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Proceedings of the 7th ASIS SIG/CR Classification Research Workshop

Library of Congress Classification: Does Organization of Knowledge Need a Shelf?

Jolande E. Goldberg
Library of Congress
Washington, DC 20540

Abstract

In the literature on cataloging and classification, the Library of Congress Classification (LCC) has been described as a generally acceptable *library shelving device* and *shelf browsing mechanism* for American libraries, based on LC literary warrant. Indeed, from its inception, the various classifiers never claimed that they developed LCC as a scientific system but rather as an utilitarian tool for reclassing and servicing large existing LC collections. Likewise, its critics rarely ever provided a discourse on the fact that it is a knowledge-based logical system, in which the records of a literate culture are organized: the various manifestations of recognized knowledge fields, corresponding to their scientific framework at a given point in history. Since development of the last LC Class K (Law), classification has no longer been tied to the mandate of providing for retrospective conversion of existing LC holdings, and other classificatory techniques could be explored that advanced yet a more coherent concept classification. By freeing the electronic LCC from older policies and the constraints of providing for stable shelf arrangements for American libraries at large, its potential as a unique retrieval tool (browsing the virtual shelf) as well as a trans-class navigation tool for electronically-stored bibliographic information can be realized.

A. Some Historic Notes

The LCC should be contemplated in the context of politico/historical and intellectual developments in the country, because it will explain what has been written and, on the other hand, what has been collected and how collections have been organized and accessed.

1. LC Collections and Organization 1801-1861

In the United States, the first growth period of LC collections coincided with the periods of political history and historiography from ca. 1800 on, culminating with the introduction of a new general catalog in 1861.

After the war for colonial independence, historical accounts show the colonies' progression from colonial independence to a nation. For that, one needed a common politico/legal system, but mostly the creation of a common heritage, a common national history which subordinated the role

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of the individual colony or state to the story of the nation: recording and explaining the past of the country as a whole.[1]

The years of the mid 19th century, dominated by the popular historians and the *Romantic Nationalist*, were particularly interesting for the type of collections then forming at LC; writing was guided by the desire to see the U.S. acquire "American character", to teach patriotism, and to educate. During this period, one encountered the steadily rising number of local historical societies, including those in the new frontier territories which provided the historiographer with collections of personal papers, accounts of lawyers, business men, pioneer settlers, colonial offices, etc., and treatises on American institutions, including the frontier. Collections that were building included government documents, treaties, laws, and legislative journals, official/diplomatic correspondence[2] - all "Sources of history to its truth".

Various accounts such as annual reports, memoranda, and laws illuminated what was collected; critics of the collections exhorted that they were quite narrow in scope. From 1808 on, collecting had concentrated mostly on laws and Congressional papers; in 1815, Jefferson's collection was acquired; in 1817, LC received its first copyright deposits; in 1837, the Joint Library Committee supported international exchange of public documents. And in 1836, the Secretary of War (in an address to the American Historical Society) advocated expansion of LC collections to all subjects of human learning "...to elevate it to an equality with those great repositories of knowledge which are among the proudest ornaments of modern Europe".[3]

The organization of the early, rudimentary collection was very simple. Before its move to Washington in 1800, Congress had used the collection of the Library Company of Philadelphia. In Washington, a catalogue for its library of 900 plus works was issued in 1802 (subarranged by size), followed in 1808 by the third catalogue which, besides size, introduced for the first time *forms* as plans, state laws, journals of the House, House reports, executive papers, and gazettes. By 1812, the first *classed* catalogue was issued for the growing collections, the first subject approach, following the catalogue of the Library Company of Philadelphia. The 31 subject classes of the Philadelphia scheme, modelled after Francis Bacon's *System of Knowledge Classification* , 1605 (modified by Jean le Rond d'Alambert, 1751),[4] were reduced to 18 subject classes by the congressional Library, before its application to its 3,076 volume holdings.[5]

With acquisition of Thomas Jefferson's collection in 1815, his classification scheme was introduced at the Library. Jefferson's classification was still in use in 1861, when a new general catalogue was issued for the collection, now totaling some 79,214 volumes. Although the classification was steadily expanded to accommodate the fast growing collections, its division of knowledge into the three principal classes, *history, philosophy and fine arts (poesy)*, was

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preserved until implementation of the LCC. As expansion by new topics within these classes occured, the numbering system gradually changed from *book numbering* to *shelf numbering*, e.g.:

Early Numbers

4/27 = Chapter 4: American History, *Book No.* 27

Expanded Numbers

4/27a = Chapter 4: American History, *Book No.* 27a

(a = added collection of Massachusetts Historical Society)

Last Revision

15/9456 = Chapter 15: Technology, *Shelf No.* 9456

(= shelf reserved for books on Inter-Oceanic Canals)

2. Expanding Collections and Organization. The LCC, to 1949

The second period of LC's collection development sees major changes in treatment of the subject *History*, which would eventually deeply impact LC's classificatory policies: (a) in the U.S., history writing changed to*critical*/ historical exploration (ca. 1866-1884), in particular establishing after the Civil War the national past as the basis for the reunion (which in turn became the justification for the Civil War); (b) from Germany, the *scientific* (seminar) method of study and writing of history was brought back to the U.S. around 1884 by scholars trained in German seminars, where government and international law formed part of the history curriculum. This so-called new historical movement viewed history as a study and record of social evolution. The best of these scholars, viewing themselves as political scientists, would establish Departments of History and Political Science at American Universities. It is interesting to observe that the American Social Science Association lent its authority to the foundation of a new organization: the American Historical Association.[6]

