	Knowledge,subjective > perceived vs actual	Cx
38	Ethics=individual responsibility for self-improvement	Co
38	Library = provision of personal knowledge	Co
38	Ethics = deontological categorical imperative	Co
39	LIS:forms & ideas > vs order in chaos	Cx
	19th century:	
40	Knowledge^ confused with what it is	CR
40	LIS,comparative = principle of studying society	Co
40	Knowledge = anti-metaphysical study of nature	Co-S
40	Knowledge=decreased generality & increased complexity	Co-S
41	System=combining empirical data into coherent order	Co
41	Librarian,reference > aware of emotional communication	Cx
41	Knowledge,intellectual> (eg poetry,music) importance of	Cx-M
41	Knowledge of oneself> and one's place in universe	Cx-S
41	Research > based on analysis & synthesis	Cx-S
41	System=organizational & biotic functional equivalence	Co
41	LIS ^ criticized for accepting Darwinian model	CR
41	LIS > survival rests on adaptation to environment	Cx
41	Information for survival^ counterbalances Darwin's law	CR
41	Information technology^ converses Darwin's evolution	CR
41	Knowledge=survival of the wisest updates Darwin's law	Co-N
41	Classification of species> impact on LIS classification	Cx-S
42	Information> combines objective & subjective reality	Cx
43	LIS> education role to provide value-ladden resources	Pd
44	Materialism,dialectical>economic factor in human life	Cx
44	Knowledge - as ideologically laden information	Co
44	Librarians > important role in building socialism	Cx
44	Librarianship,socialistic =defined in political context	Co
44	LIS>socialistic bibliology based on dialectical laws	Cx
44	Classification >based on historically evolved subjects	Cx
44	Information < tools in regulating society	Pd
44	Change> in quantity is a change in quality	Cx
44	Information > commercialized in capitalism	Cx
44	LIS philosophy^criticized for its capitalistic approach	CR
44	LIS theory^criticized for irreconcilable contradictions	CR
44	LIS ^ demytologized by Marxism	CR
45	Librarianship,comparative = study of caused for change	Co
45	Philosophy >calling for objective reporting of truth	Cx
45	Neutrality >confused with social activism	Cx
45	Library,public = based on utilitarian principle	Co
45	Library,public > self-help & philanthropic support	Cx
45	Reading freedom > based on individual freedom	Cx
45	LIS is nonprofessional > saving of books not life	Cx
45	Ethics>intellectual freedom & censorship relations	Cx
45	Knowledge = is defined by causes, arts by effect	Co-M
45	Education>argument for liberal, professional approach	Cx-S
45	Knowledge>professional & directed by professionals	Cx-S
45	Librarians^criticized for uncritical view of democracy	CR
46	LIS philosophy >based on changing functions	Cx
47	Education goal= developing thinking for its own sake	Co-N
	Thinking =as reconstruction of content of experience	Co-S

47	Knowledge > merged with non-intellectual elements	Cx-M
47	Education > based on continuing learning	Cx-S
47	Thinking >is independent of conclusions	Cx
47	Education,professional^pragmatism vs intellectual view	CR
47	Philosophy = is personal based on unique experiences	Co
47	LIS philosophy>subject-matter & theory-practice harmony	Cx
47	LIS:pragmatic=discipline,aiming at patrons education	Co
47	LIS philosophy=practical,normative,operation-oriented	Co
47	LIS philosophy = based on learning by 'doing' processes	Co
47	LIS philosophy<process of discoveries vs assimilation	Pd
47	LIS education<personal experience & teaching method	Pd
47	LIS goal=interrelating intellectual & practical needs	Co-N
47	Library>instrumental uses reflect different philosophy	Cx
48	Communication>impact of psychological aspects of change	Cx
48	LIS philosophy ^ laws of society vs natural laws	CR-W
49	Method>Freud's symbol-deciphering impact on Marxism	Cx
50	Libraries=free & adequate service to everybody	Co
51	Knowledge,subjective>impetus for phenomenological view	Cx
51	Librarianship>seen in terms of scientific objectivity	Cx
52	Hypothesis>life & dead;former preferred over later	Cx
52	Reason,subjective>in order to know we structure	Cx
52	Knowledge>of:by acquaintance & about:systematic study	Cx-M
52	LIS >defense of freedom must be organized	Cx-S
52	LIS<logical & moral approach based on faith in oneself	Pd
52	Philosophy>obedience to facts & hospitality to change	Cx-S
52	Classification>based on properties,not aspects of thing	Cx-S
52	Philosophy of James-criticized as anti-intellectual	CR-W
53	Library role<building socialistic system	Pd
53	Library>use of books vs static book collection	Cx
54	Language>relative,empirical,environmental context	Cx
54	Symbolic interactionism=empirical & ideative order	Co-W
54	Communication>symbolic interactionism vs Systems theory	Cx-S
55	Ethics>naturalistic fallacy:'ought' doesn't follow 'is'	Cx
55	Philosophy,analytical> contribution to causal analysis	Co
56	Education=progressive,practical & problem solving	Co
56	Research=synoptic grasp,analysis & explanation	Co
57	Reality=phenomenal & noumenal,scientific & humanistic	Co
58	LIS bibliopsychology<book content changes with readers	Pd
58	LIS bibliopsychology = as guide to readers advice	Co
58	Book selection<to satisfy readers psychological needs	Pd
58	Readers -their interest measured statistically	CR
59	Method,philosophical> based on mathematical symbolism	Cx
59	Philosophy=clarification of propositions & concepts	Co
59	Knowledge & knowledgeability>contextual aspects	Cx-N
59	Ethics=determination of but no rules of conduct	Co
59	Symbols,Greek >as increased speed & secrecy of writing	Cx
59	Knowledge>language as its symbolic structure	Cx-S
59	Symbols,mathematical>have no equivalence in real world	Cx
59	Knowledge>social & individual,both uncertain,inexact	Cx-M
59	Language,symbolic=algebraic manipulation of ideas	Co-S
60	Knowledge>bifurcated into abstract & concrete	Cx-S
60	Science> dependence on its predecessors	Cx-S
60	Knowing processes<mediate between idealism & realism	Pd-S
	LIS,comparative=social changes & biological growth	Co

