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【摘　要】

組織圖乃研究圖書館組織的基本要件。本研究旨在透過五所美國大學圖書館的組織圖分別比較1970年代初期與1990年代初期各個圖書館組織結構之異同，及各圖書館在該二時期組織結構的變化。比較的要素計有：(一)組織部門，下分(1)功能（如：分編、參考等）,(2)學科（如：教育、物理等）,(3)自治性質圖書館,(4)特殊館藏（如：與圖、微縮資料等）；(二)館長與副館長的權力範圍；(三)組織層級；(四)圖書館委員會；(五)圖書館的行政單位（如：會計、人事等）及(六)館長的名稱與上級單位。

1970年代初期與1990年代初期之大學圖書館的組織部門均結合功能、學科及特殊館藏等屬性而組成。唯，於1990年代各大學圖書館或新創組織，或更著重組織名稱，或變動所屬單位以加強許多特定獨立的功能，例如：館際互借，館藏發展與管理、自動化等。

儘管古典派管理理論存在有不少為人詬病的缺點，直至1990年代初期，大學圖書館之組織結構充滿著傳統派管理學者費堯（Fayol）的梯形連結（Scalar Chain）與勞力分工（Division of Labor），韋伯（Weber）的官僚模式（Bureaucratic Model），及古立克（Gulick）與費堯的權力範圍（Span of Control）等理論色彩。
【ABSTRACT】

The organization chart is treated as the essential element in the study of library organization. By the comparison of five American academic libraries, this study investigated (1) the differences in these libraries organizational structure for the years 1970-72 and 1990-92 and to identify any trends in organizational transition in academic libraries; (2) what organizational theories have been reflected in organizational charts of academic libraries. All the comparisons are based on the following dimensions: (a) departmentation structure by function, academic subject and form of resources; (b) span of control, or the number of positions supervised by high-level management; (c) level of hierarchy; (d) coordinating line, formal/informal or direct/indirect coordinating line of the organizational structure; (e) staff officers; (f) reporting line or reporting relationship; (g) title of manager, etc.

In 1970-72, organization charts were mostly hierarchical and nearly all the library charts examined in 1990-92 continued to display a basically hierarchical structure also. While many of the 1990-92 charts indicate that academic libraries continue to be organized around traditional functions, most include more functions than twenty years ago, and many show units that have been moved around or renamed. Some charts reflect the growing importance of specific functions over the past twenty years. Obvious examples include development, interlibrary loan, preservation, collection development/management, planning, and automation. Since academic libraries have been traditionally structured, their organization charts have changed relatively little over the past twenty years and they still depend heavily on Weber, Fayol and Gulick’s classical theories for the bases of their formal organization.
I. INTRODUCTION

During the last two decades, academic libraries have encountered new and great challenges, such as the information explosion; advances in automation and technology; the rising cost of materials, labor, and equipment; declining library revenues; and competition from other information-disseminating organizations. To face these challenges, changes in the library organizational structures are an important response. An organizational structure is "the result of the organizing process and is the system of relations, formally prescribed and informally developed, that governs the activities of people who are dependent on each other for accomplishment of common objectives".¹ There appear to be many significant changes in library organizational structure since the 1970s. Some changes can be determined from examination of organization charts of many libraries.

An organization chart is "a picture of the way that things in a particular library are produced; and it can be of value in showing relationships, responsibilities, lines of communication, etc."² Its primary function is to show the relationship of one organizational unit to another through lines of authority. Organization charts can be used to examine the role of the formal hierarchy in bringing parts of an organization together. Therefore, to comprehend an organization, one must grasp its authority structure as reflected in its organization chart. Normally, libraries depict their structure in an organization chart.

The purposes of this study are: (1) to compare the differences in academic library organizational structure for the years 1970-72 and 1990-92 and to identify any trends in organizational transition in academic libraries; (2) to investigate what organizational theories have been reflected in organizational charts of academic libraries.

II. LITERATURE REVIEW

Academic libraries have grown in size and complexity over the last 50 years and developed into what now are truly complex organizations. The literature on management of academic libraries
is large and diverse. However, there are a few works on library administration, appearing in the 1940s and after, showing an acquaintance with the body of organizational theory that had emerged in the early decades of the century. Wilson and Tauber's book, titled *The University Library: The Organization, Administration and Functions of Academic Libraries*, would be one of the earlier works that involved some theories of Fayol, Gulick and Urwick.³

The rational model exemplified in the work of the classical management theorists such as Max Weber and Henry Fayol has dominated the study of library organization and management since the 1950s. The model emphasizes the importance of organizational structure and methods of coordination and control in the attainment of goals. Most library managers and students of library management still look to the rational model to understand the library organization. Lynch criticized that little of this type of study has a research orientation and most are reported in doctoral dissertations and master's theses.⁴

For most library managers, the structure is understood in terms of the library's organization chart. They assume that this structure is inflexible and bureaucratic.⁵ In order to test this concept, Howard investigated four university libraries to find a relationship between the structural variable complexity and the rate of innovation in libraries.⁶ Bryant, motivated by an interest in finding the optimal organization pattern(s) to enhance the power of the collection development function within the library, also sought a rational model of organization.⁷ Her article illustrates the assumption that the organization chart displays organizational power. Spence tried to test Weber's theory of the relationship of organization size to organizational structure by investigating structure as multidimensional variable.⁸

From the above brief reviews it can be seen that the organization chart was treated as the essential element in the study of library organization. However, no prior study was identified that tried to compare multiple variables among several academic libraries between two different time periods through the analysis of organization charts. This study seems to be the first one to do a global comparison of organizational structure of selected academic libraries.
III. THEORETICAL FRAMEWORK

The theoretical framework of this study is based on three classical management theories: Weber’s bureaucratic model, Fayol’s control theory and Gulick’s principles. These theories are briefly reviewed in this section.