The expansion of the LC collections in this period was based on congressional requests for deposit of all documents by the States' governors (1866), the formalized exchange of foreign government documents (1867-1875), establishment of major collections (to 1890) either by congressional appropriation or by bequest and gift, among them the Chinese, Turkish, Lincolniana and Rochambeau collections, and purchase in Europe of document collections relating to the Treaty of Paris (of 1783).[7]

These accounts should be seen against the general politico/cultural background of the second half of the 19th century, the citizens' century: Humboldt's declaration of Freedom of Study and Teaching in Germany, underpinned by major achievements in the arts and sciences, and archeological endeavors of the German and the English in the Middle East, deepening the interest in antique/Hellenic studies and Roman law. A critical factor was the wealth - paired with the German *Bildungsideal* - of the new industrial upper-middle classes, which were to lay the

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foundation for public collections, mostly museums and libraries, as well as botanical and zoological gardens, open to all citizens. This was the time when the best of America's industrial upperclass had their agents for buying and acquisitioning in Europe: the DuPonts, Frick, Vanderbilt, Morgan, and the Pittsburghers, competing with the Continent. Most importantly, LC also had its permanent purchase agent in Europe.[8] And in 1892, the President approved a Congressional resolution to finally open the Library of Congress to the public.

It was around this time that the Library of Congress - with collections up to the one million mark - had undergone a major reorganization into several departments. Herbert Putnam (Boston Public Library) and Melvil Dewey (New York State Library), on behalf of the American Library Association, testified before the Joint Library Committee emphasizing the need for a new classification system for LC. In 1897, as the new Library of Congress building was ready for occupancy, Charles Martel, new Superintendent of the Catalogue Department, together with the previous Superintendent J.C. Hanson, began to explore available schemes in preparation for the intended reclassification. In 1898, during these preparations, Librarian Young proclaimed LC's mission: to collect "...whatever illustrates American History...varied forms of American Growth, Theology, Superstition, Commonwealth, Building, Jurisprudence, Peace and War...." His successor, Herbert Putnam, appointed in 1899, focused on the development of the collections and of a new classification, since, according to his first statement to Congress, he found the classification to be meager, rigid and inelastic, and the collections defective.[9]

During the search for a modern system that would provide a logical arrangement of the collections, the Dewey Decimal Classification was ruled out, since Dewey was not willing to make requested changes to accommodate LC's needs. The classification Schema of the University of Halle (Germany) was also ruled out because it seemed too strongly oriented on traditional German philosophical thought.

Charles Ami Cutter's Expansive Classification was selected as the prototype, although with significant modifications in the notation structure.[10] Analysis of the Cutter classification shows that Cutter's main classes bear no resemblance to Bacon's or d'Alambert's systems, nor to the Jeffersonian outline, all European in their comprehension and division of knowledge. Cutter already had separated Science, Mathematics (Pythagoras, Heraklit, Anaximander, etc.), and the Law (Jus naturae et gentium) from Philosophy. LC adaptations (up to 1904) went beyond that: Class A (Philosophy and Religion) was broken up and, by introducing double letters, Subclasses B-BJ for Philosophy and Subclasses BL-BX for Religion and Theology were created.

Classes J-JX in the early version of the LCC are already the Classes for Political Science. Class K (Law), though initially proposed as a distinct Class, was incorporated as a section in Class H, then Social Science. This was a troubling approach for later developments.

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Because of its importance for the coming massive reclassification, Class Z (Bibliography and Library Science, 1898) was the first Class to be designed. However, first to be published (1901) were the Classes for the most extensive collections, History Classes E-F (History and Geography of the United States), followed by the draft of Class D (History of the Old World). Political Science Classes J to JX, in company of Naval and Military science (V and U) and some other Classes, were published in 1910. This shows clearly two things: (1) Putnam's own vision of LC as "a bureau of information for Americana...",[11] which aligns with the philosophy (American orientation) of his predecessor, and (2) the prevailing philosophical comprehension of the times in which history is treated as an all-inclusive field in subject matters, because historical studies have, in fact, provided answers to contemporary needs, closely tracking political, social, and economic developments. Thus, Classes E-F included:

* boundary questions and treaties, both relating to the narrower subject of a State's territory and sovereignty;
* the recorded manifestations of U.S. westward expansion and territorial dominance over the Indian territories;
* works dealing with war and peace and the peace treaties as well;
* a whole regional development leading eventually to the formation of the OAS, a subject belonging by definition to International law; and
* geography.

Legal history was never recognized as a discipline *per se* but formed part of general history. Therefore, eminent historic-legal sources were classed in Class D.

Classes J-JX (Political Science) had absorbed official gazettes (a primary source of the law), legislative papers, and texts of constitutions of the world together with constitutional history. In accord with the understanding of the time, international law was welded together with international relations, instructing the cataloger, in case of doubt, to prefer Classes D-F.

The History Classes also showed the encyclopedic character of the LCC from the beginning. To round out the schedules with information for the user, detailed encyclopedic notes introduced and illuminated each major chapter. This practice was retained for the 2nd edition (1913). By 1958 (3rd edition), all these notes were removed.

