Catherine Marsicek. A Cost-Effectiveness Study of the Latin American and Iberian Serial Exchange Program at the University of North Carolina at Chapel Hill. A Master's paper for the M.S. in L.S. degree. June, 1999. 43 pages. Advisor: Jerry D. Saye.

This study determines the cost-effectiveness of acquiring Latin American and Iberian serials through exchange programs at the University of North Carolina at Chapel Hill. By weighing the cost of the serials and personnel needed to maintain the program against the financial value of the items received, the Latin American and Iberian serial exchange program was found to require more resources than it provides. The overall results of the data indicate a skewed financial advantage favoring the foreign universities, institutions and organizations. Recommendations are made to eliminate the ineffective parts of the program or to dedicate staff and resources to streamline the program.

Headings:
College and university libraries--Serial publications
Exchange of books, periodicals, etc.--Time and cost studies
Serial publications--Subscriptions
University of North Carolina at Chapel Hill--Libraries

## A COST-EFFECTIVENESS STUDY

OF THE LATIN AMERICAN AND IBERIAN SERIAL EXCHANGE PROGRAM AT THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

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#### Abstract

A Master's paper submitted to the faculty of the School of Information and Library Science of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Science in Library Science


Chapel Hill, North Carolina
June, 1999

Approved by:

Advisor

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## INTRODUCTION

Originally hailed as an answer to financial problems and collection developer's woes, international serial exchanges were once aggressively initiated and maintained in many U.S. institutions. In the past several decades, however, these efforts have fallen out of favor. Now seen as problematic and time-consuming, many libraries and institutions are rethinking their exchange programs. Although some institutions are still dedicated to their well-established international serial exchange programs, more and more are neglecting and abandoning their programs. The Academic Affairs Library (AAL) at the University of North Carolina at Chapel Hill (UNC-CH) is no exception; it too is following the national trend of reconsidering the importance of its serial exchange programs.

The Academic Affairs Library of the University of North Carolina at Chapel Hill maintains a variety of serial exchanges with institutions, organizations and universities in Latin American, Spain and Portugal as a way of enhancing its serial collection in these areas studies. The Latin American and Iberian Resource Center (LAIR) of the Collection Development Department in the AAL sends a foreign institution one or more serials published by the University or by a unit associated with it and receives one or more publications in return from the foreign institution.

An extensive Latin American and Iberian serial collection is vital for the AAL, especially since it has been designated as a Title VI National Resource Center for Latin American Languages and Area Studies by the U.S. Department of Education. The
method of acquiring these serials by exchange, however, is a cause for serious debate among library administrators and personnel. Once seen as an economically efficient way of obtaining serials and of acquiring materials not available by subscription, exchange programs have been neglected in the last twenty years. In 1979 LAIR lost the staff position that was responsible for all exchange tasks, while the AAL's non-area exchange program also suffered a major setback with the loss of the Gift and Exchange Librarian position in the early-1980s. This neglect is often a result of the perception of administrators that exchange programs are not fiscally sound. Many who work in the Serials Department and the Collection Development Department also see them as timeconsuming and thus a low priority in the daily workflow. Yet this unenthusiastic view of the exchange programs at the AAL is based on perception and not on any factual study performed on these programs.

In a time of lean library budgets and staff cuts, all programs need to be periodically reevaluated. A case study of the cost-effectiveness of the Latin American and Iberian serial exchanges is needed. There are many factors that make this exchange program appear less beneficial than it used to be. Not only have there been glaring staff cuts, but the program also lost many of its free subscriptions to several UNC serials sent on exchange to foreign institutions, thus making the amount spent on materials higher than before. During a thorough review of the Latin American and Iberian exchange arrangements in 1998, it was also found that many institutions with which LAIR has agreements have either stopped sending their publication to UNC-CH or their serial has ceased publication.

Is the AAL saving money by receiving these serials on exchange, or would it be more financially resourceful to subscribe to them? After factoring in the cost of the serials that AAL sends, as well as the personnel costs needed to maintain such a laborintensive program, is there a negative or a positive monetary balance? This study statistically documents the need for a reevaluation of the Latin American and Iberian serial exchange program.

## A REVIEW OF THE LITERATURE

The discussion and evaluation of foreign serial exchange programs in the library literature has changed over the past several decades. There is a noticeable progression in the literature from earlier articles that discuss the rationale for establishing exchanges to their more recent evaluation based on financial factors.

Much of the available literature that documents the initiation of exchange programs focuses not only on the economic reasons, but also the intangible benefits, for establishing exchanges. Laurence J. Kipp, in a report on the exchanges of the U.S. Government with Latin America, states that institutions used exchange as a method of acquisition because it was "a means of distributing its own publications and of sharing its achievements [and out of] national pride, concern for the welfare of other nations, and economy" (1950, p. 3). Alfred H. Lane (1952), the Supervisor of the Gift and Exchange Division of the Columbia University Libraries, recognized that exchanges also foment good will and the development of strong scholarly connections that might prove beneficial in obtaining other needed materials.

Until recently, many libraries did not concern themselves with fiscal responsibility when it came to international serial exchange programs. Actual assessments of the monetary equality of such exchanges were considered of little importance. In the 1960s money was abundantly available and there was a great commitment on the part of many universities to expand their international studies programs, and thus their international serial collections. Exchanges were viewed "as a
generous gesture on the part of affluent libraries, assisting those less fortunate" (Bluh \& Haines, 1982, p. 153). Cost was not always a factor in establishing new exchanges. By the 1980s, however, libraries began to suffer from lean budgets and financial austerity and could no longer afford to manage programs that were not cost-effective.