60	LIS model>social institution & environmental adaptation	Cx
60	Library context>social evolutionary patterns	Cx
61	Model of formal organization>symbolized by charts	Cx
61	Management>power of charismatic vs cognitive authority	Cx
61	Science=scholarship,research & higher learning	Co-M
61	LIS >bureaucratic structure,rules,competence & labor	Cx
61	LIS philosophy>'Golden Mean' limitations	Cx
62	Truth>variable generic quality;feeling vs verbalization	Cx-M
62	Form=Platonic,ideal,abstract,nonphysical entity	Co
62	Knowledge=continuum of whole-part relations	Co-N
62	Education=practice,theory,technology & intellect	Co-S
62	Reality>extended to 'quality of life,facts & opinions	Cx-F
62	Education,librarians>need for philosophical course	Cx-S
62	Information-criticism of scientific approach	CR-W
62	Science>no permanence or ultimate truth	Cx-S
62	Information theory> based on symbolism	Cx
62	LIS>danger of isolation from other disciplines	Cx
62	Thinking<need for recording it in writing	Pd
	20 Century	
63	Freedom=determined by social equality & justice	Co
63	Reading=a process of learning & thinking	Co-N
63	Education=learning by discovery,experience & technical	Co-S
63	Communication>never perfect,no passive reading	Cx-S
63	Form=meaning vary with philosophies	Co
64	Philosophy,analytical=study of linguistic ambiguity	Co
64	Knowing=state of mind & understanding about reality	Co
65	Philosophy=logical analysis of linguistic usage	Co
65	Knowledge or opinion>distinction is insignificant	Cx
66	LIS=defined in terms of transcendental epistemology	Co
67	Systems,General Theory=a general science of 'wholeness'	Co-N
67	Systems,General Theory=theoretical-empirical knowledge	Co
67	LIS>General Systems metaphysical & empirical component	Cx-N
67	LIS knowledge= organization,management & general systems	Co
67	LIS=open system & systems philosophical approach	Co-F
67	Systems=methodology,analysis,research & engineering	Co
67	LIS-symbols transfer vs systems empiricism	CR-W
67	Classification>incorporating philosophy & science	Cx-F
67	Systems isomorphy laws>disciplines' unitary concepts	Cx
67	Systems>reality as hierarchy of organized wholes	Cx
67	Systems-theory vs symbolic interactionism	CR-W
68	LIS>pluralistic (fox) & dualistic (hedgehog) philosophy	Cx
69	Library>non-partisan approach to all ideologies	Cx
70	Communication,existential>with no philosophical content	Cx
70	Philosophy,existential>knowledge-society interaction	Cx
71	Communication>syntax & language competence importance	Cx
71	Language='transformational grammar'	Co-F
71	Language=innate relations between syntactical forms	Co
71	Knowledge acquisition>through mind's innate properties	Cx-S
71	Language<infinite number of writing systems	Pd
72	Philosophy of Heidegger-impact on some writers	CR
72	Philosophy of Heidegger-misinterpretation	CR
72	Philosophy>phenomenological analysis & virtual reality	Cx
	Models>as a mark of discipline's maturity	Cx

73	LIS=metascience & metaphorical structure,order,form	Co-N
73	LIS philosophy=instrumental means for education	Co
73	LIS philosophy=communication,organization & labor	Co
73	LIS philosophy=metaphysical approach	Co
73	LIS & philosophy> as metasciences	Cx
73	LIS & philosophy>ideas about nature	Cx
73	Librarianship= defined as a metascience	Co-W
73	LIS>focus on noetic form of mind itself	Cx-W
73	Information=formal abstraction & physical manifestation	Co-W
73	Ideas>metaphysical nature vs physical manifestation	Cx-W
73	LIS philosophy-conceptual structure & form criticized	CR
73	LIS metascience-common bibliographic methodology only	CR
73	LIS operations<based on humanistic laws	Pd
73	LIS>functions & purposes related to users & uses	Cx
73	LIS education>humanistic,vocational & metascientific	Cx-S
73	Librarians>telus(idealists) vs mechus type(scientists)	Cx-W
73	Librarians humanism>based on interest in human issues	Cx-W
73	Law of instrument> same as 'medium is the message'	Cx-S
74	LIS >physical & conceptual reality & isomorphism	Cx-N
74	Knowledge=applied metascience of organized records	Co
74	Systems philosophy>relates to LIS as system & process	Cx-F
74	LIS>isomorphism of physical & conceptual realities	Cx-N
75	Society>pre-literate,monolithic & literate,pluralistic	Cx
75	'Culture= is communication'	Co
76	Information>ignorance explosion & intellectual decrease	Cx
76	Information>and reference to indicators of experience	Cx
77	Information=logical,quantitative,scientific definition	Co
78	Library purpose='social functionalism' of social needs	Co
78	LIS,comparative^cultures are incomparable wholes	CR
79	Knowledge of & search for>truth as base for tolerance	Cx
80	Information=syntactic,semantic & pragmatic dimensions	Co
80	Communication=commonage of significance using symbols	Co
80	Language=plurisituational compound signs	Co-S
81	Science=general,systematic knowledge of propositions	Co-M
81	LIS theory=abstract calculus,rules & model	Co
82	LIS mission='setting to rights' book's function	Co-S
82	LIS^selection by censorship vs democratic philosophy	CR
82	Knowledge >as a relative concept	Cx
82	LIS philosophy>metaphysical vs perceived knowledge	Cx
82	LIS selection^means to improve the flow of good books	Pd-N
82	Knowledge>includes nonverbal thoughts	Cx-M
82	Information>the form vs institutional function of LIS	Cx
82	Librarian<filter between quality of books & readers	Pd
82	Librarian:<gatekeeper of the last resort	Pd
82	Librarians responsibility>selecting vs prescribing book	Cx
82	Censorship>intellectual freedom vs censorship	Cx
82	LIS neutrality<disposing bad books by resource sharing	Pd
82	LIS philosophy>Ortega's view praised or distorted	Cx
82	LIS philosophy>Ortega's impact	Cx
82	Librarians< as controllers of book production	Pd
82	Librarians <Masters of the raging books'	Cx
82	Librarians< as policemen of books	Pd
82	Librarians power>social & political influence	Cx
	LIS=metaphysical definition	Co