B. Construction of the LCC

Evaluation of the new classification proves that, despite various interpretations of statements uttered by library officials, LCC was, from its inception, a composite system: by design organization of a knowledge field, and library organization by application to the shelf. Much later

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in the century, during the Law classification debate in 1964, Richard S. Angel, Chief of the Subject Cataloging Division, clearly distinguished between LCC as a:

> "complete system, embracing all areas of human knowledge, the various components of this universe of knowledge having been allocated to the various schedules corresponding to well-defined areas and concepts by which the separate fields are tought and expounded, and on which developmental research is based", versus the provision of an "orderly arrangement of volumes which makes access to the collections useful and meaningful to qualified students, scholars, and staff."[12]

This merely restated an observation made at the beginning of Class K development by F.H.Wagman (Director of the LC Processing Department) at the 1949 Annual Convention of the American Association of Law Libraries, that "...the Library of Congress must maintain an encyclopedic classification of knowledge...." [13]

1. Philosophical Orientation

Although the orientation of policies dealing with collection building, organization, and accessing has changed many times since, mostly by adapting to scientific, philosophico/cultiural or political developments (natinal or global), LCC can still be viewed, in concept and principles, as an encyclopedic classification for the Universe of Knowledge in Classes A-Z.

Translated into classificatory structure, this means that the schedules are designed systematic-hierarchic in the order of concepts or textual elaborations of a knowledge field or topic.
The following principles have been greatly standardized during the development of Class K since 1950 and in the recent conversion of LCC to the electronic format:

* concepts, facts or phenomena are arranged from the most general and broadest to the most specific and refined term or definition in descending order, a logical, deductive method grounded in late 18th century European philosophy;[14]
* they are expressing their relationship to each other in the hierarchy by indention;
* hierarchies are carried through form divisions, uniformly applied to topics; and
* the detailed enumeration of concepts and definitions is condensed into captions in field typical language.

The more advanced or experienced the expected user is thought to be, the more detail is commanded by the index.[15]

2. The Notation Structure

The adopted alphanumeric notation system for the LCC is a composite system utilizing letters and arabic numerals. Main classes are denoted by a single or double capital letter; for Classes D

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and K, triple letters also denote subclasses. Within each main Class or Subclass, the integral numbers 1-9999 are used for subject division, with generous amount of free numbers for future expansion. In its alpha-numeric design, the notation still bears some resemblance to the 19th century shelf number. The *Class number* assigned to each caption is the numeric expression (code) of a concept, phenomenon, or fact defined by natural language or subject-typical terminology in the caption, i.e., it is coded information denoting the order of subjects in the schedule. It was originally decided not to use decimal numbers, however, decimal extensions of integral numbers were later introduced for new subjects.

The addition of a work-specific Cutter number for the book in hand (the *book Cutter*) on a subject outlined in the schedule extends the systematic Class number to the *Call number* (or shelf locater). After the first set of letters and numbers, the second set, the Cutter numbers, preceded by a period, follows : (a) for the form subdivision, or (b) for identification of a specific work. Only the integral numbers and topical or geographic subject subarrangements expressed by Cutter numbers are represented in the text of the schedule, while form divisions (expressed either by full, decimal or Cutter numbers) are usually appended tables. For example, the Class number for the Rules of procedure of the European Parliament is as follows:

Class number	KJE	[=Community Law]
	5390	[=integral number for European Parliament]
	.A18	[=Form Division IX for Rules of procedure]
Book number	.E97	[=Main entry]

All components together form the Call number.

Extensive referencing from the *systematic* location of fact, event, or topic to the actual location was introduced and widely applied since implementation of the LCC .

3. Attributed Functions of the LCC

The most conventional function of the LCC - and traditionally perceived as its primary purpose - is to aid library technical services in cataloging or reclasification, thus serving as the intellectual basis for construction of the classed catalog or of the shelflist, with its own premier function as record of books as they are arranged on the shelf in order of classification. The latter, from the beginning a troubling aspect, has become a real challenge in the light of ever broadening cooperation in the library community at large. Although LC never encouraged the use of the LCC by other libraries, and despite repeated statements by Library officials that the LCC is intended as a utalitarian classification of objects based on LC literary warrant (in particular, by Herbert Putnam at the inception stage of the LCC andby Luther Evans during the planning stage of Class K), LC could not prevent that the LCC has in fact become the preferred classification for libraries and educational institutions in the U.S. and for a great many institutions abroad.

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A lesser known fact is that at LC classification has all along been the policy framework for scientific collection development. The incremental implementation of the LCC throughout its development meant implementation of a complex set of policies that inherently:

* govern development and maintenance of collections and bibliographic data (on both the physical and the virtual shelf) at LC and at all other libraries adopting the LCC; and
* set the demarcation line from one Class to the other.

Within a Class, policies outline provinces and governance for all Subclasses.

A collection policy statement issued in 1995 by the Collection Development Office,[16] in this case dealing with Philosophy (Classes B-BJ, and Z), clearly directs that collection building should be based on the existing Classification schedule:

> " ...The collections policy...is closely linked to the treatment of Philosophy in the Library's classification scheme, which incorporates a traditional Western framework of categorizations and distinctions."

It is interesting to observe how the European orientation of the original collection and its early classification is now adjusted, when the policy statement continues:

> "...the great works of philosophical significance in non-Western societies are often in forms unlike traditional Western monographs and treatises....Recommending officers are encouraged to allow a wide latitude of relevance in seeking non-Western works of philosophical significance."

The following acquisitioning mandate is less circuitus:

> "The Library shall acquire all of the important current reference works ... as outlined in the Library of Congress Classification (Class B)."

C . Final Stage of Library of Congress Classification Development.