In the last three decades, there has been increased attention focused on the subject. William Huff summed up the problem succinctly when he mused whether "exchange units are really functional today or if they are vestiges of an era when people could devote more time to shepherding gift and exchange relationships" (1970, p.308). The perceived problems of exchange (i.e., labor-intensive, non-receipt of items, unfair exchanges) have forced many institutions to review and justify their continued exchange programs. The marked increase in the literature on the subject is a direct result of these program reviews. However, there is still a general consensus in the literature that "more precise, detailed and systematic studies of the monetary costs and benefits of exchange operations" (Galejs, 1972, p. 519) need to be performed to determine the effectiveness of such programs. In 1978 Kovacic also called for more studies:

It would be extremely helpful if a number of reliable cost-effective studies would be done at those libraries where such studies have not previously been conducted. Several comparative studies between the cost of acquiring gift and exchange material and the cost of acquiring ordered material would also be very useful (p. 74).

Not surprisingly, the results of the surveys, both quantitative and qualitative, that have been performed on exchange programs differ widely. Although many studies found exchanges to be cost-effective, several institutions found them to be ineffective methods of collection development. In the broadest study to date, Mark Kovacic studied the Gift and Exchange Programs of eighteen academic libraries in 1978. By focusing on cost
studies and staffing patterns at these universities, he concluded that "with a sound policy, effective organization and effective processing procedures, gifts and exchanges can be a cost effective means for acquiring valuable research material for academic libraries" (p.62). There were professional Gift and Exchange librarians in half of these libraries, while the others had either acquisitions librarians, bibliographers or para-professionals in charge of their programs. Yet, a survey of thirteen libraries done by Carl Deal in 1989 found that although most academic libraries still consider international exchanges to be an important collection development procedure, many had decreased staffing dedicated to this area and stopped the expansion of their exchange programs. In fact, he found that "no library surveyed had a combined total of one FTE (Full Time Equivalent) in professional time from all units maintaining gifts and exchanges, a distinguishing exception to Kovacic's earlier findings" (p. 202).

Several libraries have performed studies on their individual programs and found them to be cost-effective. Galejs (1972) concluded that the program at the Iowa State University benefited from $\$ 5000$ more in materials received than in materials sent. He did, however, recognize that this may not be the case in libraries that do not have access to suitable and cheap materials to offer on exchange. The University of California at Berkeley has had a strong commitment to international serial exchanges for over 100 years with staunch supporters in both the acquisitions and collection development departments. This positive attitude towards the program has allowed the University to retain its full time professional Gifts and Exchanges librarian and several supporting staff positions with the appropriate language skills (Barker, 1986). A review of the program in the mid-1980s reaffirmed its commitment to exchange. Steven Carrico found that "dollar
for dollar, the University of Florida Library's exchange program was proven to be costeffective" (1997, p. 30), but that it needed constant maintenance to remain so. During a period of budgetary constraints, the position of Gifts and Exchange Librarian was cut for two years and as "no one was carefully negotiating exchange agreements, routinely checking the receipt of records of incoming exchange serials, or closely monitoring the exchange budget, the problems associated with an under-supervised program became increasingly complicated and costly" (p. 25).

Other studies have discovered just the opposite and have decided to curtail their exchange agreements as a result. The attitudes toward the exchange program at UCLA have shifted over the years and "administrators and managers at UCLA have realized that the work required to obtain materials through exchange or to maintain the agreements themselves cannot be justified if the publications in question can be purchased" (McKinley, 1986, p. 75). There is, however, no data provided to support this statement. In a well-documented statistical study conducted over three years at the Ohio State University Libraries, it was found that "exchanges had become too costly and time consuming to maintain for all parties" (Diedrichs \& Davis, 1997, p. 19) and the program was thus stream-lined to provide economic efficiency. Only those exchange relationships that contributed materials either impossible to receive on subscription or too expensive to purchase (usually science journals) were retained. These were also subject to further scrutiny by the bibliographers to determine their intrinsic value to the university and to recommend appropriate action - either the cancellation of the continuation of the exchange. During an initial study of the Soviet serial exchanges at the Duke University

Library (Stevens, Kelley \& Irons, 1982) it was discovered that the exchanges showed an unfavorable balance of $\$ 1,869$.

Two studies performed in the early 1990s focused on specific aspects of exchange to evaluate the cost-effectiveness of these areas. A study by Fairbanks in 1990 concentrated on the claim rates for the non-receipt of items on exchange in comparison to items on subscription. Her findings show that although claim rates for foreign exchanges are much higher than that of domestic exchanges, the claim rates for domestic exchanges and domestic subscriptions vary little. She concludes that "claim rates appear to be determined not by the method of acquisition, but by the ease of communication between the library and the publisher" (p.56) and therefore exchange programs should not be curtailed based on the claim rates for these items. In a comparative study of the time involved in the receiving of serials on exchange, gift and subscription from Latin America, Spain and Portugal at UNC-CH (Sullenger, 1992), no difference was found in the amount of time spent on exchanges and subscriptions. These two studies, however, are very narrow in their approach and do not look at all aspects of exchange programs; indeed they concentrate on only a single point in the process.

International exchange is in a state of flux. There is no longer a consensus that exchange programs are effective means of exchange. The last several decades have seen a growing dissatisfaction with these programs and a complete reassessment of their worth. In evaluating these programs, "a strictly monetary approach should be taken. The traditional reasons for initiating exchange agreements, the unavailability of a title on a subscription basis, or the exchange partner's lack of resources in Western currency with which to acquire publications, are now much less common factors than they were 25 or

35 years ago" (Bluh \& Haines, 1982, p.153). Furthermore, Carl Deal (1989) notes that although exchanges with the Soviet Union have been adequately researched, those with institutions in other countries and regions of the world are needed.

This call for more detailed cost studies on exchange programs other than Soviet exchanges in the library literature serves as an impetus for this study. Following in the footsteps of several academic libraries that have initiated cost-analysis studies in the past several decades, a study of the cost-effectiveness of the Latin American and Iberian serial exchange program contributes to the lean literature on the subject and helps to resolve the questions that many librarians have when it comes to the efficiency of exchange programs.