83	Ethics >based on Root Metaphor Theory of Metaphysics	Cx-N
83	LIS philosophy>metalibrarianship & World hypotheses	Cx-N
83	LIS philosophy=conceptual,contextual,procedural levels	Co-N
83	LIS philosophy=metaphysical structure of postulates	Co-N
83	LIS>Pepper's model	Cx-N
83	LIS theoryCxmetaphysical model	Cx-N
83	LIS research> based on metaphorical model	Cx
83	LIS purposive behavior>appetition & aversion	Cx
84	Science>causative relations & psycho-sociological	Co
84	Concepts>are not language dependent	Cx
84	Knowledge<concept manipulation-varied classification	Pd-S
84	LIS>genetic dimension for epistemology of communication	Cx
84	Knowledge>coded fact,figurative,operative information	Cx
84	LIS model>information-seeking behavior (cognitive)	Cx
84	Learning>Classificatory & relational activities	Cx-F
84	Contextualims,(metalibrary>operative knowledge,know-how	Co-N
84	LIS information retrieval>based on cognitive structure	Cx-N
84	Research,humanities<handicapped by lack of measurements	Pd
84	Processes cognitive>Piaget contributions	Cx
84	LIS conversation<importance of its dynamics	Pd
85	Epistemology>context of intellectual processes	Cx-S
85	Knowledge=art of knowing & art of doing (skill)	Co-M
85	Information<tools for but not phenomena themselves	Pd-F
85	Knowledge=public (written) & private (in our minds)	Co
85	LIS>too much theory leads to empty formalism	Cx-S
85	Knowledge<process of cognition is largely unknown	Pd-S
85	Truth vs sophistry>interpretation of the message	Cx-S
85	Science>limited knowledge of specialists	Cx
86	Dualism>transcendent by 3rd World of forms & ideas	Cx-W
86	Truth=the statement that contains the least error	Co
86	Knowledge=epistemology of knowledge about knowledge	Cx-S
86	LIS philosophy=recorded knowledge & its interpretation	Co-W
86	Knowledge,objective>social epistemology & brain's role	Cx
86	Knowledge>and information used interchangeably	Cx
86	Knowledge>objective of 3rd World & social epistemology	Cx
86	Knowledge,scientific>growth,accumulation,transmission	Cx-S
86	Truth>can never be attained or substituted	Cx-S
86	Model>interaction between three Popper's worlds	Cx
86	Model of 3 worlds =as context of human activities	Co
86	Model,W2 (subjective)=accessible knowledge	Co
86	Model,W3(objective)>knowledge can't restrict itself	Cx
86	Model,Accessible knowledge< retrievable by specialists	Pd
86	Model<three worlds interconnected by communication	Pd
86	Model>3 worlds-subjectivity vs objectivity avoided	Cx
86	Model>3 worlds-materialistic & positivistic description	Cx
86	Model>mental-physical relationship rejected	Cx
86	Model>3-fold interpretation & metalibrary dimensions	Cx-N
86	LIS methodology=trial & error,problem oriented	Co
86	Science> self-criticism subject to falsifiability	Pd
86	Science>certain only of false propositions	Cx
86	Science definition> is tentative subject to refutation	Cx-M
86	LIS>W1(physical),W2(subjective),W3(records of W1&W2)	Cx
86	LIS as W3'=books,libraries as storage & computer memory	Co
	Information^ confused with data by Popper	CR

86	LIS philosophy<Popper's model as problem solving method	Pd
86	Information>comparison of Popper's & Dervin's models	Cx
86	Model=W1(material),W2(mind's product),W3(W1-W2 analog)	Co
86	Reality=W1physical,experimental & W2mental,cognitive	Co
86	Information retrieval=physical & bibliographic access	Co
86	Computer^criticized as a glorifying pencil	CR
86	LIS model>Popper's worlds & Nitecki's metalibrarianship	Cx
86	Model,psychophysical>brain,body vs self-conscious mind	Cx
86	Method,scientific^ misconstruction of history	CR
86	Model,Popper's^ignores context & content of information	CR
87	Ethics>right action not determined by its consequences	Cx
88	Methodology>mind & matter not the same logical types	Cx-N
88	Language,ordinary=mental concepts governed by behavior	Cx
88	Method<'use'(operations) & 'usage'(word-use custom)	Pd
88	Theory formation> as marking the new path for research	Cx
88	Knowing> 'how'(skill) vs 'that' (acquiring information)	Cx-M
88	Mind>volition is not restricted to human only	Cx
89	Reality= is partly defined by individual's value system	Co
89	Truth^of proposition vs existential truth of existence	CR
90	Thought=verbal,non-verbal,covert or overt behavior	Co-N
90	Information> as independent variable excludes human acts	Cx
90	Communication-language relations^conditional reflexes	CR
91	Culture>humanities-technology opposition	Cx
91	Cultures>artistic & scientific have no common ground	Cx
91	Scientist>specialist vs manager,generalist roles	Cx
91	Reality>two cultures as complementary,not antithetical	Cx
91	Culture>humanities-science snobbish exclusivity	CR-M
92	Metaphysical description=conceptual analysis of thought	Co
93	LIS>feeling & will over reason;art unifying factor	Cx
94	Information science>impact of analytical insight	Cx
94	Philosophy>empiricism vs subjective analysis	Cx
94	Language>metaphysical propositions vs logic of language	Cx
94	Proposition=its meaning:the method of its verification	Co-M

APPX-4: Frequency of Key Words Citations

Philosophers	Levels of citations					Selected Librarians				
	Co	Cx	Pd	Cr	Total	F	M	N	S	W*
5BC-2AD:										
1. Heraclitus	1	1			2					1
2. Pythagoras	1				1			1		
3 Leucipius	1				1					1
4 Parmenides	1				1					1
5 Protagoras	1	1			2			1		
6 Democritus		1			1					1
7 Socrates	2	8	1	3	14					4
8 Plato	1	18	2	11	32		1	1	4	2
9 Aristotle	4	15	1	1	21		1		2	2
10 Ptolemy		2			2					
11 Sextus	1				1					
SUB-TOTAL	13	46	4	15	78		2	3	6	12
13AD-19AD:										
12 Aquinas	1	1			2					
13 Bacon,R.		2			2				1	
14 Ockham	2	2			4					
15 Luther		2			2					
16 Bacon,F.	3	12		3	18		1		4	1
17 Galileo		3			3					
18 Descartes	2	5	1	1	9		1		1	
19 Hobbes		1			1				1	
20 Milton		3			3				2	
21 Pascal		2			2					
22 Leibnitz	5	8			13				1	
23 Locke	3	7	1		11		1		1	
24 Newton	1	2	1	1	5				2	
25 Berkeley		3			3			1		
26 Carlyle		1	2		3				1	
27 Hume		2			2					
28 Montesquieu		1			1					1
29 Ampre	2				2					
30 Bentham		2		3	5				1	1
31 Franklin	1	2			3				1	
32 Hartley	1				1					
33 Rousseau		1			1					
34 Smith,A.	3	1			4		1			
35 Goethe	1	1			2					
36 Hegel	6	1	1	1	9			1	1	
37 Jefferson	3	5			8				2	
38 Kant	8	4		1	13		1		2	
39 Laplace		1			1					
SUB-TOTAL	42	75	6	10	133	0	5	2	21	3