Under Librarian Luther H. Evans, collection and selection policies focused on post World War II Europe. His "Mission in Europe", aimed at obtaining "multiple copies of European publications for the war period" for distribution to American libraries and research institutions,[17] accounted for an unprecedented expansion of LC's collection due to the massive inflow of foreign, predominantly legal materials between 1945 and 1949. Of special importance were German laws and all related materials for the study of Germany's past role in the European theater, now the Territory under Allied Occupation. This would finally lead to development of the last component Class of the LCC: Class K (Law), which - although listed as a Class in the final outline of the LCC - had never been developed. Instead, many of the component Classes of the LCC completed by 1948 had absorbed legal materials that would have been expected to serve as the basis for Class K. Law was considered a *congeries of aspects* of other disciplines and not a discipline in itself; in fact,

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it had become a *form of other subjects* (in particular Classes H and J).[18] This and several other factors would distinguish the last component of the LCC from earlier developed Classes and made for the need of new strategies. In particular, a definition was needed of what constitutes *law materials*.

1. Policies and Principles for Law Classification Development

In 1949, during the Annual Convention of the American Associaton of Law Libraries (AALL), the guiding principles for Classification of Law were worked out, later to be published as the *Interim Report of June 10,* which has remained the governing document for the development of Class K, accompanied by an outline of the entire Class.[19] The report defined for the first time the types and categories of what constitutes *law materials* and has since set the demarcation line, retrospectively and forward, between Class K and other Classes. In design issues, opinions were greatly divided: (1) should the schedule be based on the actual library holdings; or (2) should it be developed on a strictly theoretical basis? The latter was then ruled out by the Library's Committee on Development of Class K, since the Library had considerable experience in classifying existing collections. (3) Would LC then ever make a commitment to reclassify its legal materials? The development of the first Class, Class KF (Law of the United States), eventually published in 1968, was caught up in this point-counterpoint argument for 20 years, both outside and inside LC.

The resulting shift in development patterns was due to a major change in classification policy. The planned creation of a *virtual* law collection on which the development of Class K would be based - i.e., a law shelflist consisting of bibliographic data, extracted from the shelflist of Classes A-Z for the older materials buried in such Classes, and combining them with more recent records already designated as LAW for reclassification - was abandoned as "dragnet operation". Consequently, the building of a *physical* law collection by deselecting or separating materials from existing collections A to Z into which they were absorbed never materialized. Thus, for the first time in LC's classification history, *reclassification* or retrospective conversion of a collection at implementation of its newly created schedule was up-front ruled out. This provided the opportunity to design the new Class K, not tied to existing collections, custodial or other preferences, as an ideal-conceptual organization for the large and diverse body of knowledge called LAW, with a set of principles and policies unique to it:

(1) Highest in the hierarchical order as governing principle for the structure of Class K was the *jurisdictionality* policy, which would provide the outline for all its Subclasses. It was recognized that the differences in legal systems, nomenclature, public policies and intellectual tradition from one jurisdicition to another would not allow for superimposing of concepts and nomenclature valid only for one jurisdiction onto another. Thus, arrangement by jurisdiction takes

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precedence over other criteria such as subject. Jurisdiction, therefore, is the principal element of hierarchy.[20]

(2) Already with the first group of Classes for the Common law countries, classificatory technique had resorted to *model schedule* development (the first schedule, Class KF (Law of the United States) was the model for the other common law schedules and tables), however, only in approximate, broad use of patterns without a common number base, and *not strictly symmetric.* With creation of the model for Civil law jurisdictions, Class KK-KKC (Law of Germany), the derivation technique was introduced, with the use of one schedule as the number, pattern, and, as far as possible, terminology pool for creation of a related Class, KKA (Socialist Law of East Germany).[21] To achieve that result, comparative study would determine common principles underlying both systems; thus, harmonized/analogous class detail, based on the legal doctrine shared by both jurisdictions, could be created, as a simple example from the constitutional law section may demonstrate:

KK	Constitutional Law	KKA	Constitutional Law
5049	Separation of powers	5049	Centralization of powers
	Organs of Federal government		Central government and its organs
	Legislature		Legislative power
5318	Bundestag (Federal diet)	5318	Volkskammer (Peoples delegates)
5392	Bundesprasident (Fed. Pres.)	5392	Staatsrat (State Council). Collective head

(3) Next, the *regionalism principle* evolved in response to further restrictions in development of the Class, since not all jurisdictions could be accommodated with their own classification. Thus, another formula had to be invented to create some organization for the rapidly growing foreign law collections.

Customarily, a region has been defined (geographically) as an area in which historical, religious, and socio-economic or ethnic similarities, as reflected in laws in the area, are commonly shared; and where cultural, scientific, and economic interests have led to regional integration and organization. In both cases, further refined model schedules and symmetric uniform tables, applicable to the largest number of jurisdictions in that region, were the product of comparative pattern and concept analysis:

K: Law	[Main Class]
KJ: Law of Europe	[Subclass Region Europe]
KJV: Law of France	[Subclass Jurisdiction in Europe]
1-9999 General to specific topics (systematic hierarchy: expressed by indentions)	

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This principle had been adopted for the first time during development of the Classes KJ-KKZ (Law of Europe)[22] and applied since to all regions of the world (Europe, Asia, Africa, Pacifica). Harmonization and approximation technique was applied to develop a jurisdictional schedule for regional organizations as well. The first schedule was designed for the European community and was further refined for the Antarctic Regime and other international organizations such as the UN, OAS, ASEAN, to name only a few. Most of these had until recently not been classed at all or had received only marginal treatment due to the lack of prescribed classification.[23] By these methods, second and third generations of schedules or tables could be derived from one model.