## A HISTORY OF LATIN AMERICAN AND IBERIAN SERIAL EXCHANGES

The serials exchange program at the AAL began as an inexpensive method of acquiring materials due to the leanness of the library budget in the 1920s and expanded with the Depression in the 1930s and the years during World War II (UNC-CH, 1950). International serial exchanges are first documented in UNC-CH's University Archives in the early 1920s. Two Latin American serials procured by exchange are listed in the Annual Report of 1935-1936, the Boletín del Instituto Geologico de México and the Anales de la Sociedad Científica Argentina. During these decades, the serial exchanges grew rapidly and consistently. "More exchanges than ever before received were handled by the department" (Downs, p. 7) according to the Annual Report of 1933-1934, while "nearly one-half of the current journals were received on an exchange basis" (Downs, p. 6) in the 1936-37 fiscal year.

During the 1920s and 1930s the serial exchange program was part of the Periodical, Exchange and Binding Department, but due to the growth and the potential for continued growth, the university librarian recommended creating a staff position responsible for exchanges:

At the same time there have been heavy demands...to develop the exchange relationships of the library with other libraries and universities. University publications, duplicate volumes and pamphlets can easily be exchanged for valuable publications issued elsewhere, and in that way the per volume cost of the library can be reduced. This very important activity cannot be developed by the present staff, nor can the burden of the present load be successfully carried (Downs, 1930).

The position of exchange assistant was created soon after and was responsible for the exchanges until the program become a unit of its own, the Gifts and Exchanges Section, in the 1950s.

Berta Becerra, the Latin American and Iberian Bibliographer during the 1960s and early 1970s, thoroughly documented the consistent growth of the Latin American and Iberian exchange program in her annual reports. Her figures from the Annual Report, 1965-1966 illustrate the extent of the program: "We also have exchange programs with...universities, government departments and cultural institutions ( 15 new serial titles in 1965-66...). We send 102 publications to these libraries" (p. 2). Although over the next 6 years Becerra acknowledged the growth of the exchange program in her annual reports, she also saw them as problematic:

The exchange of UNC journals with Latin America and Spanish institutions continued to be unsatisfactory due to difficulties in organizing the mailing lists and other problems. We received frequent complaints from institutions which regularly sent us publications and seldom received ours (1974, p.2).

A resolution to this situation was introduced in 1975 with the decision to transfer many of the Latin American and Iberian serial exchange program responsibilities, including the mailing of the journals, to the then Latin American and Iberian Biblio-Center, the unit in charge of all collection development, acquisition and cataloging of Latin American and Iberian materials (Becerra, 1974).

With the addition of this position, filled by Brenda Cannon, and through the efforts of Norbert Linden, the assistant to the Slavic Bibliographer and the Foreign Serials Exchange Coordinator, the Latin American and Iberian exchanges flourished. Armed with appropriate language skills, Cannon oversaw all the correspondence with the foreign institutions, negotiated new exchange agreements, set up the exchange records,
maintained current address files, identified and solved problems and canceled ineffective exchanges. Not only were academic journals acquired, but also materials sometimes impossible to receive on subscription, such as government documents, university annual reports and bulletins.

The AAL has witnessed a drastic reduction in the amount of materials offered gratis on exchange. In the early 1980s the library lost all of its free subscriptions to The Journal of the Elisha Mitchell Society, despite the group effort of the area Bibliographers to fight this cut. The Latin American and Iberian Biblio-Center performed a small review of the exchanges with this journal as a result:

Starting with the coming [1981-1982] fiscal year, continuation of these subscriptions will have to be funded on a regular basis. [We] will undertake to determine whether it seems advisable to drop or to curtail any of them in order to reduce the considerable expense of assuming the expense of all formerly free subscriptions (Ilgen, 1981, p.7).

Currently, for each exchange agreement the library has using The Journal of the Elisha Mitchell Society as barter, it pays the entire subscription cost of $\$ 50.00$ plus $\$ 3.00$ postage and handling. The bibliographers and their assistants were successful, however, when they managed to retain their free subscriptions to a monographic series offered on exchange, The James Sprunt Studies in History and Political Science. In defense of the free subscriptions, Norbert Linden, the Foreign Serials Exchange Program Coordinator wrote:

The availability of subscriptions to the James Sprunt Studies has been a great boon to the library in the past and it is our sincere hope that this beneficial cooperation can be continued. It is largely because of the generosity of those responsible for our campus publications that the exchange programs exist at all (1977).

The elimination of free subscriptions and increased costs to materials seriously threatens the livelihood of exchange programs.

Staff cuts have also jeopardized the various exchange programs at UNC-CH. In 1981, Paul Scherer retired from his position as the Gifts and Exchanges Librarian at the AAL (Govan, 1981). This position was not refilled at the time and a few years later it was eliminated (L. Alford, personal communication, Nov. 23, 1998). According to Cynthia Cowan, the head of Serials Acquisitions, the non-area exchanges are maintained periodically by hiring temporary staff to review the program and solve any glaring problems (personal communication, Nov. 15, 1998).

In 1979 the Latin American and Iberian Biblio-Center was reorganized into two separate units, the Latin America and Iberian Resource Center, responsible for collection development, and the Latin American and Iberian cataloging unit. The exchange assistant position was eliminated in the process. Since then the program has suffered serious decline. This is thoroughly documented in LAIR's annual reports:

The problems remain the same, as does the source of the problems: lack of personnel. The services of a full-time Library Assistant are needed in the section to handle the complex and time-consuming processing required for this operation, which includes searching of materials offered, frequent correspondence in English, Spanish and Portuguese, extensive record-keeping, etc. The lack of a person to take on these responsibilities on a day-to-day basis renders it very difficult to carry on, let alone increase, this potentially very beneficial program (Ilgen, 1989, p.5).

Neglected for the past twenty years due to staff hours being consumed by other priorities, the Latin American and Iberian serial exchanges have been left to languish virtually unattended with only minimal time expended to solve problems as they arise. The Latin American and Iberian serial exchange program saw its first extensive review in over fifteen years in 1998. Exchanges were verified and recorded. During this time the
records were also automated to provide better and faster access. It was discovered that LAIR had been regularly sending many serials to institutions with which it had inactive exchanges (see Appendix A). A study of the cost-effectiveness of this program thus cannot come at a more opportune moment.

