A framework has been developed based upon concepts drawn primarily from organization theory and small group research. Emphasis has been placed upon the response of libraries to their environments. The library "stake out claims" or establishes domains with regard to resources, users, and policies. Libraries then seek to have the environment acknowledge the validity of these claims. This process of establishing "domain consensus" is a critical activity of organizations and is a prerequisite for the formation of cooperatives. Contributions from the theory of coalition formation were utilized in order to conceptualize the process of library cooperative formation. Interaction between organizations has been viewed as an exchange system into which libraries enter because they expect to receive benefits in exchange for the resources they contribute. Two aspects of the exchange system were considered. The process of formation was examined, followed by an examination of some variables which affect the policies and performances of established systems. Tables 1 and 2 summarize the parameters and the manner in which each parameter affects the system. (Author)
TOWARD AN UNDERSTANDING OF LIBRARY COOPERATIVES

AS ORGANIZATIONS

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TOWARD AN UNDERSTANDING OF LIBRARY COOPERATIVES AS ORGANIZATIONS

I. Introduction

For almost one hundred years the advantages of cooperation have been heralded in library literature; the "golden age of cooperation" has been "just around the corner". The realities of library cooperation, however, have never fulfilled the expectations which so many in librarianship have seen for so long in the ideal. Today some see hope in the advance of technology; others are less sanguine about looking to technology for solutions to problems which seem, in part, to be behavioral and organizational.

In this paper some of the organizational and behavioral aspects of library cooperatives will be examined. The objective of the paper is to develop a conceptual framework based upon organizational theory and small group research. The framework will be constructed in two parts. The first part will discuss organizational prerequisites to the establishment of library cooperatives. The second part will describe some factors which will influence the policies and performance of cooperatives. The concepts developed will be useful insofar as they provide a perspective from which existing cooperatives can be studied and insofar as the theory is capable of being verified empirically. To direct attention toward this latter goal, a series of empirical propositions will be set forth. Some of these propositions are descriptive; others are predictive. The descriptive propositions establish the dimensions of the variables. The predictive positions build upon the descriptive to prescribe or predict future states or events. Both types serve the function of directing attention from the conceptual to the empirical; they will, however, be distinguished by type.

To an area in which words already have so many meanings, one hesitates to add yet others. For the purposes of this paper, however, some distinctions
are necessary. **Library networks** here refer to the actual flow on transactions which take place between institutions, and include the elements transmitted and the means by which transactions take place. **Library cooperatives** refer to organizational arrangements and include the social, political and economic parameters of institutional organization and interaction.
II. Organizational Interaction as Exchange

The last decades have witnessed the development of theory and research in administration, organization theory and the empirical study of organizations. Although few would claim that a "science" now exists, there is a body of scholarship which has increased our understanding of many institutions including hospitals, schools, prisons and government agencies. The library could and should be studied for the mutual benefit of scholars, librarians and libraries.

Traditionally, organization theorists have held either a "rational" view of organizations or a more "open" and indeterminate one. The rational model has emphasized formal structure and organizational effectiveness, whereas the more "open" view has concentrated upon informal patterns and outside pressures. There is a more recently developed position, advanced by such men as Simon, March and Cyert, that attempts to avoid the traditional dichotomy by studying organizations as "problem-facing and problem-solving phenomena". A central problem which faces a complex organization is coping with uncertainty from technology and from the environment. In order to cope with uncertain forces in the environment, organizations attempt to "seal off" and protect themselves from these perturbations. The library can be viewed as an example of an organization which must resort to a relatively ineffective means of protecting itself from fluctuations in the environment. When libraries ration their book loans, their acquisitions, and their user services, they do so because they are unable to meet demands in any other way.

If the activity and structure of organizations is directed toward gaining as much independence from and control of the environment as possible, an organization will prefer to incorporate all crucial elements and to reach out to the environment only when objectives cannot be fulfilled internally. According to
this view of the organization, such inter-organizational arrangements as library cooperatives arise because each library is unable to meet its needs by acting alone. Such a position is held by Levine and White. In their study of community health agencies, they suggest that scarcity forms the basis of organizational interactions.