2. Perimeter of Classes. Adjustments. Revisions

Implementation of the vast Class K, in sections over the past 50 years, has demonstrated that classification is the conceptual structure and complex policy framework for development and maintenance of large collections. Law classification, traditionally part of social sciences, is now delineated through its own Subclasses and has set demarcations to neighboring Classes H (Social Science) and J (Political Science).

However, it is in the overlap areas - the grey zones of classification - that policies emerge as a consequence of periodic major changes as new knowledge fields emerge or established ones mature; such occurences have been handled not only by numeric expansion in a particular classification, e.g., by date, as in the following example:

KJE 4444.31951 (= KJE 4444.3[date])
.A2
1994
[Eu Organization Law. Treaty of Paris 1951. Unannotated edition. Published 1994]

but also by refinement of the scope of a Class, and by major shifts of topics from one Subclass into another (cancellation or bracketing of blocks of numbers and extensive re-developments in the preferred Class or section). [Figure 1]

All such operations, although regularly communicated to the outside through various media, have also prompted LC regularly to caution: that adopting libraries must sufficiently understand those aspects of the LCC itself, its development, revisions and application.[24] It was in particular the large, well organized and vocal law library community which consistently pressed for strict adhearance to form and arrangement by LC because of faculty preferences for open stacks and systematic arranged shelves, particularly in large law libraries. Voiced concerns for stability of

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shelf arrangements[25] by classification has up to now markedly inhibited the inventive revisions of the classification schedule. In the wake of massive reclassification projects by major law libraries, adopting for their collections LCC Law (Class K), and by LC's own efforts to bring the older schedules up to current knowledge standards in preparation for implementation of the electronic classification format, the "shelf" has been revisited as a real issue.

D. The Electronic Version of the LCC

Recently, several factors have made new in-depth study of the LCC necessary and, indeed, have lead to a better understanding of this system:

* development of the USMARC format for classification;
* conversion of the LCC to the electronic online format;
* linkage of classification with other electronic authority files, in particular the Subject heading list (LCSH), which had grown independently from classification;
* search for intellectual and technical solutions for constructing the electronic integrated index for Classes A-Z, and the breaking out of the index of an individual Class;
* the need for standardization of indexing procedures;
* standardization or elimination of form division tables, or incorporation of such tables into the text of the schedules;
* removal of Cutter subarrangements from the text of the schedules; and
* identification and harmonization of commonly underlying patterns in related schedules or groups of schedules during revision, preparation for conversinon to the online format, or reclassification.

1. Most important during the conversion of LCC to the electronic format was the evaluation of existing or projected classificatory strategies, such as model creation for common divisions (form, geographic, or period) and concept/subject divisions, based on experience gained by the recent development of the newer K Classes and their conversion to the online format. Pattern adjustments, realignment of hierarchies and the harmonization of old and new or parallel patterns to achieve pattern conformity, the standardization and updating of terminology, and generous introduction of LC subject headings into the captions are particularly critical for the index since successful searches and retrieval will rely on the quality of the subject data supplied by the schedules. Generally, most of these operations do not effect number structures of older existing collections. [Figure 2]

2. More complex were the operations in restructuring or recovering of the old Class JX, which will finally correct classification practices rooted in the ideological perception of the history complex and policies dating back to 1901. The two new Classes: KZ (Law of Nations) and JZ

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(International Relations) will - upon implementation at LC - substitute for the Class JX (International Law. Foreign Relations. Diplomacy), the last Subclass of J (Political Science). Class JX, first implemented in 1910, has not been kept in compliance with current events and has been laid bare of many pertinent subjects that have since been incorporated in the history Classes D-F due to old instructions that were never reviewed.

To finalize the design of the new Classes, cross-class research techniques have been applied which allow for:

(a) comparative classification and approximation either of two Classes (J and K) or of particular subject fields (subdivisions) in related Classes;

(b) parallel arrangement of approximate patterns; and to some degree complete parallel developments [Figure 3]; and

(c) blocks of information allowed to be navigated into the hierarchy of different classes

* in the same order; [Figure 4]
* under harmonized terminology *if similar in concept*; [Figure 5] and
* under identical integral number, but distinct by Class.

Such comparative working techniques, as analytical exegesis, approximation, harmonization, analogous interpretation, and synthetic construction (guided by references to parallel hierarchies), freely borrowed from legal scientists, were kindred methods adopted for the development of the entire Class K, including the recent twin Class KZ/JZ.

The two Classes are devised in subject arrangement and number structure so as to compliment each other, allowing for discretionary placement of works, especially document collections, in either Class depending on an individual library's point of emphasis or collection policy. [Figure 6]

3. While all the described operations can be, and are, managed in the conventional way, the interactive electronic system will:

(a) enhance the quality, speed and cost-effectiveness of the described tasks in maintenance, revision or restructuring classifications by navigating blocks of information (here: concepts or topics) either within a Class or cross-classes.

(b) The same functionality [Figures 3 and 4] has been envisioned by research libraries as a tool for customizing classification schedules by cross-class information integration. In fact, this particular feature of the online format can create the *virtual* library to facilitate research by retrieving and merging subjects and phenomena, similar or related by concept but distinct by Class. A permanent classification data merger, on the other hand, would need to concern the physical collection. Possibly, one would then heve to resort to duplicate call numbers, one for the shelf and one for the systematic position of topic or concept. In fact, this was frequently practiced at LC

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from very early on, although mostly for custodial reasons (one number was assigned for actual shelf location).