Weber was more concerned with the structure of the organization rather than with the individual. Most of his research and writings related to specialization in labor, and the advantages of a hierarchical structure of supervisors and subordinates, with various superior-subordinate relationships fitted together into a chain of command from top to bottom. The principle of hierarchy, existing in an organization chart, explains a vertical differentiation and is one of the characteristics of a bureaucratic organization. Weber described the bureaucracy as an ideal type of structure. He identified its five characteristics as follows: "(1) impersonal and formal conduct; (2) employment and promotion on the basis of technical competence and performance; (3) systematic specialization of labor and specifications of responsibilities; (4) a well-ordered system of rules and procedures that regulate the conduct of work; (5) hierarchy of positions such that each position is controlled by a higher one and complete separation of the property and affairs of the organization from the personal property and affairs of the incumbents."¹¹

According to Weber’s theory, the library is a bureaucracy, with its hierarchy of positions, divisions and departments.

Weber’s description brings together a large number of concepts also already discussed by Fayol and Gulick. Those concepts are division of work, hierarchy of authority, and horizontal specialization. Some of Fayol and Gulick’s theories can also be seen from the organization chart. Such theories are division of work, unity of command, order, unity of direction, scalar chain, and span of control, which are discussed in more detail below.

1. Division of Work

Within the hierarchy, according to Fayol’s principle, individuals and sections are to have special skills and distinct
responsible. As noted by Fayol, "the object of division of work is to produce more and better work with the same effort".\textsuperscript{11} Therefore, specialization naturally identifies and groups similar or related activities or tasks into departments. The departmentation can be identified by purpose, by process, by clientele, and by geography.\textsuperscript{12} An organization might well need more than one of these types. One of the categories of specialization is that of line and staff officers. The main function of a line officer is to retain control and unity of command. Most staff officers carry responsibility for providing advice, support and service to the line positions in carrying out their work.

2. Unity of Command

Fayol described 'unity of command' as "an employee should receive orders from one superior only. Dual command is a perpetual source of conflicts".\textsuperscript{13}

3. Order

Fayol defined 'order' as "there is a right place for everything and everyone in the organization; the hierarchy is the component of the system of authority that is essential to the maintenance of order".\textsuperscript{14}

4. Unity of Direction

Fayol again identified 'unity of direction' as "one head for a group of activities having the same objective; it is the condition essential to unity of action, coordination of strength and focusing of effort".\textsuperscript{15}

5. Scalar Chain

Fayol described the scalar principle as "the chain of supervisors ranging from the ultimate authority to the lowest ranks. The line of authority is the route followed--via every link in the chain--by all communications which start from or go to the ultimate authority. This path is dictated both by the need for some transmission and by the principle of unity of command, but it is not always the swiftest".\textsuperscript{16} Through the line of authority the subordinate knows to whom he or she is responsible and for what; further, the parameters of his or her authority in relation to other employees are clear. As a result of the ranking of organizational units, the vertical hierarchy develops.
6. Span of Control

The span of control means how many individuals should the administrator supervise. This concept is important because "the limit of control is partly a matter of the limits of knowledge, but even more is it a matter of the limits of time and of energy". Fayol proposed that a manager at the head of a big undertaking should not have more than five to six in the span of control.

The most important concepts of Fayol and Gulick's theories that can be identified from the organization charts include division of labor and its outcome of departmentation structure by purpose and process (function), clientele and subject (departmental library), form of material (special collections, documents) and place (autonomous library); unity of command; limited span of control; specialization of tasks, line and staff officers, and scalar chain. All are designed to maintain control and to coordinate workers and sections into a unified whole.

IV. METHODOLOGY

The following methodology was followed to accomplish the objectives of this study.

1. The organization charts were selected from the following two sources and are attached as appendix A and B:

2. The selected libraries must be the libraries that appear in both (a) and (b).

3. Only five libraries meet the above criterion and were therefore selected for this study. These libraries are The University of Florida Libraries, The University of Iowa Libraries, University of Kansas Libraries, University of Kentucky Libraries and University of Rochester Libraries.

4. These five libraries are compared in
three ways: (a) similarities/differences among the libraries during the period of 1970-72; (b) similarities/differences among the libraries during the period of 1990-92; and (c) differences of each library between the years of 1970-72 and 1990-92.

5. All the comparisons are based on the following dimensions: (a) departmentation structure by function (acquisitions, cataloging, circulation, reference, etc.), academic subject (engineering library, business library, music library, etc.), and form of resources (maps, A-V material, microforms, etc.); (b) span of control, or the number of positions supervised by high-level management; (c) level of hierarchy; (d) coordinating line, formal/informal or direct/indirect coordinating line of the organizational structure; (e) staff officers; (f) reporting line or reporting relationship, for example, official and multiple reporting relationships; (g) title of manager, such as director, librarian, associate director or librarian, head, etc.

For simplicity in presentation, each library is identified by the name of its state or city hereafter.

V. RESULTS

The results of this study are presented in three ways as (1) the similarities and differences during the period of 1970-72; (2) the similarities and differences during the period of 1990-92; and (3) the differences between the period of 1970-72 and 1990-92. The dimensions that will be compared include departmentation structure by function (acquisitions, cataloging, circulation, reference, etc.), subject (departmental library), place (autonomous library), and form of resources (special collection); span of control of library director and associate/assistant director; level of hierarchy; advisory committee; staff officer; title and reporting line of library director.