19-20AD:										
40 Comte	3			1	4				2	
41 Darwin	3	6		3	12		1	1	3	
42 Huxley		1			1					
43 Kierkegaard			1		1					
44 Marx	2	6	1	3	12					
45 Mill,J.	3	8		1	12		1		2	
46 Bergson		1			1					
47 Dewey,J.	7	5	2	1	15		1	2	2	
48 Durkheim		1		1	2					1
49 Freud		1			1					
50 Gandhi	1				1					
51 Husserl		2			2					
52 James,W.		6	1	1	8		1		3	1
53 Lenin		1	1		2					
54 Mead	1	2			3				1	1
55 Moore,G.	1	1			2					
56 Peirce,C.	2				2					
57 Royce	1				1					
58 Rubakin	1		2	1	4					
59 Russell,B.	3	6			9		1	1	2	
60 Spencer	1	4	1		6				3	
61 Weber	1	4			5		1			
62 Whitehead	3	6	1	1	11	1	1	1	3	1
SUB-Total	33	61	10	13	117	1	7	5	21	4
20 AD										
63 Adler	4	1			5			1	2	
64 Austin	1	1			2					
65 Ayer	1	1			2					
66 Barfield	1				1					
67 Bertalanffy	5	4		2	11	2		2		2
68 Berlin		1			1					
69 Bohm		1			1					
70 Bubber		2			2					
71 Chomsky	2	2	1		5	1			1	
72 Heideggert		1		2	3					
73 Kaplan	6	10	1	2	19			1	2	6
74 Laszlo	1	3			4	1		2		
75 Levi-Strauss	1	1			2					
76 Lukasiewicz		2			2					
77 Mackay	1				1					
78 Malinowski	1			1	2					
79 Maritain		1			1					
80 Morris,C.	3				3				1	
81 Nagel	2				2		1			
82 Ortega	2	10	6	1	19		1	1	1	
83 Pepper	2	6			8			6		
84 Piaget	2	7	3		12	1		2	1	
85 Polanyi	2	4	2		8	1	1		4	
86 Popper	9	19	4	4	36		1	1	3	2
87 Ross		1			1					
Ryle		5	1		6		1	1		

89 Sartre	1			1	2					
90 Skinner	1	1		1	3			1		
91 Snow		4		1	5		1			
92 Strawson	1				1					
93 Vasconcelos		1			1					
94 Wittgenstein	1	3			4		1			
Sub-Total	50	92	18	15	175	6	7	18	15	10
TOTAL	138	274	38	53	503	7	21	28	63	29

* NOTES:
Co: Conceptual level
Cx: Contextual level
Pd: Procedural level
CR: Critical comment
F: Foskett
M: Machlup
N: Nitecki
S: Shera
W: Wright

Most often cited philosophers:
Popper (36 times)
Plato (32 times)
Aristotle (21 times)
F. Bacon (18 times)
Kaplan (19 times) : 7 philosophers were cited 159 times
Ortega (18 times) (i.e.,31.9% of all citations)
J.Dewey (15 times) ..:

Socrates (14 times) ..
Kant (13 times) : 13 philosophers were cited 146 times
Leibnitz (13 times) : (ie 26% of all citations)
Darwin (12 times) :
Marx (12 times) :
Mill (12 times) :
Piaget (12 times) :
Bertelanffy (11 times) :
Whitehead (11) times :
Locke (10 times) :
Descarates (9times)
Russell (9 times)
Polanyi (8 times)

Hegel .. Each of these 4 philosophers
W.James : was cited 8 times
Jefferson : (ie 0.8% of all citations)
Pepper :

Thus 24 individuals were cited above the average of 8 citations per philosopher.

APPX-5: Analyzes of Most Frequently Cited Key Words

APPX-5A: Most Frequently Used Key Words

Library Information Science (LIS)

8 LIS conceptual level>based on reality of rational ideas
8 LIS philosophy>based on Platonic dialogue
8 LIS philosophy>Platonic vs Aristotelean approaches
8 LIS,communication>essential for social functioning
8 LIS,paternalistic^impact of Plato on selection
8 LIS,use of>motivated by human ignorance
9 LIS >neutrality vs equals treated as unequal
9 LIS philosophy>based on efficient & final cause
9 LIS theory=terminus ad quo,ad quem & the process
10 LIS >compared to Ptolemy's geocentric view
10 LIS>circulation theory & Ptolemy's approach
11 LIS philosophy=skeptic's search for truth
15 LIS>impact of Protestant ethics (self-improvement)
15 LIS>political role
16 LIS classification>Baconian inverted categories
16 LIS idols> based on Bacon's preconceptions
16 LIS philosophy> and Bacon's humanism
16 LIS philosophy>impact of inductive methodology
16 LIS philosophy^substance vs its instruments
16 LIS power> in 'knowledge is power'
16 LIS theory>middle axioms principle
16 LIS=philosophy based on importance of reading
16 LIS>Baconian outline of knowledge & classification
17 LIS discourse> based on Galilean dialogue
18 LIS social role> implied by opposition to deductive view
20 LIS > social responsibility & freedom of the press
22 LIS & information science> unification
23 LIS > influenced by people's consent
24 LIS research < practice & principle of least effort
26 LIS > modern university is a library of books
28 LIS>and science of society (social vs physical reality)
30 LIS goal^ of greatest good impossible mathematically
35 LIS>administration as prerequisite for professional act
36 LIS neutrality ^ opposed by Hegelian Marxists
36 LIS philosophy=undefined but based on experience
36 LIS>major concepts relate to definitions of entities
37 LIS history > as a progressive liberal continuum
37 LIS>shift from serving elite only to all working people
39 LIS:forms & ideas > vs order in chaos
40 LIS,comparative = principle of studying society
41 LIS > survival rests on adaptation to environment
41 LIS ^ criticized for accepting Darwinian model
43 LIS> education role to provide value-ladden resources
44 LIS ^ demytologized by Marxism
44 LIS philosophy^criticized for its capitalistic approach
44 LIS theory^criticized for irreconcilable contradictions
44 LIS>socialistic bibliology based on dialectical laws
45 LIS is nonprofessional > saving of books not life