(c) Reclassification of the JX collection to JZ and KZ will probably be the solution for the first real reclasification in the field of law at LC. Since it is not envisioned to relable and move the old and very large collection, the old JX numbers will remain on the bibliographic record and will serve as a concordance (shelf locators). After the old number has been linked with the systematic (duplicate) class number, data can be searched systematically.

(d) To realize the fullest potential of the electronic LCC as data retrieval tool, the last and most important piece is still missing at LC: the online shelflist. This enormous project, including linkage of the LCC to all authority files, is currently in the research stage.

Conclusion

Ultimately, all efforts will have to concentrate on the envisioned function of the electronic LCC as an online retrieval tool. For online browsing and navigation of electronically stored information, including the segregation of whole portions of one Class and transfer to another, a knowledge-based, field-specific structure of the classification is of utmost importance. So, also, is the separation from the shelving function.

Notes

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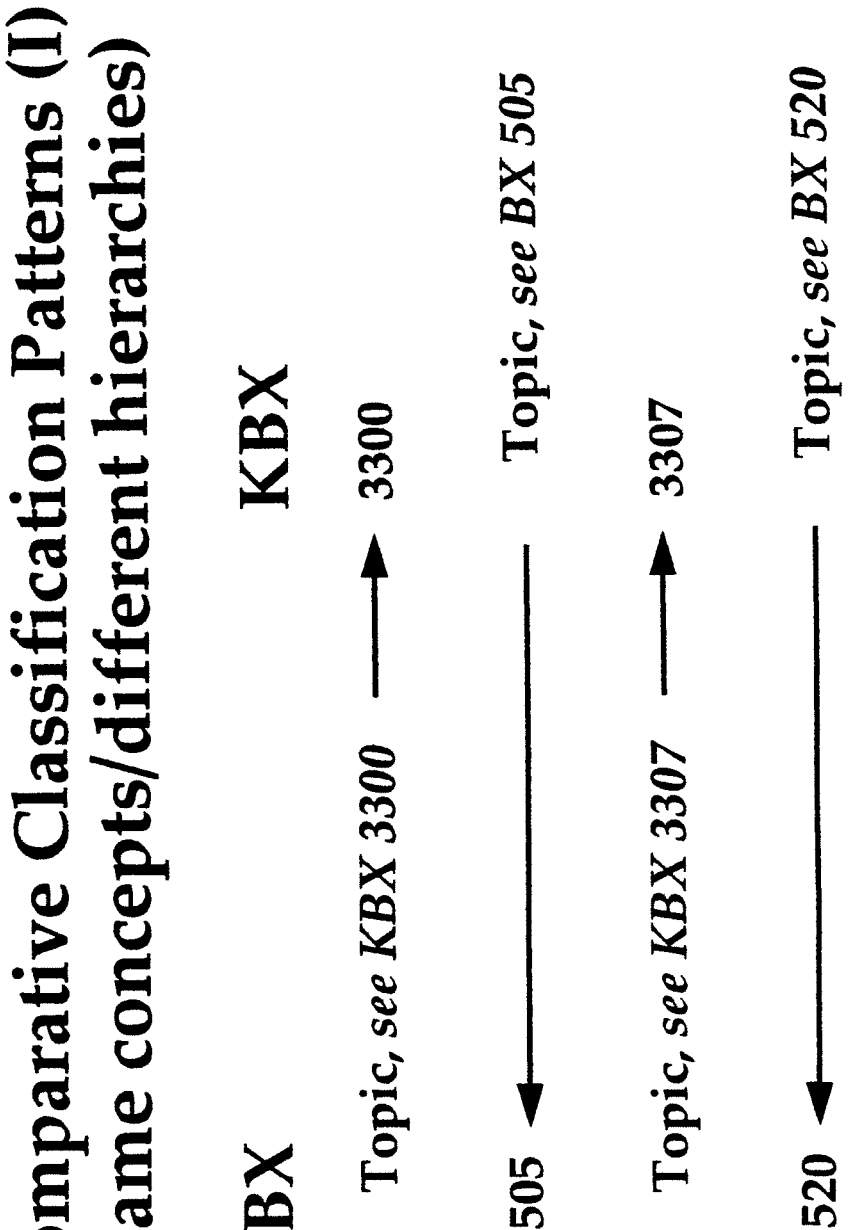

Figure 1

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Figure 2

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Comparative Classification Patterns (II)