The AAL has yet to do a library-wide cost-effective study on the overall value of the serial exchange program, although various personnel see the need for such a study ( L . Alford, personal communication, Nov. 23, 1998; C. Cowan, personal communication, Nov. 15, 1998). This case study of the cost-effectiveness of Latin American and Iberian serial exchanges responds, in part, to this need. It serves to help determine the future of the Latin American and Iberian serials exchange program: elimination, maintenance, expansion or any combination of the three.

## METHODOLOGY

This study determines whether the Latin American and Iberian exchanges that are currently active are financially beneficial to the AAL. Serial exchanges can be considered cost-effective if they do not require more financial resources than they provide. They can either provide monetary savings to the library or a financial balance between what is necessary to run the program and what is received in exchange. Costeffectiveness can be computed by subtracting the actual subscription cost of the serials received from the combination of the money spent by the AAL for subscriptions to serials sent, the postage and handling $(\mathrm{P} \& H)$ and the personnel costs. See the formula below:
(Subscriptions AAL Sends + P\&H + Personnel) - Subscriptions AAL Receives $=$ Cost-Effectiveness

Each component of the equation is discussed below in detail. Other hidden costs, such as office space, equipment and storage, are not considered because of the difficulty in quantifying them.

## Subscriptions to serials AAL sends

A database developed by LAIR in the spring of 1998 to automate its exchange records provides much of the subscription information. The subscription cost to serials that the AAL sends on exchange is either the full subscription cost, a discounted cost, or gratis.

## Postage and Handling

Postage and handling is included in the subscription cost of the serials that AAL sends and thus is not treated separately. The few gratis subscriptions to journals offered on exchange cover postage and handling costs as well. The staff at AAL does not mail these serials; rather this is handled by the publishers.

## Personnel Costs

Previously administered by exchange specialists in the Serials Department or Acquisitions Department, the Latin American and Iberian serials exchange program is now the shared responsibility of the Latin American and Iberian Resource Department of the Collection Development Department and the Gifts and Exchange Specialist in the Serials Department. This decentralization makes it difficult to determine the exact amount of time spent on Latin American and Iberian serial exchanges.

This difficulty is further compounded by the nature of exchanges at the AAL. Apart from the continual check-in of serials, many of the other tasks performed on serials acquired on exchange are sporadic. Because of the low priority given exchanges by the AAL and thus the infrequent staff hours set aside to maintain them, work on exchanges is usually done as problems arise. As problems are noted, they are solved; but little daily work is performed to prevent these problems from occurring. Lengthy and timeconsuming periodic reviews of the entire program are also performed on occasion which require a great amount of staff hours during the review period that are not required on a daily basis. The recent database development during this last review in 1998 is meant to rectify this and allow for easier daily maintenance, thus allowing for more accurate estimates of actual time spent on exchanges.

There are four staff members in the library that work most intimately with the Latin American and Iberian exchanges and who agreed to cooperate with this study:

- Latin American and Iberian Bibliographer, LAIR, Collection Development Department
- Assistant to the Latin American and Iberian Bibliographer, LAIR, Collection Development Department
- Graduate Assistant, LAIR, Collection Development Department
- Gift and Exchange Specialist, Serials Department

The four individuals handle the correspondence with the exchange partners, maintain the various files necessary (address files, what is sent to whom, what is received from whom), initiate new exchanges, cancel inactive exchanges and solve any problems that arise. Due to the decentralization of the program, some of these functions are also duplicated (i.e. maintaining files) since both departments require accurate records. Although there are various other staff members that work with Latin American and Iberian publications in the serials department, a study done in 1992 on the tasks that the serial staff performed on Latin American and Iberian exchange, gift and subscription materials (Sullenger) found that there was no significant difference among the three. Therefore, certain tasks that are done for all serials (i.e. the check-in of serials, the claiming of serials, and the verification of invoices), regardless of their acquisition type, are not considered.

Due to the difficulty of determining the exact amount of time spent on exchanges and the impossibility of performing a yearlong study due to time constraints, this study represents a snapshot in time. Over the course of a two-month period, the library staff members who work with the Latin American and Iberian serial exchanges were asked to record the time they worked with exchange material to the nearest minute. Since the tasks performed on exchange material are sporadic, there is really no typical month.

Therefore the months chosen for the study were the ones that were most convenient to this study and the participating staff - March and April of 1999. These data were then translated into percentages which represent an estimate of the time spent on the program on an annual basis.

In computing the true cost of the personnel, salary and the amount of time are not the only factors considered. Benefits that the AAL covers for its employees, such as health insurance, Social Security and Medicare and contributions to the state retirement plan, were also included. For each full time employee, the AAL pays $\$ 1,736$ for health insurance annually, $7.65 \%$ of salary for Social Security and Medicare and $10.83 \%$ of salary for the state retirement plan. The formula for computing personnel costs for each individual is:

$$
\text { Time * (Salary }+ \text { Benefits) }=\text { Personnel Costs }
$$

The individual personnel costs for all four employees were added to generate the overall personnel cost.

Salary data is freely available to the public because UNC-CH is a public institution. The consent of the participants was also obtained in using this data for the study.

## Subscription Costs of the Serials Received

The majority of serials the AAL receives through the Latin American and Iberian exchange program can be purchased on subscription. These subscription costs were determined in a variety of ways:

- subscription information in the serial itself
- Ulrich's on CD-ROM
- dealers in the various countries with which LAIR maintains connections
- correspondence with the exchange partner or the publisher

For those serials for which subscription rates are not supplied and for those serials that are not available on subscription, an estimated price was provided based on the average price of other serials received. All subscription prices and estimates have been translated into U.S. dollars and rounded to the nearest dollar amount. The Latin American and Iberian Bibliographer, who is extremely knowledgeable in materials from these world areas, also evaluated these materials to judge if this average was a close estimate and was given the opportunity to adjust the average if deemed necessary.