46 LIS philosophy >based on changing functions
47 LIS education<personal experience & teaching method
47 LIS goal=interrelating intellectual & practical needs
47 LIS philosophy = based on learning by 'doing' processes
47 LIS philosophy<process of discoveries vs assimilation
47 LIS philosophy=practical,normative,operation-oriented
47 LIS philosophy>subject-matter & theory-practice harmony
47 LIS:pragmatic=discipline,aiming at patrons education
48 LIS philosophy ^ laws of society vs natural laws
52 LIS >defense of freedom must be organized
52 LIS<logical & moral approach based on faith in oneself
58 LIS bibliopsychology = as guide to readers advice
58 LIS bibliopsychology<book content changes with readers
60 LIS model>social institution & environmental adaptation
60 LIS,comparative=social changes & biological growth
61 LIS >bureaucratic structure,rules,competence & labor
61 LIS philosophy>'Golden Mean' limitations
62 LIS>danger of isolation from other disciplines
66 LIS=defined in terms of transcendental epistemology
67 LIS knowledge= organization,management & general systems
67 LIS-symbols transfer vs systems empiricism
67 LIS=open system & systems philosophical approach
67 LIS>General Systems metaphysical & empirical component
68 LIS>pluralistic (fox) & dualistic (hedgehog) philosophy
73 LIS & philosophy> as metasciences
73 LIS & philosophy>ideas about nature
73 LIS education>humanistic,vocational & metascientific
73 LIS metascience-common bibliographic methodology only
73 LIS operations<based on humanistic laws
73 LIS philosophy-conceptual structure & form criticized
73 LIS philosophy=communication,organization & labor
73 LIS philosophy=instrumental means for education
73 LIS philosophy=metaphysical approach
73 LIS=metascience & metaphorical structure,order,form
73 LIS>focus on noetic form of mind itself
73 LIS>functions & purposes related to users & uses
74 LIS >physical & conceptual reality & isomorphism
74 LIS>isomorphism of physical & conceptual realities
78 LIS,comparative^cultures are incomparable wholes
81 LIS theory=abstract calculus,rules & model
82 LIS mission='setting to rights' book's function
82 LIS neutrality<disposing bad books by resource sharing
82 LIS philosophy>metaphysical vs perceived knowledge
82 LIS philosophy>Ortega's impact
82 LIS philosophy>Ortega's view praised or distorted
82 LIS selection^means to improve the flow of good books
82 LIS=metaphysical definition
82 LIS^selection by censorship vs democratic philosophy
83 LIS philosophy=conceptual,contextual,procedural levels
83 LIS philosophy=metaphysical structure of postulates
83 LIS philosophy>metalibrarianship & World hypotheses
83 LIS purposive behavior>appetition & aversion
83 LIS research> based on metaphorical model
83 LIS theoryCxmetaphysical model

83 LIS>Pepper's model
84 LIS conversation<importance of its dynamics
84 LIS information retrieval>based on cognitive structure
84 LIS model>information-seeking behavior (cognitive)
84 LIS:>genetic dimension for epistemology of communication
85 LIS>too much theory leads to empty formalism
86 LIS as W3'=books,libraries as storage & computer memory
86 LIS methodology=trial & error,problem oriented
86 LIS model>Popper's worlds & Nitecki's metalibrarianship
86 LIS philosophy<Popper's model as problem solving method
86 LIS philosophy=recorded knowledge & its interpretation
86 LIS>W1(physical),W2(subjective),W3(records of W1&W2)
93 LIS>feeling & will over reason;art unifying factor

#2 Knower, Knowing, Knowledge
7 Knower=is also a non-knower
7 Knowledge>creates virtue
13 Knowledge>doing vs hypothesis
16 Knowledge classification>tripartite division
19 Knowledge >descriptive vs philosophical
30 Knowledge > acquisition based on end-results
30 Knowledge^instrumental vs metaphysical ideas criticized
34 Knowledge = a product subject to recourse allocation
37 Knowledge diffusion=its goal preservation of freedom
38 Knowledge = pure,rational & applied,empirical
38 Knowledge = understanding & reason
38 Knowledge,subjective > perceived vs actual
38 Knowledge> formed by interaction with environment
40 Knowledge = anti-metaphysical study of nature
40 Knowledge=decreased generality & increased complexity
40 Knowledge^ confused with what it is
41 Knowledge of oneself> and one's place in universe
41 Knowledge,intellectual> (eg poetry,music) importance of
41 Knowledge=survival of the wisest updates Darwin's law
44 Knowledge - as ideologically laden information
45 Knowledge = is defined by causes, arts by effect
45 Knowledge>professional & directed by professionals
47 Knowledge > merged with non-intellectual elements
51 Knowledge,subjective>impetus for phenomenological view
52 Knowldege>of:by acquaitance & about:systematic study
59 Knowledge & knowledgeability>contextual aspects
59 Knowledge>language as its symbolic structure
59 Knowledge>social & individual,both uncertain,inexact
60 Knowing processes<mediate between idealism & realism
60 Knowledge>bifurcated into abstract & concrete
62 Knowledge=continuum of whole-part relations
64 Knowing=state of mind & understanding about reality
65 Knowledge or opinion>distinction is insignificant
71 Knowledge acquisition>through mind's innate properties
74 Knowledge=applied metascience of organized records
79 Knowledge of & search for>truth as base for tolerance
82 Knowledge >as a relative concept
82 Knowledge>includes nonverbal thoughts
84 Knowledge<concept manipulation-varied classification

84 Knowledge>coded fact,figurative,operative information
85 Knowledge<process of cognition is largely unknown
85 Knowledge=art of knowing & art of doing (skill)
85 Knowledge=public (written) & private (in our minds)
86 Knowledge,objective>social epistemology & brain's role
86 Knowledge,scientific>growth,accumulation,transmission
86 Knowledge=epistemology of knowledge about knowledge
86 Knowledge>and information used interchangeably
86 Knowledge>objective of 3rd World & social epistemology
88 Knowing> 'how'(skill) vs 'that' (acquiring information)

#3 Librarians, Librarianship, Library
9 Librarian's definition=librarian qua librarian quality
9 Library>impact of Alexandrian collection
20 Librarians > search for fragmented truth
22 Librarians= principles & duties
22 Library = scholarly social function
22 Library = as depository of practical information
22 Library collection> of inventions,experiments & history
26 Librarian < as book specialist & provider of reading
27 Library,Public> focus on Hume's principle of utility
30 Library,Public > began with utilitarian principle
31 Library,Public > a descendent of 18c. social library
31 Library,social > the only provider of popular books
34 Library services = price for disadvantages to client
37 Library history>intellectual freedom and neutrality
37 Library patron>unique individual and need to educate all
37 Library,small circulating=aim to educate citizens
37 Library,university mission = service to society
38 Library = provision of personal knowledge
41 Librarian,reference > aware of emotional communication
44 Librarians > important role in building socialism
44 Librarianship,socialistic =defined in political context
45 Librarians^criticized for uncritical view of democracy
45 Librarianship,comparative = study of caused for change
45 Library,public = based on utilitarian principle
45 Library,public > self-help & philanthropic support
47 Library>instrumental uses reflect different philosophy
50 Libraries=free & adequate service to everybody
51 Librarianship>seen in terms of scientific objectivity
53 Library role<building socialistic system
53 Library>use of books vs static book collection
60 Library context>social evolutionary patterns
69 Library>non-partisan approach to all ideologies
73 Librarians humanism>based on interest in human issues
73 Librarians>telus(idealists) vs mechus type(scientists)
73 Librarianship= defined as a metascience
78 Library purpose='social functionalism' of social needs
82 Librarian:<gatekeeper of the last resort
82 Librarian<filter between quality of books & readers
82 Librarians <Masters of the raging books'
82 Librarians power>social & political influence
82 Librarians responsibility>selecting vs prescribing book
82 Librarians< as controllers of book production