A. Departmentation Structure

There is no one right way to establish departmentation in an organization. The five academic libraries compared in this study were mostly organized by function, subject and form of resources.
(1) By Function

Operations at these libraries in 1970-72 were organized by traditional division of labor by function and divided into two major components: technical services and public services. This structure became stratified into a hierarchical, typical bureaucratic design. Table 1 shows that the standard components of a technical services division were acquisitions, cataloging and serials. Often the acquisition and cataloging of serials were separated organizationally from the processing of monographs. For the most part these five academic libraries developed their patterns of administrative organization independently. However, reference to the accompanying organization charts reveals a surprising uniformity in number and identity of units. First of all, there were major departments like reference, circulation, special collections, cataloging, acquisitions, departmental libraries, and several autonomous libraries not reporting to the director of the university library. Within the major subdivisions, there was less identity of units but, even so, a rather remarkable similarity. The government documents department constituted a major division at all these libraries, except Rochester. Iowa, Kansas and Kentucky had government documents unit been under public services, while Florida put the documents department under technical services. Rochester did not have a technical services division. The acquisitions, cataloging, serials and binding departments reported directly to the director of libraries. Kansas split acquisitions tasks into four independent departments: book selection, order, exchange/gifts and serials, all reporting to the assistant director of technical services directly. It also had two independent departments for binding, one was bindery and the other was bindery preparations. For Kentucky there was a central serials record unit under acquisitions, but no serial department existed separately. Its ‘Binding Preparation’ performed the function of book binding.

Three standard units within public services in 1970-72 were reference, circulation and departmental libraries. Iowa and Kansas had an interlibrary loan service within reference. Branch or departmental libraries existed in addition to the traditional functional divisions. However, the departments of the library were grouped
into two or four major subdivisions, each headed by an assistant administrator. The most frequent form of division was simply into public (or reader) services and technical services.

Table 1
Departmentation by Function, 1970–72

<table>
<thead>
<tr>
<th></th>
<th>Florida</th>
<th>Iowa</th>
<th>Kansas</th>
<th>Kentucky</th>
<th>Rochester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Services</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>--</td>
</tr>
<tr>
<td>Acquisitions</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(multi depts)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cataloging</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Serials</td>
<td>--</td>
<td>X</td>
<td>X</td>
<td>--</td>
<td>X</td>
</tr>
<tr>
<td>Binding</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(in serial)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Services</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Circulation</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Reference</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Government Publication</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(in tech service)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Departmental Libraries</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
It can be seen from Table 2 that operations at these libraries in the years of 1990-92 were divided into three major components: technical services, public services and collection development/management. As academic libraries grew, the organizational structure became more complicated than before. The prevalent change was the establishment of a collection development/management department. Four of the five libraries (not Kansas) created collection development as a separate unit that reports to the director directly.

The creation of a separate preservation unit was becoming quite common, but its placement in each organization varied. All libraries but Kansas referred to this activity simply as 'preservation'. Florida and Rochester put the preservation function into technical service, while Kentucky located it in public service. Iowa established a collection development and management department to embrace the preservation and conservation activities.

Library automation had resulted in a significant organizational change in cataloging departments. There was no catalog department in Iowa but a central technical services unit instead. In the case of Rochester, copy cataloging was an independent unit that ran in parallel with the catalog maintenance division.

The access services department or division was responsible for the services and operations that allow physical access to library collections. Before the emergence of the term 'access services', libraries tended to have circulation departments. The common reporting structure was to have access services reporting to the head of public services. The access department of Iowa and Rochester have the typical access services structure that embodies subfunctions of circulation, stacks, document delivery, and interlibrary loan. All five libraries now have established interlibrary loan services. Its operation tended to be part of the circulation or access services department.

The systems and automation operations are present virtually in every library. Rochester designated a 'systems' unit, while Florida and Kentucky used 'systems office' to designate this area of responsibility. Iowa had 'library automation office' and Kansas had 'automation librarian'. The separation of systems from
technical services indicates a widening definition of systems. In this study, at both Kansas and Rochester the automation librarian or assistant director for computer systems reported to the Dean/Director of libraries directly.

Microcomputers were becoming more and more important and were beginning to receive prominence in their own right. The appearance of microcomputer lab as a separate unit in the Iowa chart suggests increased importance of this area of growth.

The organization chart of Iowa showed an extraordinary structure. It had three broad subject divisions: one for science, one for social science, and a third for humanities. The subject divisions reported to one of three directors, who also maintained responsibility for one or more functional areas. The Director for Collection Development/Management had charge of the Humanities Division. Acquisitions, preservation and conservation also went under the division of collection development/management. The Director for Instructional and Research Services was responsible for the Social Science Division and administrated reference, government documents and media services simultaneously. The Department of Information Systems and Technology consisted of subdivisions like science division, library automation office, systems/electronic information development, and microcomputer labs. The administrative and access services were combined to form a unit that would supervise ‘development’, ‘personnel’, ‘planning’, ‘access services’, and ‘central technical service’ which was responsible for cataloging operation.20
<table>
<thead>
<tr>
<th></th>
<th>Florida</th>
<th>Iowa</th>
<th>Kansas</th>
<th>Kentucky</th>
<th>Rochester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Services</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Acquisitions</td>
<td>X</td>
<td>*</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Cataloging</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Serials</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preservation</td>
<td></td>
<td></td>
<td></td>
<td>***</td>
<td>X</td>
</tr>
<tr>
<td>Systems</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Public Services</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Access / Circulation</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Reference</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Government Documents</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Interlibrary Loan</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Collection Management</td>
<td>X</td>
<td>X</td>
<td></td>
<td>****</td>
<td>X</td>
</tr>
</tbody>
</table>

* and ** The acquisition and preservation divisions of Iowa is set up under the control of Collection Development / Management department.
** ** The preservation division of Kentucky is under the administration of Public Service Department.
*** *** Systems office of Kentucky is part of the public services/systems department.
**** **** The department of Collection Development of Kansas reports to Assistant Dean for Technical Services.
In 1970-72 the function of collection development/management had not been institutionalized. The responsibility for selecting new acquisitions was shared by a number of individuals. For most selectors, collection development was only a part-time concern. In the years of 1990-92 several bibliographers emerged and acted as selectors devoting essentially full time to collection development. In the earlier charts, no one indicated such a position for collection development, while it appeared in 1990-92. An authorized position for an assistant or associate director who is responsible for collection development/management was therefore established. However, there is a diversity in the organizational location of this activity. The most common reporting line was to the director.