Figure 3

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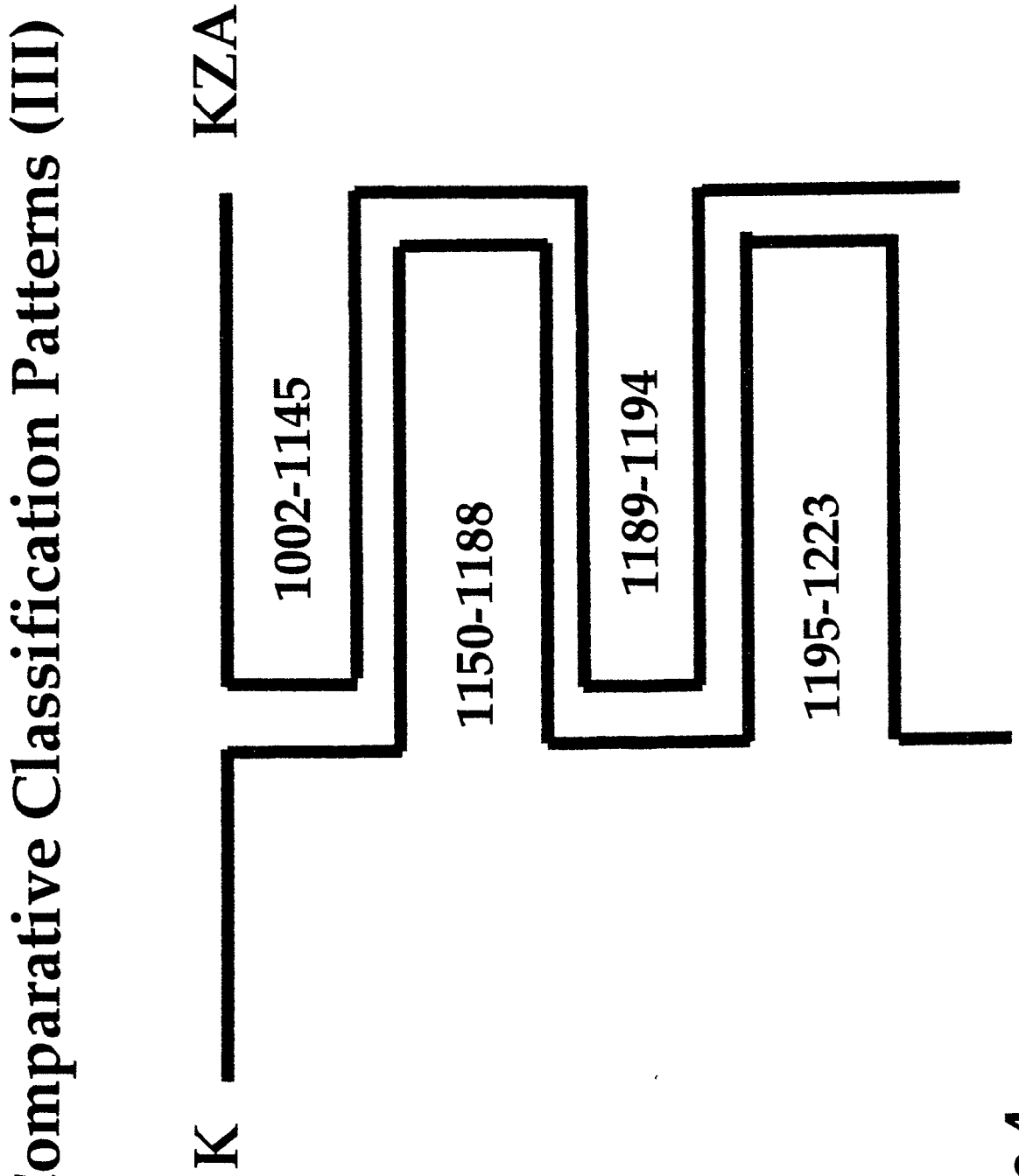

Figure 4

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Goldberg, J. (1996). Library of Congress Classification:· Does Organization of Knowledge Need a Shelf?. 7th ASIS SIG/CR Classification Research Workshop, 49-70. doi:10.7152/acro.v7i1.12689