82 Librarians< as policemen of books

#4 Information,Information Science and related subjects
8 Information science>materialistic & idealistic paradigm
9 Information society>based on recorded knowledge
14 Information> impact of Occam's Razor principle
16 Information retrieval>and Bacon's sensory perception
21 Information science>anticipated by calculating machine
22 Information & communication theory>stressing symbolism
23 Information media < Truth of objective reporting
36 Information science = formal-methodological & cultural
41 Information for survival^ counterbalances Darwin's law
41 Information technology^ converses Darwin's evolution
42 Information> combines objective & subjective reality
44 Information < tools in regulating society
44 Information > commercialized in capitalism
62 Information theory> based on symbolism
62 Information-criticism of scientific approach
73 Information=formal abstraction & physical manifestation
76 Information>and reference to indicators of experience
76 Information>ignorance explosion & intellectual decrease
77 Information=logical,quantitative,scientific definition
80 Information=syntactic,semantic & pragmatic dimensions
82 Information>the form vs institutional function of LIS
85 Information<tools for but not phenomena themselves
86 Information retrieval=physical & bibliographic access
86 Information>comparison of Popper's & Dervin's models
86 Information^ confused with data by Popper
90 Information> as independent variable excludes human acts
94 Information science>impact of analytical insight

#5a Communication and related subjects
1 Communication>is irreversible
8 Communication,oral>about truth by argument
9 Communication> and speaker's ethos
9 Communication>speaker-speech-audience & Shannon theory
13 Communication>bilateral code
18 Communication< of cognitive & neurological processes
18 Communication> by compressed mathematical information
23 Communication< of cognitive & neurological processes
32 Communication theory = information-selected symbols
35 Communication = principle of connecting
48 Communication>impact of psychological aspects of change
54 Communication>symbolic interactionism vs Systems theory
63 Communication>never perfect,no passive reading
70 Communication,existential>with no philosophical content
71 Communication>syntax & language competence importance
80 Communication=commonage of significance using symbols
90 Communication-language relations^conditional reflexes

#5b Model and related subjects
9 Model>mechanical & organismic analogies
18 Model=analogies & mechanical description
61 Model of formal organization>symbolized by charts

73 Models>as a mark of discipline's maturity
86 Model of 3 worlds =as context of human activities
86 Model,Accessible knowledge< retrievable by specialists
86 Model,Popper's^ignores context & content of information
86 Model,psychophysical>brain,body vs self-conscious mind
86 Model,W2 (subjective)=accessible knowledge
86 Model,W3(objective)>knowledge can't restrict itself
86 Model<three worlds interconnected by communication
86 Model=W1(material),W2(mind's product),W3(W1-W2 analog)
86 Model>3 worlds-materialistic & positivistic description
86 Model>3 worlds-subjectivity vs objectivity avoided
86 Model>3-fold interpretation & metalibrary dimensions
86 Model>interaction between three Popper's worlds
86 Model>mental-physical relationship rejected

#5c Philosophy and related subjects
8 Philosopher-king^as a dream
8 Philosophy & academic conflict>Protagoras,Socrates,Plato
14 Philosophy of science= defined as simple explanation
16 Philosophy of science=experimentation & observation
45 Philosophy >calling for objective reporting of truth
47 Philosophy = is personal based on unique experiences
52 Philosophy of James-criticized as anti-intellectual
52 Philosophy>obedience to facts & hospitality to change
55 Philosophy,analytical> contribution to causal analysis
59 Philosophy=clarification of propositions & concepts
64 Philosophy,analytical=study of linguistic ambiguity
65 Philosophy=logical analysis of linguistic usage
70 Philosophy,existential>knowledge-society interaction
72 Philosophy of Heidegger-impact on some writers
72 Philosophy of Heidegger-misinterpretation
72 Philosophy>phenomenological analysis & virtual reality
94 Philosophy>empiricism vs subjective analysis

#5d Science and related subjects
8 Science>of mutually exclusive classification
9 Science=defined as absolute certainty
16 Science=image of the essentials
17 Scientific laws> are mathematical in nature
18 Science > contains no questioned knowledge
24 Science ^ vs Newton's absolute space & time
24 Scientists> dependence on recorded knowledge
60 Science> dependence on its predecessors
61 Science=scholarship,research & higher learning
62 Science>no permanence or ultimate truth
81 Science=general,systematic knowledge of propositions
84 Science>causative relations & psycho-sociological
85 Science>limited knowledge of specialists
86 Science definition> is tentative subject to refutation
86 Science> self-criticism subject to falsifiability
86 Science>certain only of false propositions
91 Scientist>specialist vs manager,generalist roles

#6 Education and related subjects
8 Education,Republic<as an argument for democracy
8 Education<Plato's Republic as a tool
9 Education>Aristotelean & Platonic tradition
20 Education > criticized for low level
23 Education = promotion of virtue & morals
23 Education > importance of environment
23 Education> rejecting innate ideas & intuitive knowledge
31 Education = forum for discussions about philosophies
45 Education>argument for liberal, professional approach
47 Education > based on continuing learning
47 Education goal= developing thinking for its own sake
47 Education,professional^pragmatism vs intellectual view
56 Education=progressive,practical & problem solving
62 Education,librarians>need for philosophical course
62 Education=practice,theory,technology & intellect
63 Education=learning by discovery,experience & technical

#7 Reality and related subjects
5 Reality=as it appears to individual (metalibrarianship)
6 Reality>physical & formal combined in atomic matter
7 Reality>competition between physical & formal views
8 Reality,virtual>and Plato's philosophy
8 Reality>absolute & changing
22 Reality,virtual > and Leibnitz philosophy
24 Reality > mirrored by mathematical structure
25 Reality > its qualitative properties are apparent
25 Reality > monistic, mental
36 Reality = as category of mind & base for conceptualism
57 Reality=phenomenal & noumenal,scientific & humanistic
62 Reality>extended to 'quality of life,facts & opinions
86 Reality=W1physical,experimental & W2mental,cognitive
89 Reality= is partly defined by individual's value system
91 Reality>two cultures as complementary,not antithetical