In addition to the establishment of collection development/management as a separate unit, other significant changes in function appeared in 1990-92. Preservation functioned as a part of the organization, in contrast to its absence twenty years ago, except for binding units. Library cooperation appears to be more and more important, as all five libraries set up interlibrary services by 1990-92. The traditional circulation department had been replaced by an ‘access services’ department. In automated departments, copy catalogers tended to be grouped apart in units often of comparable status to those occupied by original catalogers. There was only one separate automation unit in years of 1970-72, while in 1990-92, the automation operations are present in virtually every library. This reflects the impact of computers on library operations.

(2) By Departmental Libraries

Most of the departmental libraries were subdivided by academic subject. These subject departmental libraries were in some cases units specialized by user groups. For example, separate collections for music and law serve circumscribed clienteles with particular needs and use habits. A new field, a new discipline, and eventually a new academic department spring from the intersection of traditional disciplines. Departmental libraries demonstrate an awareness of information needs of different subject departments. But different divisions emerge on different campuses. Examination of the organization charts shows the links
between such subjects as architecture and fine arts or physics and engineering. Table 3 illustrates the number and names of departmental libraries for each of the five academic libraries. It can be seen that Iowa, Kansas and Kentucky had the most departmental libraries, between nine and eleven, while Florida had only four and Rochester had none.

**Table 3**

Number and Name of Departmental Libraries, 1970–72

<table>
<thead>
<tr>
<th>University</th>
<th>No.</th>
<th>Departmental Library (excluding reading rooms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida</td>
<td>4</td>
<td>Engineering/Physics, Education, Architecture/Fine Arts, Chemistry.</td>
</tr>
<tr>
<td>Iowa</td>
<td>11</td>
<td>Art, Botany/Chemistry, Business/Administration, Education/Psychology, Engineering, Geology, Health Science, Mathematics, Music, Physics, Zoology.</td>
</tr>
<tr>
<td>Kentucky</td>
<td>10</td>
<td>Architecture, Biological, Chemistry/Physics, Mathematics, Fine Arts, Geology, Engineering, Education, Agriculture, Law.</td>
</tr>
<tr>
<td>Rochester</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
The major university libraries in the years of 1990-92, were turning more and more to combining smaller departmental libraries into major complexes situated in the center of a cluster of academic departments that use the collection. The number and name of departmental libraries of each academic library are displayed in Table 4. Iowa offered a 'science division' that serves specialized needs in the unified subunit of science. Florida grouped the music library, education library, and architecture/fine arts library together under the supervision of the Humanities and Social Sciences Reference Department. The conjunction of government documents and the map library was a prevalent trend that appeared in Kansas and Kentucky's organization charts. For Rochester, the cross-disciplinary relationship such as Asia and map, government documents and microforms displayed a rather different structure from others.

Table 4
Number and Name of Departmental Libraries, 1990–92

<table>
<thead>
<tr>
<th>University</th>
<th>No.</th>
<th>Departmental Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida</td>
<td>5</td>
<td>science, music, education, architecture / fine arts, map.</td>
</tr>
<tr>
<td>Iowa</td>
<td>11</td>
<td>biology, chemistry / botany, engineering, geology, health science, mathematics, physics, psychology, art, music, business.</td>
</tr>
<tr>
<td>Kansas</td>
<td>7</td>
<td>science, engineering, document / map, music, art, East Asian, Reg. Center library.</td>
</tr>
<tr>
<td>Kentucky</td>
<td>12</td>
<td>music, mathematics, geology, engineering, education, chemistry / physics, business, biology, architecture, social work, agriculture, law.</td>
</tr>
<tr>
<td>Rochester</td>
<td>7</td>
<td>Asia / map, art, management, Robbins lib, Carlson library, physics / optics / astronomy, LLE.</td>
</tr>
</tbody>
</table>
Departmental libraries were the common pattern and were being integrated into a central system between the two study years. The charts in the 1990-92 show the diversified changes in the organization of departmental libraries. The lines of groupings for most of the libraries are quite clear: science and engineering, social sciences, humanities and special collections, while the lowest level in the groupings differs somewhat from one another.

(3) Autonomous Library

Autonomous libraries are usually identified by dotted lines in the organization charts and they usually report to the Dean of their respective schools. Their relationship with the main university library is mostly informal. The library director plays the role of coordinator and has no administrative authority over it, but there would be a channel through the provost if there were a dispute in the exercise of authority.

In 1970-72, Florida had three autonomous libraries, namely, agriculture, health, and law. Kansas, Kentucky and Rochester all listed the medical library as a typical autonomous library. Medical libraries were the most frequently autonomous libraries, followed by the law library (Florida) and music library (Rochester). Medical schools are often at locations remote from the main campus; this has tended to encourage autonomous development of their libraries.

Only Kentucky and Rochester had autonomous libraries indicated in 1990-92. The medical library of Kentucky and the rare books of Rochester were not formal units in the library and did not need to report to the Director of the library.

These libraries have some units which are coordinated through the director of the university library, whose relationship to the units is that of influential counselor rather than direct administrator in both periods. The number of autonomous libraries decreased by 1990-92. This phenomenon may be due to the growing importance of autonomous libraries and their formal inclusion into the parent organization.