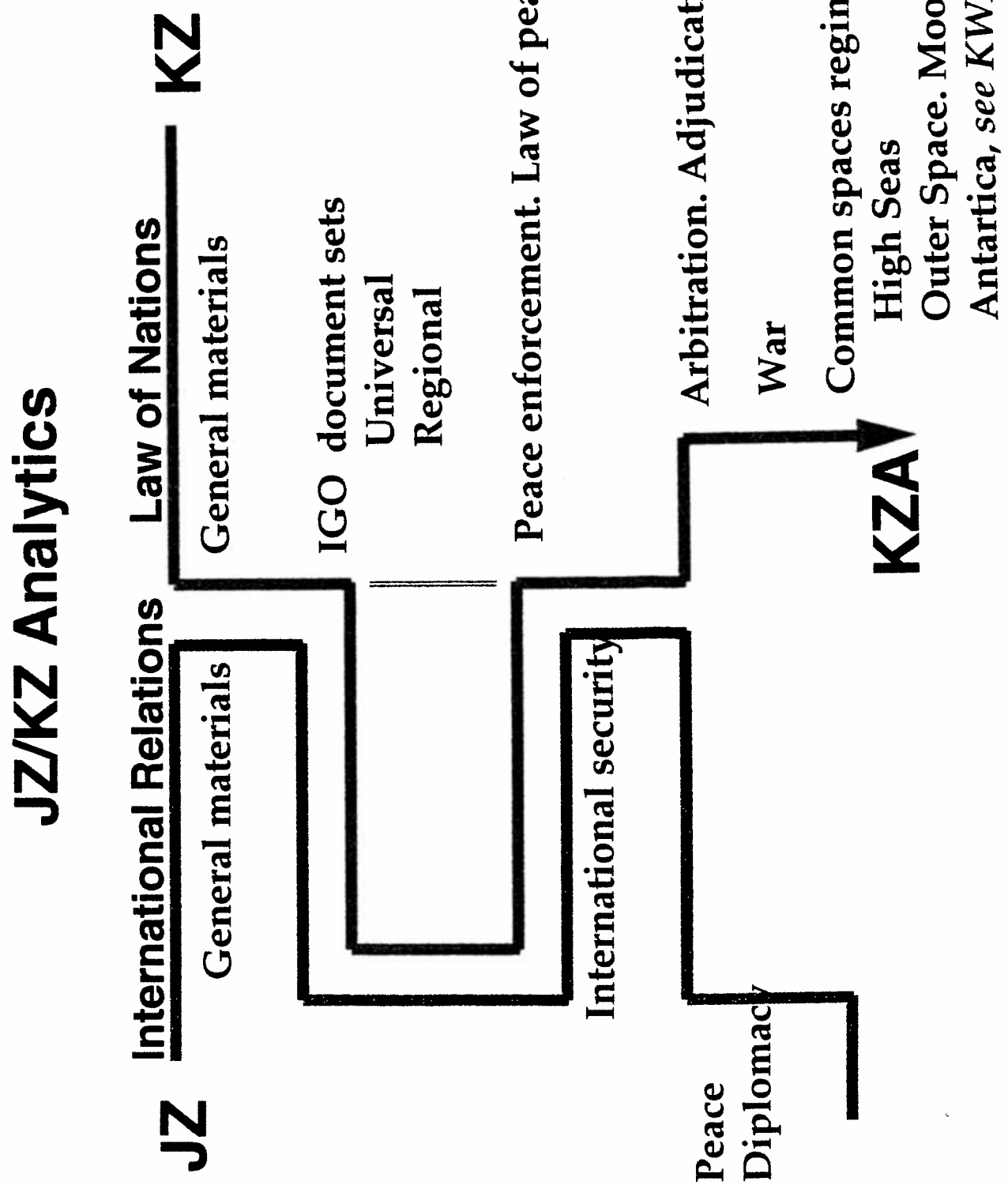

Figure 5

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Goldberg, J. (1996). Library of Congress Classification:· Does Organization of Knowledge Need a Shelf?. 7th ASIS SIG/CR Classification Research Workshop, 49-70. doi:10.7152/acro.v7i1.12689

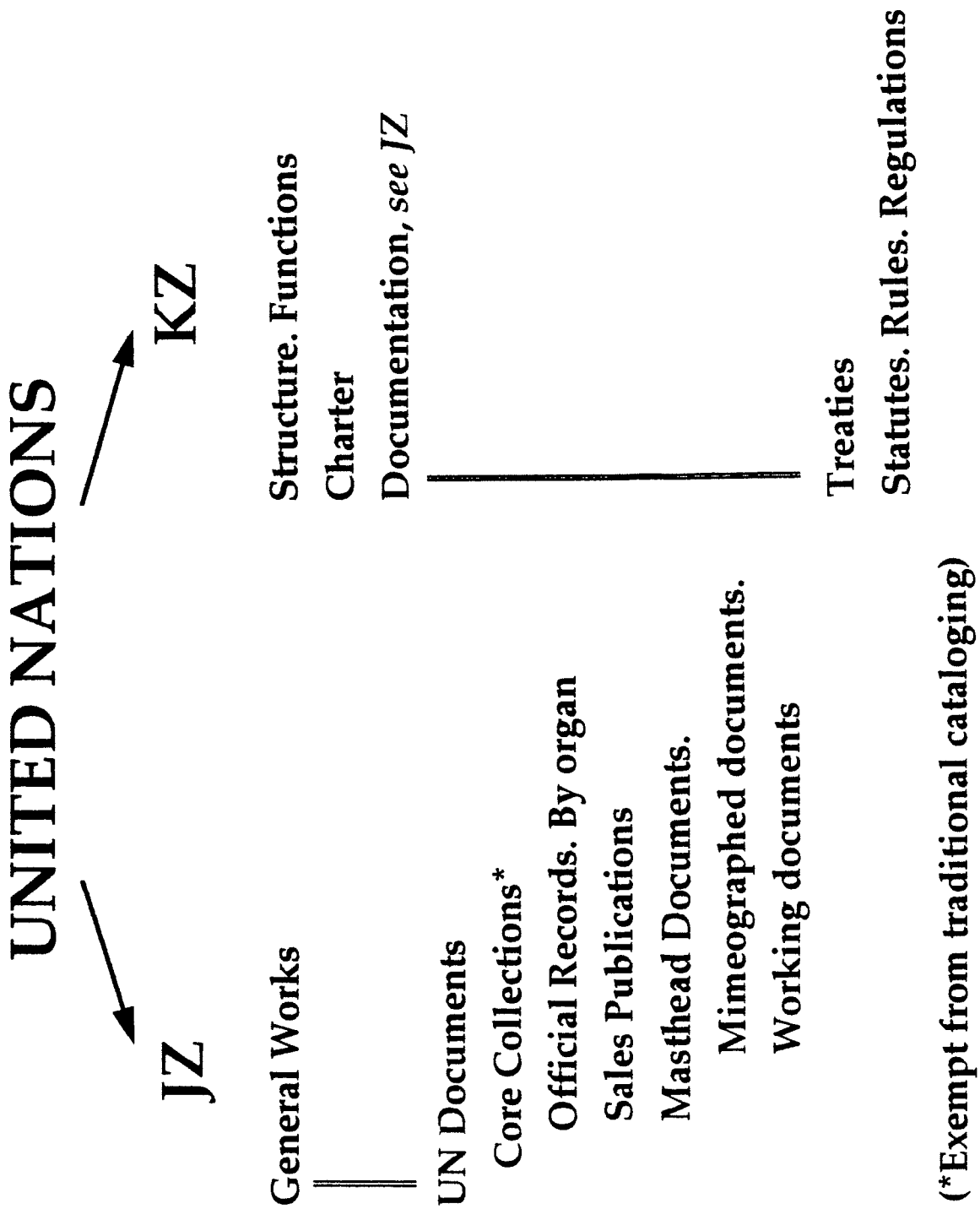

Figure 6

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