#8 Method, Methodology and related subjects
7 Method,Socratic^paternalistic in selection & access
7 Method<Socratic inductive dialogue
8 Method>dialectics in study of principles
8 Method>instruction prior to reading
8 Methodology^rejection of technology
9 Methodology>Aristotelean at GLS
16 Methodology>technological impact on intellectual life
27 Methodology > of induction based on predictions
49 Method>Freud's symbol-deciphering impact on Marxism
59 Method,philosophical> based on mathematical symbolism
86 Method,scientific^ misconstruction of history
88 Method<'use'(operations) & 'usage'(word-use custom)
88 Methodology>mind & matter not the same logical types

#9a Classification and related subjects
9 Classification of knowledge^based on hierarchy
22 Classification system > impact on Bliss

22 Classification=alphabetic,chronological & by subject
36 Classification = as metaphysical synthesis
36 Classification,subject+ knowledge,logic & metaphysics
37 Classification > based on Baconian system
41 Classification of species> impact on LIS classification
44 Classification >based on historically evolved subjects
52 Classification>based on properties,not aspects of thing
67 Classification>incorporating philosophy & science

#9b Ethics and related subjects
9 Ethics>people as political animals
38 Ethics = deontological categorical imperative
38 Ethics = principle defined in terms of ends not means
38 Ethics=individual responsibility for self-improvement
38 Ethics>Neo-Aristotelean practice vs Kant's deontology
45 Ethics>intellectual freedom & censorship relations
55 Ethics>naturalistic fallacy:'ought' doesn't follow 'is'
59 Ethics=determination of but no rules of conduct
83 Ethics >based on Root Metaphor Theory of Metaphysics
87 Ethics>right action not determined by its consequences

#9c Form and related subjects
8 Form>relegates experience to imperfect ideal world
8 Form^as imperfect representation of ideal world
8 Form^not Platonic abstract but physical mass-energy
12 Form=an ideal,nonphysical,metaphysical entity
14 Form=physical,material entity
18 Form=metaphysical entity uniting mind-body dualism
38 Form & structure> vs substance & content;'how' vs 'what'
38 Form = ideal,abstract,nonphysical entity
62 Form=Platonic,ideal,abstract,nonphysical entity
63 Form=meaning vary with philosophies

APPX-5B:Major Key Words Related to Cited Philosophers

Key word	a	b	c	d	e	f	g
Library Information Science	6	6	3	12	9	8	7
Knowledge	5				1	2	1
Libraries			2	3		7	1
Information	3	1	1	1	1	1	
Communication		1	2				
Model	13		1	1			
Philosophy		2			1		1
Science	3	1	1		1		
Education		2	1				3
Reality	1	2					
Methods	1	3	1		1		
Classification			1				
Ethics			1				
Form		3					
Totals	32	21	14	17	14	18	13

NOTES:
a: Popper
b: Plato
c: Aristotle
d: Kaplan
e: F. Bacon
f: Ortega
g: J. Dewey
h: Others
i: Total

APPX-5C: Summary of Key Words Arranged by date

K e y w o r d	5BC-2AD	13-19	19-20	20	Total
Library Information Science	12	27	27	49	115
Knowledge	2	11	18	18	49
Libraries	2	16	13	12	43
Information	2	6	7	12	27
Communication	4	6	2	5	17
Model	1	1	1	14	17
Philosophy	2	2	6	7	17
Science	2	5	3	7	17
Education	3	5	7	1	16
Reality	5	5	2	3	15
Methods	6	2	2	3	13
Classification	1	5	3	1	10
Ethics	1	4	3	2	10
Form	3	5	1	1	10
Totals	46	100	95	135	376

APPX-5D: Levels of Cited Key Words

Key word	Co	Cx	Pd	Cr	Total
Library Information Science	26	64	11	14	115
Knowledge	15	29	3	2	49
Library	14	22	6	1	43
Information	5	16	2	4	27
Communication	3	11	2	1	17
Model	4	10	2	1	17
Philosophy	7	6	0	4	17
Science	5	10	1	1	17
Education	6	7	2	1	16
Reality	5	10	0	0	15
Methods	0	8	2	3	13
Classification	3	6	0	1	10
Ethics	4	6	0	0	10
Form	6	2	0	2	10
Totals	103	207	31	35	376

APPX-5E: List of Key Words Used by Selected Librarians

	Foskett	
62	Reality>extended to 'quality of life,facts & opinions	Cx
67	LIS=open system & systems philosophical approach	Co
67	Classification>incorporating philosophy & science	Cx
71	Language='transformational grammar'	Co
74	Systems philosophy>relates to LIS as system & process	Cx
84	Learning>Classificatory & relational activities	Cx
85	Information<tools for but not phenomena themselves	Pd
	Machlup	
8	'Knowing that'>as a superior knowledge	Cx
9	Science=defined as absolute certainty	Co
16	Science=image of the essentials	Co
18	Science > contains no questioned knowledge	Cx
23	Metaphysics = reduced to experimental science	Co
34	Knowledge = a product subject to recourse allocation	Co
38	Metaphysics = as science of first principles	Co
41	Knowledge,intellectual> (eg poetry,music) importance of	Cx
45	Knowledge = is defined by causes, arts by effect	Co
47	Knowledge > merged with non-intellectual elements	Cx
52	Knowldege>of by acquaintance & about:systematic study	Cx
59	Knowledge>social & individual,both uncertain,inexact	Cx
61	Science=scholarship,research & higher learning	Co
62	Truth>variable generic quality;feeling vs verbalization	Cx
81	Science=general,systematic knowledge of propositions	Co
82	Knowledge>includes nonverbal thoughts	Cx
85	Knowledge=art of knowing & art of doing (skill)	Co
86	Science definition> is tentative subject to refutation	Cx
88	Knowing> 'how'(skill) vs 'that' (acquiring information)	Cx
91	Culture>humanities-science snobbish exclusivity	CR
94	Proposition=its meaning:the method of its verification	Co
	Nitecki	
2	Concept=notion of intelligibility (conceptualism)	Co
5	Reality=as it appears to individual (metalibrarianship)	Co
8	LIS conceptual level>based on reality of rational ideas	Cx
25	Reality > its qualitative properties are apparent	Cx
36	Reality = as category of mind & base for conceptualism	Co
41	Knowledge=survival of the wisest updates Darwin's law	Co
47	Education goal= developing thinking for its own sake	Co
47	LIS goal=interrelating intellectual & practical needs	Co
59	Knowledge & knowledgeability>contextual aspects	Cx
62	Knowledge=continuum of whole-part relations	Co
63	Reading=a process of learning & thinking	Co
67	Systems,General Theory=a general science of 'wholeness'	Co
67	LIS>General Systems metaphysical & empirical component	Cx
73	LIS=metascience & metaphorical structure,order,form	Co