(4) Special Collection

In 1970-72, four academic libraries, excluding Rochester, maintained a separate department for special collections. A
special collection is a gathering of materials of a certain format, on a certain subject, or from a certain historical period or geographical area. Such collections most commonly include rare books, manuscripts, archival materials, government documents, maps, and other nonbook items. Iowa had a rare book division within the special collections department. Rochester did not have a special collections department but had an independent rare book unit. A government documents department existed in all of these libraries except in Rochester. The government documents department had different names such as 'documents department', 'government documents', or 'government publications'. Kentucky established current periodicals reading room. One noteworthy type of special collection was university archives that existed in three (Iowa, Kansas, Kentucky) libraries in this study. Also noteworthy were the PK Yonge Library of Florida History and the Kansas Regional History Division. Most of the libraries made the special collections department report directly to the Director of libraries, as at Florida, Kansas and Kentucky. Iowa had special collections located in the public service division and included five subunits: exhibits, manuscripts, maps, rare books, and university archives.

In 1990-92, Florida had a department of special collections positioned under collection management. Iowa also set special collections and archives under the administration of its collection development department. Kentucky divided its special collections department into seven subdivisions, namely, Appalachian Collection, Audio-Visual Archives, King Library Press, Manuscripts, Modern Political Papers, Oral History, and University Archives. The head of the special collections department reported to the Director directly. As one would expect in a research library, several types of special collections were provided for advanced research activities on highly specialized topics. The Modern Political Papers and Oral History divisions of Kentucky were examples. The special collections department of Kansas reported to public services.

The change in the organization of the units in special collections is most pronounced. In 1970-72, special collections
stood at a level as prominent as public or technical services. The shift to inclusion under collection management may be seen as a trend toward a common recognition that collections and services in maps, rare books, media, government documents, archives, etc. are of general interest and should be placed at convenient locations and operated by an effective administrative mechanism.

The hierarchical level of the special collections department had been downgraded from second (report to director) to third (report to assistant or associate director) in 1990-92. The university archives was separated from the special collections department and constituted as an independent division in Kansas. Rochester had a rare books department as a formal unit reporting to the director in 1970-72 but this link became an informal one in 1990-92.

B. Span of Control of Director and Associate/Assistant Director

There is no theory, except Fayol’s proposal of the number six, that prescribes the exact number of individuals the administrator should supervise. In general it has been stressed that the span must be kept small enough so that adequate control can be exercised. An ideal span of control will be determined on the basis of the type of organization and the type of activity being supervised. For example, as suggested by Stueart and Moran, “more routinized situations allow a wider span of management,”21 while more decision oriented positions can only manage a smaller number of subordinates. This usually results in recommendations of smaller numbers for the higher echelons and larger numbers for lower down the line.

In 1970-72 the span of control of the Director of libraries was generally limited to the handful of assistant or associate directors, plus perhaps an administrative assistant or two to help with budget work, accounting, and building maintenance. Table 5 shows the number and title of subordinates that were supervised by the Director and Associate/Assistant Directors. It can be seen that Kansas had more units report to one manager, i.e., eight for director and ten for assistant director of technical services. Both a Director and
Table 5
Number and Titles Supervised by Director
and Associate/Assistant Director, 1970-72

(a) Director

<table>
<thead>
<tr>
<th>University</th>
<th>No.</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida</td>
<td>7</td>
<td>two Assistant Directors for technical processes and reader services; one head of special collections; one head of PK Yonge Library of FLA History; one Assistant Director for systems; one Executive Assistant; one Staff Assistant.</td>
</tr>
<tr>
<td>Iowa</td>
<td>2</td>
<td>Two Assistant University Librarians of technical services and reader services.</td>
</tr>
<tr>
<td>Kansas</td>
<td>8</td>
<td>one Associate Director for budget, personnel and physical facilities; one Assistant Director for public services; four heads of systems, law library, copying service, and security/delivery; one Assistant Director for special collections; one Assistant Director for collection development/technical services/publications.</td>
</tr>
<tr>
<td>Kentucky</td>
<td>1</td>
<td>one Associate Director.</td>
</tr>
<tr>
<td>Rochester</td>
<td>6</td>
<td>one Assistant Director of libraries; one Associate Director of libraries for reader services; four heads of rare books, acquisitions, cataloging, serials and binding.</td>
</tr>
</tbody>
</table>

(b) Associate/Assistant Director

<table>
<thead>
<tr>
<th></th>
<th>Florida</th>
<th>Iowa</th>
<th>Kansas</th>
<th>Kentucky</th>
<th>Rochester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Services</td>
<td>3</td>
<td>3</td>
<td>10</td>
<td>3</td>
<td>--</td>
</tr>
<tr>
<td>Public Services</td>
<td>8</td>
<td>15</td>
<td>8</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

Associate Director were needed in Kentucky. The direct-services activities are under the Associate Director, and divided into five units: public services, technical services, agriculture library, law library, and special collections. The University Librarian of Iowa had a narrow span of control, but the assistant university librarian
for reader services supervised the most subordinates. In general, the Assistant Director for public services possessed a wider span of control than the Assistant Director for technical services.

Of direct effect on the organizational structure is the span of control that prevails. The substantial variations in the second level of administration in 1990-92 are shown in Table 6. Iowa had four 'Director' titles used at the assistant/associate level. Surprisingly, the Director of Kentucky had twelve and the Assistant Dean for Public Services of Kansas had ten subordinates to supervise. Both feature a wide span of control. Almost all of the titles for assistant/associate directors are traditional, i.e., technical services, public/access services, collection development, administrative services, systems, and automation. Iowa had new titles such as instruction/research services and information systems/technology. Instead of the title for administrative services, Florida introduced a title of "library support services". Kansas changed the title of assistant director to assistant dean.
Table 6
Number and Titles Supervised by Director
and Associate / Assistant Director, 1990-92