These factors can now be placed into the formula for determining cost-
effectiveness. The formula is used to determine the cost-effectiveness of the program in two ways:

1. To determine the cost-effectiveness of the entire program (by including the estimated price of serials not available on subscription). This generates the total savings or expense of the AAL through exchange, and does not consider if something can or cannot be acquired by subscription important. This will help in making recommendations about the program as a whole.
2. To determine the cost-effectiveness of the part of the program that could be easily switched to acquisition by subscription (by only including the cost of serials that can be acquired on subscription). This will consider if something can or cannot be acquired by exchange important and will help in making recommendations for the program on a title-by-title basis.

## DATA PRESENTATION AND ANALYSIS

## Personnel costs

During the months of March and April of 1999, the Latin American and Iberian Bibliographer, the Assistant to the Latin American and Iberian Bibliographer, the Graduate Assistant to the Latin American and Iberian Bibliographer and the Gift and Exchange Specialist cooperated with the study and recorded the time, to the nearest minute, spent on issues pertaining to the serial exchange program (see Appendix B). The main functions performed during this two month time period were correspondence with the exchange partners and the university publishers, maintenance of contact information, cancellation of inactive exchanges and miscellaneous problem solving. No exchanges with new institutions were initiated during this time, but two new serial titles with existing exchange partners were acquired. These two months follow the automation of the program to a fully functional exchange database, so it can be assumed that the time spent was considerably less than it would have been if the records were still limited to paper.

The Latin American and Iberian Bibliographer spent approximately 1 percent of work time ( 3.42 hours out of a total of 272 working hours) attending to exchange issues. Although the Latin American and Iberian Bibliographer would ideally work 360 hours during this two month period, circumstances led to less time than usual spent on the job. The current salary, as of November 1998, is $\$ 52,300$, with a cost of $\$ 63,701.04$ inclusive of benefits. Thus, during this two month period, the cost to the University for the Latin

American and Iberian Bibliographer to work on the exchange program was $\$ 637.01$ based on the total salary and benefits package.

The Assistant to the Latin American and Iberian Bibliographer is a full-time Library Technical I position. This person dedicated two percent of the total working time (6.25 hours out of 352 hours worked) to the serial exchange program. With a salary of $\$ 23,050$, or $\$ 29,045.65$ inclusive of the benefits package, this amounts to $\$ 580.91$ for work on exchanges.

The Graduate Assistant to the Latin American and Iberian Bibliographer is a parttime position usually assigned to a graduate student enrolled in the UNC-CH's School of Information and Library Science. This position includes a 15 or 20 -hour work week depending upon the semester. A 20-hour work week was employed during the two months studied. The annual salary based upon the 20 -hour work week was $\$ 9,000$ with no additional benefits paid. The graduate student in this position spent 21.17 hours of 180 hours, or approximately twelve percent of the total time expended, working with exchange materials. This amounts to a cost of $\$ 1,080$ spent on the serial exchange program.

The Gift and Exchange Specialist in the Serials Department spent approximately six percent ( 21.08 hours out of 360 hours) of the total working time dealing with Latin American and Iberian exchanges. This figure is, at best, only a rough estimate. At the time of this study the position was not filled. The person who participated in this time study had held the position until December 1998, when he transferred to another position in the library. The time reported here, then, is an approximation based on the memory of the individual who held the position only a few months earlier (see figure 1). With an
annual salary of $\$ 21,517$ for a total of $\$ 27,229.34$ with the benefits package, this amounts to $\$ 1,633.76$ spent on the Latin American and Iberian exchange program.

These four individual totals combine to produce a grand total of $\$ 3,931.68$. This is the estimated annual personnel cost used in the equation to determine the costeffectiveness of the Latin American and Iberian serial exchange program.

These monetary totals are specific to one institution during a very limited time period and should not lead to generalizations. Although this personnel cost (see figure 1) must be included as one of several factors used to evaluate the cost-effectiveness of the Latin American and Iberian serials exchange program, it is not static and can change at any time, due to the changing requirements to run the program, the time spent to fulfill the exchange duties and the staff elected to perform these duties.

Figure 1: Personnel Costs


This change can also take place if the duties that are now performed by the Latin American and Iberian Bibliographer, for example, are transferred to a different position with less monetary compensation.

Of the four positions participating in this study, the Graduate Assistant to the Latin American and Iberian Bibliographer was the most closely involved with the
exchange program during the two months studied, dedicating a total of twelve percent of her work time to the maintenance of exchanges (see figure 2 ).

Figure 2: Personnel Time


This was mainly due to the considerable working knowledge of the program by the student, who also happened to be the person responsible for the automation of the exchange program and the thorough review of the program in 1998. This position is the least financially compensated of the four and, when the staff changes in this position, it is likely that more of the exchange maintenance will become the responsibility of a staff member with a higher salary, at least until the new Graduate Assistant is trained in the responsibilities of the exchange program.

## Subscription Costs of the Serials Sent

During the decades while the Latin American and Iberian Resource Center has had an active international serial exchange program, the AAL has had 235 subscriptions to the journals that it offered on exchange to 198 institutions in Latin America, the Iberian Peninsula and a few European countries with institutions dedicated to Latin American studies. Many of these agreements have ceased due to the cancellation of the exchange agreement by the exchange partner or by the AAL. Thirty-seven of these subscriptions were canceled involving 34 different institutions during the review of the
exchange program in 1998 (see Appendix A). Currently only 133 subscriptions are sent on exchange to 108 different institutions. Several foreign institutions receive more than one publication from the AAL, usually sending comparable items in return. For example, the AAL sends four different journals to the Fundação Getulio Vargas in Rio de Janeiro, Brazil and receives three titles in return.

Currently the AAL offers six journals and one monographic series on exchange: The Journal of the Elisha Mitchell Scientific Society, The Latin American Research Review, Studies in Philology, Social Forces, Romance Notes, Hispanófila and the monographic series The James Sprunt Studies in History and Political Science. With the loss of the free subscriptions to The Journal of the Elisha Mitchell Scientific Society in the early 1980s, the AAL now incurs the full subscription cost of \$50 plus the postage and handling cost of $\$ 3$ for all 36 copies that it sends out to Latin American and Iberian exchange partners. This is a cost of $\$ 1,908$ annually.