"Theoretically...were all the essential elements in infinite array, there would be little need for organizational interaction or subscription to cooperation as an ideal. Under actual conditions of scarcity, however, interorganizational exchanges are vital to goal attainment."3

An exchange model suggests that a group of libraries will establish a library cooperative when each library believes that it will receive some benefit thereby facilitating its attempt to meet its needs.

Descriptive Proposition 1: All component elements contain a set of positive expectations regarding net outcomes in relation to costs and benefits. When a library enters into a cooperative arrangement, it anticipates that elements or resources will be received that will enable the library to meet its needs. These elements or resources are called "payoffs", "expectations" or "outcomes" and provide an index of expectations.

The study of expectations is crucial; it is against each library's expectations that the performance of an exchange system can be evaluated. The definition, ranking and quantification of expectations must have high priority. An instrument can be designed to elicit a variety of information about expectations. It should be directed towards technological and economic as well as social and organizational expectations and should include the present and the future expectations.
The notion of interorganizational exchange provides the basis for the analysis of library cooperatives which follows. In a sense, two analytic schemes will be developed. The first examines the prerequisites for exchange and views the formation of library cooperatives as an example of coalition formation. The second scheme examines the cooperative as an established entity, while it retains the analytic perspective of the individual components and describes some factors which determine policy and performance.

A. Organizational Domain

Before an exchange system can be established, an agreement of some kind must be entered into. This agreement is analogous to a multi-party contract but can only be executed in selling of prior charters which are, in turn, analogous to a contribution. This agreement must be based upon an understanding of what each organization does, what each organization wants and what each organization can provide. The basis for this understanding lies in the organizational domain. An organizational domain is defined as:

"...the claims which an organization stakes out for itself in terms of (1)...range of products ... (2) population served, and (3) services rendered."5

The establishment of an organizational domain is a dynamic process; domains must be defended by carrying out the claims made. The prior commitments, obligations and rights of each organization are involved in the process of establishing and defending the organizational domain.

A library's domain will consist of the claims which it makes about the nature and extent of its resources, the user groups which it serves and the services which it provides. The concept of domain will permit libraries to be
differentiated in a variety of ways. Traditionally libraries have been classified as "academic", "school", "special" and "public". This may be an accurate distinction of user groups served; it may not, however, be a useful way to characterize libraries when studying policy or resources. What traditionally have been called the "objectives" or "goals" of organizations can also be evaluated by use of the concept of domain. Analysis of organizational domain directs attention away from the frequently vague "official goals" and toward the more important " operational" goals. Operational goals have been defined as:

"...the ends sought through the actual operating policies of the organization; they tell us what the organization actually is trying to do, regardless of what the official goals say are the aims."

Descriptive Proposition 2: Libraries can be characterized in terms of:

(1) nature and extent of resources, (2) population or user group served, and (3) user service policies. This will provide a description of the library's domain.

The User Service Policy Inventory developed by E. Olson and others might be used, at least in part, for the purpose of defining and quantifying aspects of a library's domain. One major problem to be resolved is the selection of respondents. Thompson, for example, suggests that dominant coalitions within each organization determine organizational domain claims.

B. Domain Consensus

The claims which an organization stakes out for itself do not become effective until they are acknowledged by the environment. When these claims are accepted, it is said that domain consensus has been established. A library's claims about collection strengths, primary user groups served or special services offered, will not be effective until they are acknowledged by the environment.
Descriptive Proposition 3: A library can characterize the libraries with which it interacts in terms of (1) nature and extent of collection, (2) population or user group served and (3) user service policies. The extent to which there is agreement between Proposition 2 and the above is an index of the degree to which domain consensus has been established between libraries.