74	LIS >physical & conceptual reality & isomorphism	Cx
74	LIS>isomorphism of physical & conceptual realities	Cx
82	LIS selection^means to improve the flow of good books	Pd
83	LIS philosophy=conceptual,contextual,procedural levels	Co
83	LIS philosophy=metaphysical structure of postulates	Co
83	Ethics >based on Root Metaphor Theory of Metaphysics	Cx
83	LIS philosophy>metalibrarianship & World hypotheses	Cx
83	LIS>Pepper's model	Cx
83	LIS theoryCxmetaphysical model	Cx
84	Contextualims,(metalibrary>operative knowledge,know-how	Co
84	LIS information retrieval>based on cognitive structure	Cx
86	Model>3-fold interpretation & metalibrary dimensions	Cx
88	Methodology>mind & matter not the same logical types	Cx
90	Thought=verbal,non-verbal,covert or overt behavior	Co
	Shera	
8	Alphabet^fear of invention	CR
8	Science>of mutually exclusive classification	Cx
8	Method>dialectics in study of principles	Cx
8	Education,Republic<as an argument for democracy	Pd
9	Classification of knowledge^based on hierarchy	CR
9	Education>Aristotelean & Platonic tradition	Cx
13	Knowledge>doing vs hypothesis	Cx
16	Reading makes a full man>limitations	CR
16	Reading^criticized as library principle	CR
16	Knowledge classification>tripartite division	Cx
16	Information retrieval>and Bacon's sensory perception	Cx
18	Thinking > as a base for generalizations & reason	Cx
19	Knowledge >descriptive vs philosophical	Cx
20	Librarians > search for fragmented truth	Cx
20	Education > criticized for low level	Cx
22	Librarians= principles & duties	Co
23	Ideas > as products of sensation	Cx
24	Hypothesis = method of discovery	Co
24	Scientists> dependence on recorded knowledge	Cx
26	LIS > modern university is a library of books	Cx
30	LIS goal^ of greatest good impossible mathematically	CR
31	Education = forum for discussions about philosophies	Co
36	Classification = as metaphysical synthesis	Co
37	Library,university mission = service to society	Co
37	Classification > based on Baconian system	Cx
38	Knowledge = pure,rational & applied,empirical	Co
38	Knowledge = understanding & reason	Co
40	Knowledge = anti-metaphysical study of nature	Co
40	Knowledge=decreased generality & increased complexity	Co
41	Knowledge of oneself> and one's place in universe	Cx
41	Research > based on analysis & synthesis	Cx
41	Classification of species> impact on LIS classification	Cx
45	Education>argument for liberal, professional approach	Cx
45	Knowledge>professional & directed by professionals	Cx
47	Thinking =as reconstruction of content of experience	Co

47	Education > based on continuing learning	Cx
52	LIS >defense of freedom must be organized	Cx
52	Philosophy>obedience to facts & hospitality to change	Cx
52	Classification>based on properties,not aspects of thing	Cx
54	Communication>symbolic interactionism vs Systems theory	Cx
59	Language,symbolic=algebraic manipulation of ideas	Co
59	Knowledge>language as its symbolic structure	Cx
60	Knowledge>bifurcated into abstract & concrete	Cx
60	Science> dependence on its predecessors	Cx
60	Knowing processes<mediate between idealism & realism	Pd
62	Education=practice,theory,technology & intellect	Co
62	Education,librarians>need for philosophical course	Cx
62	Science>no permanence or ultimate truth	Cx
63	Education=learning by discovery,experience & technical	Co
63	Communication>never perfect,no passive reading	Cx
71	Knowledge acquisition>through mind's innate properties	Cx
73	LIS education>humanistic,vocational & metascientific	Cx
73	Law of instrument> same as 'medium is the message'	Cx
80	Language=plurisituational compound signs	Co
82	LIS mission='setting to rights' book's function	Co
84	Knowledge<concept manipulation-varied classification	Pd
85	Epistemology>context of intellectual processes	Cx
85	LIS>too much theory leads to empty formalism	Cx
85	Truth vs sophistry>interpretation of the message	Cx
85	Knowledge<process of cognition is largely unknown	Pd
86	Knowledge=epistemology of knowledge about knowledge	Cx
86	Knowledge,scientific>growth,accumulation,transmission	Cx
86	Truth>can never be attained or substituted	Cx
	Wright	
1	Change=nothing is,only change is real	Co
3	Materialism=concept of atomic matter	Co
4	Rationalism=permanence of being,only change is real	Co
6	Reality>physical & formal combined in atomic matter	Cx
7	'Know thyself'=antropocentric interpretation of life	Co
7	Books & written words^Socratic opposition	CR
7	Humanism>philosophy introduced by Socrates	Cx
7	Reality>competition between physical & formal views	Cx
8	Language=is form not substance	Co
8	Ideas>objective & subjective aspects of immaterialism	Cx
9	Dualism,ontological>combining form & materialism	Cx
9	Dualism>form in matter vs form & matter	Cx
16	LIS philosophy^substance vs its instruments	CR
28	LIS>and science of society (social vs physical reality)	Cx
30	Knowledge^instrumental vs metaphysical ideas criticized	CR
48	LIS philosophy ^ laws of society vs natural laws	CR
52	Philosophy of James-criticized as anti-intellectual	CR
54	Symbolic interactionism=empirical & ideative order	Co
62	Information-criticism of scientific approach	CR
67	LIS-symbols transfer vs systems empiricism	CR
67	Systems-theory vs symbolic interactionism	CR

73	Librarianship= defined as a metascience	Co
73	LIS>Focus on noetic form of mind itself	Cx
73	Information=formal abstraction & physical manifestation	Co
73	Ideas>metaphysical nature vs physical manifestation	Cx
73	Librarians>telus(idealists) vs mechus type(scientists)	Cx
73	Librarians humanism>based on interest in human issues	Cx
86	LIS philosophy=recorded knowledge & its interpretation	Co
86	Dualism>transcendent by 3rd World of forms & ideas	Cx

APPX-5F: Summary of Key Words Used by Selected Librarians

Key word	Librarians F	M	N	S	W	Sub Total	Others	Grand Total
Librray Information Science (LIS)	1		13	6	6	26	89	115
Knowledge		11	1	17	1	30	19	49
Library				3	3	6	37	43
Information	1			1	2	4	23	27
Communication				2		2	15	17
Model			1			1	16	17
Philosophy				1	1	2	15	17
Science		6		3		9	8	17
Education			1	9		10	6	16
Reality	1		3		2	6	9	15
Methods			1	1		2	11	13
Classification	1			5		6	4	10
Ethics			1			1	9	10
Form							10	10
Totals	4	17	21	48	15	105	271	376

NOTES:
F: Foskett
M: Machlup
N: Nitecki
S: Shera
W: Wright

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