The AAL receives 29 discounted subscriptions to the Latin American Research Review for LAIR exchanges. Each subscription costs $\$ 15$ (a third of the $\$ 45$ institution rate), resulting in an annual charge of $\$ 435$, instead of the $\$ 1,305$ it would be billed at full price. Nita Daly, the coordinator of the exchanges at the Latin American Research Review, believes that this discount "makes it possible for us to reach institutions that we would probably not reach otherwise. Our aim is to get our journal out and read" (personal communication, May 13, 1999).

The AAL sends copies of Studies in Philology to 29 Latin American and Iberian institutions. The AAL is billed the full foreign institution rate of $\$ 40$ plus a $\$ 2.40$ postage and handling charge for 13 subscriptions, while the remaining 16 are free of
charge. According to Charlotte Pence of the University of North Carolina Press, the journals are priced as low as possible and no discounts are offered beyond the free subscriptions (personal communication, May 10, 1999). The paid subscriptions amount to $\$ 551.20$ annually, which is a substantial saving from the $\$ 1,229.60$ the AAL would be billed without the free subscriptions. On average, then, each subscription to Studies in Philology costs $\$ 19.00$.

Of the 7 Latin American and Iberian exchanges involving the journal Social Forces, 4 are paid subscriptions and 3 are free subscriptions. The AAL is billed the full foreign institution price of $\$ 72$ with an additional $\$ 4.32$ for postage and handling, totaling $\$ 305.28$ annually. This is an average price of $\$ 44$ per subscription. With no free subscriptions, the total would be $\$ 534.24$.

The Romance Languages Department at UNC-CH publishes two of the journals that are used in exchanges, Romance Notes and Hispanófila. The AAL maintains only 3 Latin American and Iberian exchanges for Romance Notes. All of these are full price subscriptions of $\$ 30$ each, for a total of $\$ 90$ annually. Hispanófila also has a subscription price of $\$ 30$, of which the AAL has three subscriptions, totaling $\$ 90$ annually. The AAL also exchanges one copy of Hispanófila on a free basis, making the average cost of each subscription $\$ 23$. In the opinion of Mary Jones, the administrative assistant at the Romance Languages Department, all subscriptions to the two journals should be free because of the intrinsic cooperation between the various departments of the university, working toward the same goal of educating others (personal communication, May 18, 1999).

Of the 25 subscriptions to the monographic series The James Sprunt Studies of History and Political Science, 9 are full price subscriptions and the remaining 16 are free. Although this series is an irregular publication, there is, on average, one issue published per year. Each paid subscription has a cost of $\$ 36.04$ each, for a total of $\$ 324.36$. The 16 free subscriptions saves the AAL $\$ 574.64$. With these free subscriptions, the average cost of the 25 subscriptions is $\$ 13$.

The AAL pays $\$ 3703.84$ annually for the 133 journals that it sends on exchange to its Latin American and Iberian partners. This is a $39 \%$ savings off the total $\$ 6,089.84$ that the AAL would pay if it was given no discounts and no free subscriptions (see figure 3).

Figure 3: Cost of Serials Sent


Factoring in the discounts and the free subscriptions, each journal the AAL sends costs, on average, approximately $\$ 28.00$.

## Subscription Costs of the Serials Received

Throughout the time period of active Latin American and Iberian exchanges, the AAL has received over 340 different serial titles from its exchange agreements with 198 foreign institutions. Many of these serials are no longer received due to the cessation of publication, the switch to subscription-only availability or the cancellation of the exchange agreement by either the exchange partner or by the AAL. During the review of the exchange program during 1998, the holdings for 37 publications were reviewed, the records were closed and the exchange agreements were canceled with the issuing 27 institutions. As a result of this action, 171 serial titles are currently received on exchange from 106 different institutions.

Of these 171 titles that the AAL currently receives, 105 could be obtained through paid subscriptions ( $61 \%$ ), 21 are free publications and thus available as gifts ( $12 \%$ ), 19 are available through exchange only ( $11 \%$ ) and 3 could be obtained with a financial donation ( $2 \%$ ). No information on the price and the means of acquisition was found for the remaining 23 (13\%), (see figure 4.).

Figure 4: Serial Acquisition Types


Thus, a minimum of $76 \%$ of the publications could be acquired through means other than exchange, either by subscription, gift or donation. Although no accurate estimation can be made, some of the 23 journals with no price or means available can also be assumed to be obtainable through means other than subscription.

The prices of the 126 titles (the 105 available on subscription and the 21 free serials) for which information was found vary widely. Exclusive of the free subscriptions, these range from as little as $\$ 1.50$ for a subscription to the Boletín Bibliográfico of the Instituto Oceanográfico of the Universidad de Oriente in Venezuela to as high as $\$ 128$ for a subscription to the monthly Bibliografía Española. Monografias of the Ministerio de Educación y Cultura in Spain (see figure 5). The average price of each serial is $\$ 31$.

Figure 5: Cost of Serials Received


Due to the nature of this study to determine the overall cost-effectiveness of the Latin American and Iberian serial exchange program, it was necessary to estimate the price of the 23 serials for which no acquisition and subscription information was available, the price for those available by donation and the value of those available by exchange. William Ilgen, the Latin American and Iberian Bibliographer, was consulted to determine the suitability of this $\$ 31$ estimate and was given the chance to modify it if necessary. With the physical exchange materials in hand, Ilgen determined that the $\$ 31$ was skewed by the higher priced scientific journals and proposed that a $\$ 23$ estimate per journal would be more appropriate (personal communication, May 19, 1999). The majority of the materials that required an estimated price were institutional newsletters, reports and bulletins that usually would not merit a $\$ 31$ subscription price.

The total cost of the serials received on subscription for which prices are known is $\$ 4,012.50$ (105 paid subscriptions, 21 free and 3 donations based on the $\$ 23$ estimate). When the 23 serials with no prices are included at the $\$ 23$ estimated rate, this total increases to $\$ 4,541.50$. To identify the financial value of the entire exchange program, the 19 exchange-only materials must also be included in the calculation of the value. This brings the total value of the materials that the AAL receives on exchange to $\$ 4,978.50$ (see figure 6).