Levine and White believe that an exchange system cannot be established without the existence of at least a minimal degree of domain consensus. They believe that the establishment of domain consensus is so vital because it:

"...defines a set of expectations, both for members of an organization and for others with whom they interact, about what the organization will and will not do. It provides, although imperfectly, an image of the organization's role in a larger system, which in turn serves as a guide for ordering of action in certain directions and not in others."
C. Coalition Formation

The importance placed by Levine and White upon the establishment of domain consensus suggests that the processes which occur prior to agreement should be studied closely. Although there have been few theoretical analyses by students of organizational behavior, there does exist a body of theory and research which can provide some useful insights. The theory of coalition formation addresses itself to understanding many of the processes which take place before an agreement is entered into.

A coalition may be defined as the joint use of resources by two or more individuals to affect a decision. In the theory of coalition formation, each participant is attempting to maximize his share of the payoff (see Proposition 1), but there is no single alternative which will maximize the payoff for all participants; this condition has been described as a "mixed-motive" situation. It is a condition in which there is neither pure cooperation nor pure competition. In a cooperative situation, there is complete agreement about what the desired payoffs should be, and in a competitive condition there is complete disagreement about expectations.

Descriptive Proposition 4: The expectations anticipated by each library (Proposition 1) can be compared. The results can be characterized along a continuum ranging from cooperative to competitive. The mixed-motive position will reside between these extremes. The position along this continuum will provide an index of motive to coalesce.

The index of motive makes it possible to predict something about the likelihood that an exchange agreement will be entered into.
Predictive Proposition 5A: If a cooperative situation exists, the libraries will enter into an agreement with little additional negotiation about the distribution of resources; each library will receive the payoff anticipated.

Predictive Proposition 5B: If a competitive situation exists, the chances are small that an agreement will be entered into.

Predictive Proposition 5C: If a mixed-motive situation exists, the basis for bargaining and negotiation about the distribution of resources exists.

Researchers have been somewhat successful in predicting coalition formation in tightly controlled small group experiments. In order to predict the formation of cooperatives among groups of libraries, it would be necessary to obtain information about the distribution of relevant resources. The crucial consideration is not the total resources of a participant, but only those resources which are relevant to the desired outcomes. For a library, relevant resources may range from a pick-up truck to a computer, from access to a special user group to the availability of funds.

Descriptive Proposition 6: Libraries can be characterized by the kind and amount of relevant resources that they control. This will provide an index of relevant resources.

Information will also be needed about the payoffs for each of several alternative coalitions or conditions available. Other things being equal, a library will join a cooperative if the payoff expected (Proposition 1) exceeds
the payoffs from alternative expectations.

**Descriptive Proposition 7:** Libraries can characterize the payoffs they would receive from other alternatives, including the status quo. This will provide an index of alternative expectations.

Gameson describes another variable which he calls "non-ultilitarian strategy choices". These involve social and political variables and concern the library's inclination to join a cooperative regardless of resources. The intrinsic value placed upon "cooperation" may make a library willing to join a cooperative even though the library's own needs do not require membership. The prestige of belonging to a cooperative, the authority or influence which a particular library administrator may exert, the power or leadership which a library or library administrator may wish to acquire, the desire to expand domain: each of these is an example of a "non-ultilitarian strategy choice".

**Descriptive Proposition 8:** An estimate can be obtained of those factors which make joining a cooperative attractive regardless of the resources involved. This will provide an index of non-ultiltarian strategy choice.

Without Proposition 8, a relatively simple cost-benefit type of analysis could have been proposed. With the introduction of the notion of "non-ultilitarian strategy choices" the importance of social and political factors is emphasized.

**Predictive Proposition 9:** The resultant of the indices obtained from:

- Proposition 1: Index of expectations
- Proposition 7: Index of alternative expectations
- Proposition 6: Index of relevant resources
Proposition 8: Index of non-utilitarian strategy choices will provide for each library an index of the desirability of entering into an exchange agreement. The arithmetic combination will predict predisposition to coalesce.

The notion that the formation of library cooperatives can be viewed as a process of coalition formation does seem to be a useful conceptualization. It focuses upon component elements and processes. In the fluid state of library cooperation today, this focus may provide insights which concentration upon the structure of networks as a single entity may overlook.