(a) Director

<table>
<thead>
<tr>
<th>University</th>
<th>No.</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida</td>
<td>4</td>
<td>three Assistant Directors for technical services, public services, library support services; one associate director for collection management.</td>
</tr>
<tr>
<td>Iowa</td>
<td>5</td>
<td>four directors of collection development / management, instructional / research services, information systems / technology, administrative and access services; one executive council.</td>
</tr>
<tr>
<td>Kansas</td>
<td>5</td>
<td>two assistant deans for technical services and public services; two assistants to the dean for personnel and budgets; one automation librarian.</td>
</tr>
<tr>
<td>Kentucky</td>
<td>12</td>
<td>three associate directors for libraries, public services / systems, and facilities planning; four assistant directors for collection development, technical services, special collections / archives, community college library system liaison; three directors for agriculture library, law library, office of instructional resources; one head of administrative services; one development assistant.</td>
</tr>
<tr>
<td>Rochester</td>
<td>6</td>
<td>three assistant directors for technical services, computer systems / applications, public services; three heads of collection development, friends of the UR Libraries, manager administrative services / personnel officer.</td>
</tr>
</tbody>
</table>

(b) Associate / Assistant Director

<table>
<thead>
<tr>
<th></th>
<th>Florida</th>
<th>Iowa</th>
<th>Kansas</th>
<th>Kentucky</th>
<th>Rochester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Services</td>
<td>4</td>
<td>--</td>
<td>6</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Public Services</td>
<td>4</td>
<td>--</td>
<td>10</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Collection Management</td>
<td>3</td>
<td>8</td>
<td>--</td>
<td>1</td>
<td>--</td>
</tr>
</tbody>
</table>
The span of control as defined by the organization charts varied considerably between these two study periods in some cases increasing and in others decreasing. According to Fayol's theory, simply adding to the span of control, as an organization grows in size, can weaken the supervision exercised. The director of Kentucky and the Associate Dean for Public Services of Kansas seem to be contrary to Fayol's recommendation because they expanded the span of control from one to twelve and from eight to ten, respectively. This situation implies that the high-level manager must have a much broader range of knowledge to handle the more complicated operations. In addition, some cases of span decreased. The Director of Florida and Kansas decreased their span from seven to four and eight to five respectively.

C. Level of Hierarchy

The level of hierarchy is counted as the level of command between the lowest (bottom) level of the structure, such as clerk at the circulation desk, and the top echelon, such as director of libraries. A hierarchy is often illustrated as a "triangle with the ultimate authority at the apex of the triangle and authority flowing downwards to all other parts of the triangle". A subdepartment is usually attached to a primary department and the manager of the primary department supervises the manager of the subdepartment. The level of hierarchy mirrors Fayol's scalar principle and chain of command. The scalar principle requires that there be final, ultimate authority in every organization, and that the line of authority extend downwards through the organization to every subordinate position. There is a hierarchy of positions in libraries, i.e., the managerial structure of supervisors, department heads, division chiefs, and directors or university librarians. The final authority of academic library is the Director. Table 7 reflects the level of hierarchy of each library structure in 1970-72. Florida and Rochester each had three levels of operation. The others had four management levels. This identifies Iowa, Kansas, and Kentucky have one more level for authority to go downwards from the Director to the clerk.
<table>
<thead>
<tr>
<th>University</th>
<th>No.</th>
<th>Position</th>
</tr>
</thead>
</table>
| Florida     | 3   | Director of Libraries  
Assistant Director for Reader Services  
Circulation Department |
| Iowa        | 4   | University Librarian  
Assistant Librarian for Reader Services  
Circulation  
Bookstacks |
| Kansas      | 4   | Director of Libraries  
Assistant Librarian for Public Services  
Circulation  
Microforms |
| Kentucky    | 4   | Director of Libraries  
Assistant Librarian for Public Services  
Circulation  
Reserve Collection |
| Rochester   | 3   | Director of Libraries  
Associate Director for Reader Services  
Circulation Department |

Theoretically, the less the hierarchical level a library has, the more horizontal the organizational structure should be. In other words, the levels of supervision are sure to decrease. Table 8 shows the hierarchical structure of each library in 1990-92. Kansas and Rochester possessed the most (5) tiers of organizational structure. The other three libraries had four levels of operations. Evidently, the organizational structure of Kansas and Rochester tended to be more vertical than the others.

In general, the number of management levels tends to be larger in 1990-92. Iowa and Kentucky kept the same hierarchical structure in terms of levels, while the others increased. The growth of the hierarchical tier implies the organizational structure tends to be more vertical. Stated differently, the scalar chain is more complete than the horizontal structure that existed in 1970-72.
Table 8
Number and Position of Management Levels, 1990–92

<table>
<thead>
<tr>
<th>University</th>
<th>No.</th>
<th>Position</th>
</tr>
</thead>
</table>
| Florida    | 4   | Director of Libraries  
|            |     | Assistant Director for Public Services  
|            |     | Access Services Department  
|            |     | Interlibrary Loan |
| Iowa       | 4   | University Librarian  
|            |     | Director for Administrative / Access Service  
|            |     | Access Services  
|            |     | Circulation |
| Kansas     | 5   | Dean of Libraries  
|            |     | Assistant Dean for Technical Services  
|            |     | Serials Department  
|            |     | Periodicals Reading Room  
|            |     | Copying Services |
| Kentucky   | 4   | Director of Libraries  
|            |     | Associate Director for Public Services  
|            |     | Circulation Department  
|            |     | Interlibrary Loan |
| Rochester  | 5   | Director of University Libraries  
|            |     | Assistant Director for Public Services  
|            |     | Reference  
|            |     | Art Library  
|            |     | Mag(Memorial Art Gallery) |

D. Advisory Committee

Most of the charts in 1970-72 indicated committees as a part of the organization, such as advisory committee and university library committee. The advisory committee could be an asset to the Director, who could enlist the assistance of an advisory committee to help oversee library operations. Because the committee operates in an advisory capacity, a dotted line connects the library director and the committee block in the organization chart. In Florida’s chart, the University Library
Committee was such a case. Since it functioned as an advisory body to the library Director, the dotted line denoted its non-administrative function. Another pattern of the organization of advisory committees gives a broader area of responsibility to the advisory committee. Iowa’s University Library Committee was responsible for providing consultation not only for the Dean of Library Administration but also for the President and Provost. The Senate Library Committee of Kansas was a formal unit under the control of the Vice Chancellor for Academic Affairs but also reporting to the Director of Libraries. The Senate Advisory Library Committee of Kentucky was connected to the Director of Libraries as an advisory functional unit.