Figure 6: Total Cost of Serials Received

|  | Serials available through <br> Subscription, Free or <br> Donation | Including Serials with <br> no known information <br> (at $\$ 23$ estimate) | Including Serials <br> available on exchange <br> only (at \$23 estimate) |
| :---: | :---: | :---: | :---: |
| Cost | $\$ 4,012.50$ | $\$ 4,541.50$ | $\$ 4,978.50$ |

## Cost-Effectiveness of the Complete Program

Following the logic employed at the University of Florida Library during a costeffective study conducted in 1994-1995, an analysis of the overall savings or costs to the library of the serial exchange program involves the inclusion of cost estimates for all the serials currently received on exchange, including those available on exchange only (Carrcico, 1997, p. 29.) In this evaluation, the total value of the materials received assessed against the cost of the program, not the method of acquisition of the materials, is the critical issue. This determines the financial benefit or loss of the program as a whole. It also helps in making universal recommendations about the future of exchange programs. An evaluation of the program considering the acquisition types is provided as well.

Using the equation provided in the methodology, the current values are inserted:
$[\$ 3,703.84$ (subs. AAL sends) $+\$ 3,931.68$ (personnel) $]-\$ 4,978.50($ subs. AAL receives $)=\$ 2,657.02$

The result is an amount of $\$ 2,657.02$ that the AAL pays to maintain the Latin American and Iberian serials exchange program for which it is not compensated by the financial value of the exchange materials received.

## Cost-Effectiveness Based on Acquisition Type

Following are two alternative methods to evaluate parts of the Latin American and Iberian serial exchange program based on acquisition type. These analyses are valuable in providing the effectiveness of various aspects of the program.

## Exchange-Only Materials

The AAL receives 19 serials that are available on exchange-only from 11 Latin American or Iberian institutions. In return, the AAL sends 10 serials to 10 different institutions. The discrepancy between the number of institutions from which the AAL receives materials versus those to which it sends materials, is due to poor record-keeping and exchange management by the AAL. Although the Departamento de Zoología of the Universidade de São Paulo has been regularly sending the AAL the Boletim de Zoología since 1973, the AAL canceled its subscription to the Journal of the Elisha Mitchell Society that it sent to the Universidade. Apparently this was done in error during a previous exchange review as there is no rationale nor date for this decision.

Of the 10 serials sent, 6 are full-price subscriptions, 1 is a discounted subscription and 3 are free subscriptions. They cost a total of $\$ 333$ annually. With no access to discounts and free subscriptions, the AAL would pay $\$ 477.48$. Using the estimated $\$ 23$ per serial received as a guideline, the value of the materials received is $\$ 437$. Since the exchange-only portion of the program makes up only $11 \%$ of what is received, the personnel costs may also be minimal.
$\$ 333$ (subs. AAL sends) - $\$ 437$ (subs. AAL receives) $=-\$ 104$

On a title-by-title basis this portion of the program is financially advantageous to the AAL in that it receives $\$ 104$ more in materials than it sends. This figure, however, takes into consideration three factors: some of the exchange materials offered by the AAL are free or discounted, the price of the materials received on exchange is a rough estimate and no personnel costs have been included.

When factoring in $11 \%$ of the total personnel costs of $\$ 3931.68$ this exchangeonly portion of the program no longer appears financially favorable. In this case, the AAL spends $\$ 328$ more than it receives.
$[\$ 333$ (subs. AAL sends) $+\$ 432(11 \%$ of personnel costs) $]-\$ 437$ (subs. AAL receives) $=\$ 328$

## Materials Available on Subscription, Free or Donation

The 76\% of the Latin American and Iberian exchange program that could be easily switched to methods of acquisition other than exchange can be evaluated using the same methods. Since this approach does not include the 23 titles (13\%) for which no information is available, the cost of the materials that the AAL sends on exchange for these materials and the personnel costs attributed to them must be removed from the previous totals. The AAL sends 19 titles to Latin American and Iberian institutions for these 23 titles -8 full price subscriptions, 5 discounted subscriptions and 6 free subscriptions - for a total of $\$ 409.96$. The total, then, of the materials that the AAL sends is $\$ 2,960.88$. Subtracting $24 \%$ of the personnel time (that dedicated to the material with no information and the exchange-only serials) leaves $\$ 2,988.08$. Although there is a potential savings to the AAL if only the difference of cost in materials is considered, when the cost of personnel is included, it results in a financial loss of $\$ 1,936.46$ annually to the AAL.
[ $\$ 2,960.88$ (subs. AAL sends) $+\$ 2,988.08$ ( $76 \%$ of personnel costs)] - \$4,012.50 (subs. AAL receives - excluding exchange and "no-info" $)=\$ 1,936.46$

## RECOMMENDATIONS AND CONCLUSIONS

The Latin American and Iberian serial exchange program at the AAL at UNC-CH cannot be considered a cost-effective program based on the data presented here. Conforming to the perceptions of many administrators and staff, it has proven to require more financial resources than it provides to the University. The overall results of the data indicate a skewed financial advantage favoring the foreign universities, institutions and organizations. With this data as verification, it seems timely to take the initiative to either streamline the program to make it more cost-effective, or, following in the footsteps of other academic libraries, eliminate parts of the program that absorb limited resources. If the majority of University administrators and personnel continue their unenthusiastic attitudes towards exchange programs, resulting in the lack of permanent personnel and a timeline to periodically review the program, the inefficiencies inherent in the program and the unequal exchange agreements will continue to multiply. This study provides the perfect impetus to rectify this unfortunate situation.