This theoretical view must be transformed into empirical analysis. Research must be directed toward studying the relationship between expectation and resources and must systematically investigate the role of "non-utilitarian strategy choices". Until these relationships are more clearly understood, a notion such as "index of desirability" will explain little.

Each of the parameters involved in formation -- motive (Proposition 4), resources (Proposition 5), expectations (Propositions 1 and 6) and non-utilitarian strategy choices (Proposition 7) -- could be investigated in existing cooperatives or in cooperatives in the planning stages in the field. A series of interviews and questionnaires could probe the relationship between these parameters. Hypotheses could be developed which relate the policies and performance of the cooperatives to these parameters.

Another potentially fruitful approach lies in the manipulation of variables in a laboratory situation. Either traditional small group analysis techniques or some of the newer techniques of gaming and simulation could be employed. This could lead to the refinement of hypotheses to be tested in the field. The "non-utilitarian choice" parameter, which might become a waste-basket for elements which cannot be measured or counted easily, could be system-
atically studied in a laboratory situation. Specific hypotheses could be generated from findings of small group research. Results of experiments in cohesiveness, authority, leadership, influence and communications can provide the basis for hypothesis-testing.
IV. Determinants of Exchange

This section examines the determinants of exchange among the component elements of an already-established cooperative. As described in the preceding sections, the assumption is that there is a significant probability that a library cooperative will be established when domain consensus has been established, a cooperative or mixed-motive situation exists, and when there is a proper relationship between resources, expectations, and non-utilitarian strategy choices. If formation of a cooperative does occur, a number of factors will affect the performance and policies of the exchange system. Parameters relating to the configuration of the cooperative and to its effectiveness and efficiency will be identified and described.

A. Range and Direction

A library's domain is defined by the claims it makes about the nature and extent of its resources, the population which it serves and the kind and quality of services it offers. (Proposition 2). The domain of each library in a cooperative will determine the range and direction of exchanges within the system. The National Library of Medicine and the National Institutes of Health Library serve different populations. This difference influences the range of exchanges which each library will undertake. The N.I.H. Library primarily serves the scientists employed by the various institutes; it will lend to them or borrow for them. The National Library of Medicine serves a national constituency of individual users and medical libraries.

Descriptive Proposition 10: Exchanges within a library cooperative can be categorized by the variety and extent of (1) resources exchanged, (2) populations exchanged and (3) services exchanged. This will provide a description of the range
of the exchange system.

The direction in which the exchanges occur will also be affected by the library's domain.

**Descriptive Proposition 11:** Each exchange within the system can be categorized according to Levine and White's schema:

- **(a) Unilateral:** where elements flow from one organization to another and no elements given in return.
- **(b) Reciprocal:** where elements flow from one organization to another in return for other elements.
- **(c) Joint:** where elements flow from two organizations acting in unison toward a third."

This will provide a description of the direction of the exchanges.

The National Institutes of Health Library probably engages in more unilateral exchanges, whereas the National Library of Medicine probably engages more frequently in (b) and (c). The kind and extent of variations in both direction and range should be studied empirically. The effect which these variations have upon the policies and performances of individual libraries and library cooperatives must also be studied.

B. Dependence

When a library has needs which cannot be met independently, the library will reach into its environment for resources. Whether the library reaches into a cooperative or toward resources outside of the exchange system will affect relationships within the system. A corporation library, for example, may have access to resources from other divisions of the corporation; this will affect the degree to which the corporation library is dependent upon a system of local
research libraries to which it may belong.

**Descriptive Proposition 12**: Each exchange of resources, populations and services can be characterized as "internal" or "external" to the cooperative system. The degree to which each library is engaged in internal exchanges will provide an index of dependence upon the cooperative. Differences in dependence will affect the number of exchanges that take place; the effect of varying amounts of exchanges should be empirically determined.

There is an interesting model which might be applied to the index of dependence. Elling and Halebsky studied the support structure of a group of hospitals. They obtained three indices: number of patients, sources of funding and extent of community participation which they combined into a "general index of support". By using a similar scheme to compare internal dependence and external dependence for libraries within a cooperative system, an index of dependence might be obtained which would be more sophisticated than that obtained by simply counting the number of internal and external exchanges.