Within these academic libraries, the advisory library committee in 1990-92 might be inside or outside the boundaries of the library. Florida and Kansas had library committees as informal organizational units as shown by the dotted line in the organization charts. Rather than a library committee Rochester had a Friends Group shown on its chart. The executive council was a formal unit reporting to the University Librarian of Iowa and might perform in part a committee function.

There are a few instances of coordinating lines, probably due to an increase in participative decision-making over the past twenty years. Committees appear on the charts frequently as a part of the organizational structure in both periods. Most of the library committees were informal units in 1970-72. However, in some cases they were promoted to a formal unit in 1990-92. The organization of ‘friends of the library’ of Rochester was a new and formal establishment for the library committee function.

E. Staff Officers

As Martin mentioned, “classical theory from the beginning has recognized and approved the role of specialists within organizations, and in particular has encouraged the use of staff officers”. Staff officers are a prominent part of the organizational structure of academic libraries. The staff officers in substance are extensions of the director, helping with parts of the responsibility that are intrinsic to the director’s job. From these organization charts it can be seen that the
Directors of these five libraries in 1970-72 usually had administrative and personnel units to assist in the management of library operations. These units frequently operated in a staff capacity to the director and rarely exercised direct supervisory authority over library operations.

In 1990-92, the standard staff officers were responsible for personnel, finance, facilities, development and planning. Group decision-making had extended in these libraries to a small council. Some of the members were experts in one or another field, such as planning officers and system analysts. Development positions began to appear more regularly on the charts. Florida, Iowa and Kentucky had this unit and named it "development office", "development", and "development assistant" respectively. Planning appeared as a separate responsibility in Iowa.

Staff officers dealing with personnel, budgeting, systems, maintenance and public relations were common in both periods. To reflect an increasing need for strategic and long-range planning, as well as ongoing changes in academic library management and operations, new division such as "planning" and "development" were assigned as a specific function in the charts of the years 1990-92.

**F. Title and Reporting Line of the Director**

According to the "scalar principle", the more steps required to go up to the top of the academic hierarchy, the less the access to the center of decision making possessed by the head librarian. In 1970-72, three out of five Directors of libraries reported directly to the vice president/chancellor for academic affairs. The University Librarian of Iowa reported to the Dean of Library Administration who then reported to the Provost. In this case, the University Librarian of Iowa had one more step than the other libraries to reach the Provost. The organization chart of Rochester focused only on the library and did not include any reporting line for the Director.

Four of the five libraries named the head librarian the "Director of Libraries". Only Iowa called the top administrative position "University Librarian". The title "Director of Libraries", rather than "Director of Library", really meant that he/she had won the struggle for centralized
administration.

In looking at the reporting lines of the director for four of the five libraries (there is no indication for Rochester) in 1990-92, Florida, Iowa, and Kansas all reported through academic affairs lines. The director of Kentucky reported to the Vice President for Information Systems.

Kansas had the word ‘‘dean’’ in the library director’s title. Florida, Kentucky and Rochester were called ‘‘director’’. Iowa named the library director the ‘‘University Librarian’’.

Most directors reported two steps away, through academic affairs, from the University President in both 1970-72 and 1990-92. In addition to the ‘‘director of libraries’’ and ‘‘university librarian’’, the title ‘‘dean’’ has been introduced as an alter nature for the library director title.

VI. CONCLUSIONS

The organization charts are based on the hierarchical concept and are designed to show the relationship of one organizational unit to another through lines of authority.

The number of management levels of academic libraries is a real reflection of Fayol’s ‘scalar chain’ principle. In general, the number of management levels tends to be larger in 1990-92. Weber’s ‘bureaucratic model’ that characterized the hierarchical structure is supported from this organization charts analysis. Through the analysis of organization charts, Gulick and Fayol’s ‘span of control’ of the library director and associate/assistant director can also be readily detected. The span of control of director and associate or assistant director of academic libraries varies across organizations in both periods.

Fayol’s ‘division of labor’ theory has been an accepted principle for organizing library work that is also reflected in the study of organization charts. The academic libraries investigated in this study were organized by a combination of function (acquisitions, cataloging, circulation, reference, etc.), subject (chemistry library, business library, history library, etc.), and form of materials (audio-visuals, maps, documents, etc.). This organization structure appears to be the most lasting and consistent method no matter what period was studied.

It is realized that this study is limited
by the data source--primarily organization charts, and the sample size may not be large enough to draw a conclusion definitely. The patterns of organizational change in these five libraries, however, indicate some of the important trends over the period under study.

In 1970-72, organization charts were mostly hierarchical and nearly all the library charts examined in 1990-92 continued to display a basically hierarchical structure also. While many of the 1990-92 charts indicate that academic libraries continue to be organized around traditional functions, most include more functions than twenty years ago, and many show units that have been moved around or renamed. Obviously, to a considerable degree the structures are basically similar. The core in each instance was composed of functions and steps in the sequence from acquired materials to satisfied reader. The standard library functions have proven themselves over time. Some charts reflect the growing importance of specific functions over the past twenty years. Obvious examples include development, interlibrary loan, preservation, collection development/management, planning, and automation.

In addition to traditional functional divisions, other departments and smaller units organized by different principles also can be found. For example, departmental libraries serve subject areas and academic interests, while microform departments reflect a division of work based on the form of material.

Iowa seems to have begun to change their structures in a way that breaks down the barriers between the traditional functional divisions. But there is very little evidence that most libraries are willing to discard more traditional structures except perhaps to change the title assigned to these areas, or to add some new departments.