The most obvious solution to remedy a fiscally unfavorable program is to eliminate it. In the cost-effectiveness studies performed at other academic libraries, including Duke University (Stevens, Kelley \& Irons, 1982) and Ohio State University (Diedrichs \& Davis, 1997), after a long review period and a thorough examination of their programs, this was selectively done. The portions of the programs that were fiscally insolvent were eliminated and converted to traditional acquisition through subscription, if this alternative existed. This, too seems like a viable option for the AAL. At least 76\%
of the Latin American and Iberian materials that are currently received on exchange at the AAL have alternative methods of acquisition. Although it would cost more than $\$ 4,000$ to directly purchase these materials on exchange, which is approximately $\$ 1,000$ more than the library expends now for the subscriptions to the materials that it sends, when factoring in the personnel costs, the library is losing almost $\$ 2,000$ annually. This, however, includes the assumption that library funds can be moved between budget lines easily. In this case, it is assumed that the money currently set aside for exchange subscriptions can be reassigned to serial subscriptions.

Another point to remember is that transferring the serials to subscriptions would require a sizeable initial staff investment and regular upkeep by staff in the Acquisitions Department and the Serials Department. It would largely eliminate, however, the personnel costs of the staff in the Collection Development Department, since the need for correspondence, extensive record keeping, initiation of exchanges, cancellation of exchanges and problem solving would no longer be an issue.

Partial elimination of the exchange agreements for the materials available on subscription is also an alternative that the AAL might pursue. A title-by-title or agreement-by-agreement analysis could be conducted if the library wishes to retain only the exchanges that are cost-effective. This would require a more complete, involved and time-consuming study than the one performed here, but is certainly plausible with the recent automation of the exchange records. This selective retention would probably be more fiscally rewarding for the scientific journals and business journals. Many of the higher priced journals are scientific in nature, e.g., Revista de la Academia Colombiana de Ciencias Exactas, Fisicas y Naturales (\$100), the Anales del Instituto de Biología of
the Universidad Nacional Autónoma de México (\$100) and the Revista Brasileira de Economía (\$90). Similarly, the 21 serials that are available from foreign institutions at no cost could easily be changed to gift subscriptions and the materials that the AAL sends in exchange simply canceled. This preferential treatment of retaining and canceling exchanges based on financial value might backfire, however, if these issuing foreign institutions decide to eliminate their exchanges based on similar criteria. It is shortsighted of academic libraries in the United States if they do not realize that the cancellation of these exchange programs have repercussions in the foreign countries.

Maintaining the portion of the exchange program that can only be acquired by exchange is beneficial from a collection development standpoint. These materials, many of them newsletters and journals from institutions in the countries in which the AAL focuses its collection, could otherwise not be acquired by the library. In the case of the AAL, among the 171 Latin American and Iberian titles that are currently received on exchange, only 19 of these are available exclusively through exchange channels. On a strict analysis of the cost of materials only, this part of the exchange program is roughly balanced, with a small financial advantage to the AAL. Although these exchanges no longer appear cost-effective when including a proportionate amount of personnel time and costs, the library must weigh the importance of the materials against the financial costs. A thorough content-based analysis of these materials should be performed to determine their value to the library and its patrons before any cancellation of these exchange-only materials is enacted. This collection-focused approach was found to be vital during the reviews at the Duke University (Stevens, Kelley \& Irons, 1982) and the Ohio State University (Diedrichs \& Davis, 1997).

Not only should the actual exchange agreements be closely reexamined, but also the work flow procedures at the library. Due to the need for regular communication with the exchange partners in both Spanish and Portuguese, many duties must be performed by the collection development staff at LAIR. However, because of the internal regulations at the AAL, only certain staff in the Serials Department can initiate, cancel and update subscriptions and holdings records. The current process requires constant communication between two very separate departments and an unnecessary duplication of records. Although the new LAIR Exchange database, complete with password protection and soon accessible through the AAL's Local Area Network, will greatly reduce the need for duplicate records and paper files, it has only been fully operational for a little over six months and it is still too early to recognize its full benefits. Another time study, investigating personnel time when the database is fully functional, might be a very beneficial future undertaking. The consolidation of personnel time, function and duties, creating some unification between the two departments, would greatly reduce the time needed to maintain the exchange program. As noted in the LAIR Annual Report of 1997-1998, "A highly desirable ultimate outcome from the LAIR point of view would be a greater centralization of exchange records and transactions" (Ilgen). Under such circumstances, it might even prove beneficial to expand the program.

Historically, exchange programs have been lauded for contributing to the wealth of library collections in times of need and for introducing foreign trends, ideas and scholarship while disseminating their own ideas. However, now that fiscal responsibility is a higher priority and many administrators and staff have the impression that serial exchange programs may have outlived their usefulness, they must now be reevaluated to
correspond to the needs of the library community. This cost-effective analysis of the Latin American and Iberian serial exchange program provides the background and, perhaps, even the rationale for the Academic Affairs Library to make the appropriate decisions in regard to the future of the exchange program.

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| Oficina de Estado de Relaciones Exteriores Oficina de Canje y Difusion Cultural | Dominican Republic |
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|  | Studies in philology |
| Pan American Institute of Geography and History | Mexico |
|  |  |
|  | James Sprunt Studies in history and political science |
| Revista Convivium | Brazil |
|  | Latin American research review |
| Universidad Central de Venezuela <br> Facultad de Ciencias Economicas y Sociales, Instituto de Investigaciones Economicas y Sociales | Venezuela |
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|  | Latin American research review |
| Instituto de Antropologia e Historia |  |
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|  | Journal of the Elisha Mitchell Scientific Society Latin American research review |
| Universidade de Sao Paulo | Brazil |
| Instituto de Biociencias | Journal of the Elisha Mitchell Scientific Society |

## APPENDIX B - Time Spent on Exchanges

|  | March 1999 | April 1999 | TOTAL |
| :---: | :---: | :---: | :---: |
| Latin American and <br> Iberian Bibliographer | 0 hours | 3.42 hours | 3.42 hours |
| Assistant to the <br> Bibliographer | 2 hours | 4.25 hours | 6.25 hours |
| Graduate Assistant to <br> the Bibliographer | 8.6 hours | 12.57 hours | 21.17 hours |
| Gift and Exchange <br> Specialist | 13.47 hours | 7.61 hours | 21.08 hours |