**C. Structure**

Particularly in the early stages of cooperative formation, each library in a cooperative must be able to deal with the changes brought about by entry into the system. Either new departments will be created or old ones will assume new responsibilities. Some of these departments will interact with the exchange system. The departments which deal with the cooperative will be examples of what Thompson has called "boundary-spanning units". A "boundary-spanning unit" is, in general, any department or division which must interact with some portion
of the environment. According to Thompson:

"The crucial problem for boundary-spanning units...is...adjustment to constraints and contingencies not controlled by the organization..."17

Constraints and contingencies arise from the environment. As the environment becomes more heterogeneous, the number of constraints will increase. These increased constraints will require that more boundary-spanning units be created. An undergraduate library in a small liberal arts college, for example, can have fewer divisions that deal with students than a large university library. In the larger library, the environment is more heterogeneous; that is, there will be more academic and professional departments to be served.

The more dynamic and shifting the environment, the greater will be the contingencies the library must face. Units which deal with a relatively stable environment will tend to be standardized, "rule applying and rule enforcing units". As the environment becomes more dynamic, however, the boundary-spanning units must become concerned with study and planning if they are to deal effectively with the environment.

**Predictive Proposition 13:** Boundary-spanning units in a library can:

1) be identified.
2) be characterized as facing an environment along a continuum from "stable" to "shifting".
3) be characterized along a continuum from "standardized" to "planning oriented".

The degree to which 13-2 corresponds with 13-3 will provide an index of the degree to which the boundary-spanning unit is structured to deal effectively with
The relation between boundary-spanning units and the environment is merely one part of the larger issue of the relation between organizational structure and organizational response to the environment. The variables suggested by Thompson might initially be approached in an anthropological case study mode. Investigation could focus only upon those boundary-spanning units which deal with the library cooperative. This type of study could suggest hypotheses to be tested in the laboratory or in the field.

The acquisition process is one which might be studied as an example of a boundary-spanning activity. Written policy statements, interviews and records of transactions could be used to determine the degree to which a department can be characterized as "standardized". The environment of each department could also be characterized in terms of the degree to which it is shifting or stable. A number of indices might be developed including changes in users and the nature and source of the core of the library's collection.

The findings might result in a table like the following:

<table>
<thead>
<tr>
<th>Environment</th>
<th>Stable</th>
<th>Shifting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardized</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Not Standardized</td>
<td>NO</td>
<td>YES</td>
</tr>
</tbody>
</table>

A standardized acquisition process in a shifting environment or a non-standardized process in a stable environment would indicate a lack of effectiveness. A non-standardized acquisition process in a shifting environment or a standardized process in a stable environment would indicate that the acquisitions department was dealing effectively with its environment.
D. Domain Consensus

Levine and White believe that a minimal degree of domain consensus (Proposition 3) is necessary before an exchange system can be established. They also believe that the degree to which domain consensus has been established will affect the efficiency of the system. This implies that when libraries in a cooperative can agree which of the members has special competencies, those most capable in a particular area will be encouraged to perform that service or function for the entire cooperative. This is an oversimplification, of course, of the process which can lead to the much-heralded "elimination of duplication" reputedly desired by many organizations.

If libraries in a cooperative do desire to become more efficient through cooperative arrangements, close attention must be given to the organizational requirements. Although the establishment of a high degree of domain consensus may be necessary, it is not a sufficient condition in itself for the creation of an efficient system. Indeed, in the process of eliminating duplication, a library's domain may be faced with restriction or expansion. The agreement to centralize a service, for example, may result in greater dependence upon the environment. An activity that once, at least in part, was provided by the library itself, will be assumed either by another library in the cooperative or by a newly created unit. In such a situation, the library is faced with restricting its domain. If, on the other hand, a library is assuming the responsibility of providing a new service or resource to its own users or to other libraries, it is faced with expanding its domain. In either case, the internal effects upon the library as an organization should be carefully studied and related to the difficulties involved in establishing centralized services and eliminating duplication.
Returning once more to the acquisition process, the establishment of any form of centralized acquisitions will depend, initially, upon the degree to which there is agreement among the libraries not only about what to purchase, but also about what demands each library will make. If agreement can be reached, the environment can be analyzed, as described in the preceding section, so that appropriate acquisitions procedures can be established.
V. Summary