Lots of criticisms of bureaucratic management, hierarchical structure, scalar principle, and chain of command have appeared since the emergence of these theories. Yet despite such criticisms, libraries still utilize bureaucratic structure and examine the role of the formal hierarchy by organization charts. Since academic libraries have been traditionally structured, their organization charts have changed relatively little over the past twenty years. From this study, we can see that academic libraries still depend heavily on
Weber, Fayol and Gulick's classical theories for the bases of their formal organization.

It must be understood that organization charts are limited in what they do. The organizational structure gives one view of an organization's operations. Other methods of data collection would be required to test the accuracy of it as a guide for communication and decision making within the organization.

The future study of this kind with larger samples and more data sources would surely improve our understanding of the organizational patterns and behavior of academic libraries.

REFERENCES


15. Ibid., 59.


20. Ibid.


22. Ibid., 67.

Appendix A (2)

The University of Iowa Libraries
Iowa City, Iowa

Coordinator of Automated Library Services
(1/3 time)

Dean of Library Administration

Assistant University Librarian
Reader Services

Circulation
Bookstacks
Browsing
Extension
Photoduplication
Reserve

Government
Documents

Reference
Interlibrary Loans

Special Collections
Exhibits
Manuscripts
Maps
Rare Books
University Archives

Acquisitions
Gifts
Orders
Book Repair

Cataloging
Monographs
Reclas.

Serials
Acquisitions
Binding
Cataloging
Exchanges

Law Library administered by College of Law
Appendix A (4)

ORGANIZATION OF UNIVERSITY LIBRARIES
UNIVERSITY OF KENTUCKY

TRUSTEES

PRESIDENT

VICE PRESIDENT
ACADEMIC AFFAIRS

DIRECTOR OF LIBRARIES
ASSOCIATE DIRECTOR

SENATE ADVISORY
LIBRARY COMMITTEE

ASSISTANT TO THE DIRECTORS

ASSISTANT DIRECTOR
FOR PUBLIC SERVICES

DEPARTMENTAL LIBRARIES

ARCHITECTURE

BIOLOGICAL SCIENCE

CHEMISTRY-PHYSICS

MATHEMATICS

FINE ARTS

GEOLGY

ENGINEERING

EDUCATION

CIRCULATION

RESERVE COLLECTION

STORAGE COLLECTION

PUBLIC COPY SERVICE

CURRENT PERIODICALS READING ROOM

REFERENCE

GOVERNMENT PUBLICATIONS

NEWSPAPERS & MICROTEXT

AGRICULTURE LIBRARY

LAW LIBRARY

SPECIAL COLLECTIONS

ARCHIVES

ASSISTANT DIRECTOR
FOR TECHNICAL SERVICES

ACQUISITIONS

CENTRAL SERIALS RECORD

CATALOGING

CARD REPRODUCTION

BINDING PREPARATION

MEDICAL CENTER LIBRARY

VICE PRESIDENT MEDICAL CENTER
Appendix A (5)

UNIVERSITY OF ROCHESTER LIBRARY
Appendix B (1)

THE UNIVERSITY OF FLORIDA LIBRARIES

University Libraries Committee

Provost and Vice President for Academic Affairs

Director of Libraries
(Debra Canolas)

Assistant Director for Library Support Services
(Carolyn Henderson)

Business Services Office
(Barbara Oliver)

Library Facilities Planning Office
(Steve Grube)

Library Personnel Office
(Wendy Scott)

Assistant Director for Public Services
(Carol Turner)

Access Services Department
(Rich Bennett)

Documents Department
(Jan Swanbeck)

Humanities and Social Sciences Reference Department
(Christina Mansor)

Architecture and Fine Arts Library (Ed Teague)
Education Library
(David Shontz) (Acting)
Music Library
(Roberta Cornwell)

Marston Science Library
(Carol Drum)

Interlibrary Loan Unit
(Lawrence Freund)

Journalism Reading Room
(Priscilla West)

Map Library
(Helen Jane Armstrong)

Department of Collection Management
(Sam Gowan)

Department of Special Collections
(Bernard McTigue)

Development Office
(Barbara King)

Associate Director for Collection Management
(Sam Gowan)

Department of Collection Management
(Sam Gowan)

African Studies
(Peter Malanchuk)

Humanities Collections
(Frank DiTilio)

Jewish Studies
(Bob Singerman)

Latin American Studies
(Rosa Mass-Bibliographer)

Peter Sten-Librarian

Science Collections
(Barry Hartigan)

Social Sciences Collections
(Ray Jones)

Architecture and Fine Arts Collections
(Ed Teague)

Music Library
(Roberta Cornwell)

Documenta Collections
(Jan Swanbeck)

Maos
(Helen Jane Armstrong)

Assistant Director for Technical Services
(Martha Huska) (Acting)

Acquisitions Department
(Doima Farkas)

Catalog Department
(Dot Hope) (Acting)

Preservation Office
(Erich Kesz)

Systems Office
(Bill Covey)

University of Florida
Appendix B (3)

UNIVERSITY OF KANSAS LIBRARIES
ORGANIZATIONAL CHART
Appendix B (5)

Rush Rhees Library
University of Rochester
River Campus Libraries
Organization Chart

Director of
University Libraries

Asth. Director
for Technical
Services

Collection
Development

Friends of the
UR Libraries

Manager Admin
Services / Personnel
Officer

Building / Mall
Assistants

Clerical
Staff

Catalog

Acquisitions

Preservation

Serials and
Binding

Copy
Cataloging

Catalog
Maintenance

Access
Services

Rare
Books

Reference

Science &
Engineering
Libraries

Circulation / Information
Desk

ILL / Photocopy

Stacks

Asia
Library / Map Ctr

Gov Docs / Micro Ctr

Art
Library

General
Reference

Management
Library

Robbins
Library

Mag

Carlson
Library

Physics / Optics / Astronomy
Library

LLE