A framework has been developed based upon concepts drawn primarily from organization theory and small group research. Emphasis has been placed upon the response of libraries to their environments. The library "stakes out claims" or establishes domains with regard to resources, users, and policies. Libraries then seek to have the environment acknowledge the validity of these claims. This process of establishing "domain consensus" is a critical activity of organizations and is a prerequisite for the formation of cooperatives. Contributions from the theory of coalition formation were utilized in order to conceptualize the process of library cooperative formation.

Interaction between organizations has been viewed as an exchange system into which libraries enter because they expect to receive benefits in exchange for the resources which they contribute. Two aspects of the exchange system were considered. The process of formation was examined, followed by an examination of some variables which affect the policies and performances of established systems. Tables 1 and 2 summarize the parameters and the manner in which each parameter affects the system.
### TABLE 1

**ORGANIZATIONAL PRÉREQUISITES FOR THE ESTABLISHMENT OF AN EXCHANGE SYSTEM**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Condition Required for Establishment</th>
<th>Proposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Domain Consensus</td>
<td>Must be established</td>
<td>3</td>
</tr>
<tr>
<td>2. Motive</td>
<td>Must be &quot;cooperative&quot; or mixed-motive</td>
<td>4</td>
</tr>
<tr>
<td>3. Resources</td>
<td>Must be relevant to objectives</td>
<td>5*</td>
</tr>
<tr>
<td>4. Expectations</td>
<td>Must both 1) exceed or equal amount of resources put into the system and 2) exceed expectations from other alternatives</td>
<td>1*, 7*</td>
</tr>
<tr>
<td>5. &quot;Non-utilitarian strategy choices&quot;</td>
<td>Must either 1) reinforce the ratios described in 4-1 and 4-2 or 2) be strong enough to overcome the negative ratios in 4-1 and 4-2</td>
<td>8*</td>
</tr>
</tbody>
</table>

* the resultant of these indices yields an "index of desirability" (Proposition 9).
TABLE 2

PARAMETERS WHICH AFFECT PATTERNS OF INTERACTION IN AN EXCHANGE SYSTEM

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Patterns of Interaction</th>
<th>Proposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Domain</td>
<td>Affects range and direction of interaction</td>
<td>2, 12, 13</td>
</tr>
<tr>
<td>2. Dependence</td>
<td>Affects amount of interaction</td>
<td>10</td>
</tr>
<tr>
<td>3. Domain Consensus</td>
<td>Affects efficiency of interaction</td>
<td>3</td>
</tr>
<tr>
<td>4. Structure</td>
<td>Affects effectiveness of interaction</td>
<td>11</td>
</tr>
</tbody>
</table>

The major focus has been upon the components that make up the cooperative as a discrete entity. The parameters have been described separately and general suggestions for the direction of empirical research have been made. This has been a macroscopic analysis in conceptual terms; the next step is to translate it into testable research strategy for understanding library cooperatives.
FOOTNOTES


2. Many organization theorists, including Thompson, distinguish between the environment and the task environment. The task environment, as the name implies, refers to all elements immediately relevant; all else is residual. "Environment" is used in this paper in the "task environment" sense.


8. Ibid., p. 29.


10. See for example work by Caplow, Chertkoff, Gameson and Mills.


12. Ibid.

13. See for example work by Bass, Cartwright, Collins and Guetzkow, Collins and Raven, Emerson, Exline, Shaw and others.


15. Ibid.


20. The implications of a restriction in domain - either real or threatened - have not been examined in this paper. This issue is of vital concern to many administrators and should be thoroughly studied.
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