
The Role of the Paraprofessional in Technical Services in Libraries

LYNNE C. HOWARTH

ABSTRACT

THE EXISTENCE OF NONPROFESSIONALS WITHIN libraries has a long, though largely undocumented, history (Evans, 1979). Usually considered to be individuals who may hold a degree or diploma other than a graduate degree in library and information science or information studies, paraprofessionals have held positions with varying types of tasks and responsibilities in technical services operational units in libraries. With the introduction and increasing availability of library automation, and the more recent administrative trend toward outsourcing any or all parts of selection/collection development, acquisitions, cataloging, physical processing, and binding and repairs—components traditionally ascribed to technical services (Tauber, 1954)—the continued viability of paraprofessional positions has been called into question. The possible future role of the paraprofessional is explored from the premise that survival will be dependent on defining an occupational niche that is unique from that of clerical support staff or professional librarians in technical services.

INTRODUCTION

In the Canadian library context, the term *paraprofessional* normally includes two categories: (1) library technicians who hold a diploma in library and information techniques from a college of applied arts and science and who may also hold an undergraduate degree; and (2) paraprofessionals who hold at least an undergraduate degree but who do not have a diploma in library and information techniques or a degree in li-

brary and information science or information studies. The latter are more likely to be hired to work in technical services in libraries because of their subject expertise. For example, some Canadian academic libraries employ paraprofessionals for derived and/or original cataloging within particular subject areas. Paraprofessionals, or library technical assistants, are also employed in a variety of library settings in the United States and play a prominent support role in technical services, in particular, in academic libraries.

Aside from these job classifications and titles, however, what distinguishes a paraprofessional from a clerical support position or a professional librarian, respectively, and what is an appropriate role for the paraprofessional in technical services in libraries? This article will explore these questions, beginning with an overview of technical services as a whole, then moving through each of the component operational units. The changing role of the paraprofessional will be considered across the continuum of past, present, and future, culminating in some predictions about the continued relevance and employability of this level of staff. Within the context of this article, the term *paraprofessional* will be used to include the three categories of: (1) paraprofessional, (2) library technician, and (3) library technical assistant—terms which are sometimes used interchangeably though not necessarily appropriately so.

TECHNICAL SERVICES: AN OVERVIEW OF OPERATIONS AND STAFFING

Historically, one of two major operational units within the organizational structure of all but small or one-person libraries, technical services has been defined as “services involving the operations and techniques for acquiring, recording, and preserving materials” (Tauber, 1954, p. 4). The administrative organization of technical services—as opposed to the administrative organization of public or readers’ services—integrates related operations and techniques which may include several or all of the functional units of selection, acquisitions, cataloging and classification, physical processing, binding and repairs, and circulation (Tauber, 1954, pp. 9-21). While operations associated with technical services have existed since the systematic acquisition and recording of collections, more formalized approaches have been documented only since the mid-nineteenth century. The concept of a separate administrative unit identified as technical services or technical processing was first proposed in 1939 (Coney, 1939). By the mid-1950s, with the establishment of the Resources and Technical Services Division of the American Library Association and the publication of Tauber’s (1954) definitive text, *Technical Services in Libraries*, the concept of a divisional unit incorporating the former acquisitions and cataloging departments had gained wide acceptance.

Over the next few decades, the bifurcation of technical and public services was operationalized and ultimately institutionalized in a number

of medium- to large-sized academic, public, and other library settings (Shachtman, 1955; Dougherty et al., 1967; Busch, 1985). With the rise of automated library systems—first circulation control systems in the mid-1970s, then fully integrated systems with online public access catalogs [OPACs] through the 1980s—the distinctions between bibliographic files created, controlled, and accessible only by technical services personnel and those of public services became blurred. Rather than, for example, maintaining a manual card-based Master Shelf List or “official catalog” or union catalog within technical services, and another shelf list within the public services branch or unit, there was one master file of bibliographic records in machine-readable format readily available to anyone with access to a computer on the library’s local or wide-area network. The same record that was created for an item at the acquisitions stage would form the basis for the catalog record which, in turn, would support such public services functions as circulation, reference, interlibrary loan, and user inquiry. This “blurring of files” is even more obvious today with Web-based catalogs and ubiquitous access to Internet resources from remote sites.

Along with this “blurring of files” came challenges to the traditional bifurcation of technical and public services. Administrators, such as Gorman (1979, 1980, 1983, 1985), Freedman (1984), Holley (1981), and Malinconico (1983) wrote in favor of administrative reorganization involving greater integration of services and more effective utilization of staffing resources. For example, Gorman’s (1983) concept of the “ecumenical library” advocated utilizing those with subject and bibliography skills (professional librarians) to provide direct services to the public, while having those with technical skills (paraprofessionals and some clerical staff) provide support services (indirect services) to the library’s users and to professional staff. The more holistic approach to integrated services is manifested today in the rising number of positions requiring individuals with training in both cataloging and/or bibliography and in reference.

While the 1980s were a time when “the walls came a-tumbling down” between public and technical services, the 1990s have been characterized by a fundamental questioning of the need for, and viability of, technical services in libraries. With a downturn in national economies, significant budget reductions to libraries/information services in both the private and public sector, management emphasis on rethinking, reengineering, and restructuring whole organizations and their internal component work processes and activities, a greater focus on the delivery of services, increasing efficiencies in productivity to be gained through emerging new technologies, and ever-growing access to shared operational resources and effective partnerships, some library administrators have turned to outsourcing parts or all of technical services as a means of re-

ducing costs, maximizing dwindling resources, and reallocating staff expertise to service-focused areas within the library. Some libraries have reorganized and reoriented some technical services activities, renaming their administrative units to reflect this shift. Bibliographic services, collections access services, support services, or bibliographic access services are some examples of unit names which reflect less of a "technical" focus and more of a "service" orientation beyond the traditional backrooms of acquisitions, cataloging, and physical processing. This "rethinking" of technical services has not yet solidified and, for the foreseeable future, administrative approaches and structures remain in flux.

What has been the role of the paraprofessional in this more or less half-century of history of technical services? To answer this question, it is necessary to consider the parts of the whole—the component functional units within the technical services entity. Having engaged in that deconstruction, it will then be possible to revisit the original question and to continue with some speculations concerning the role of the paraprofessional in technical services of the future.

THE ROLE OF THE PARAPROFESSIONAL IN COMPONENT FUNCTIONAL UNITS OF TECHNICAL SERVICES

At this juncture it may be useful to reiterate Tauber's (1954) definition—i.e., that technical services may include several or all of the functional units of selection, acquisitions, cataloging and classification, physical processing, binding and repairs, and circulation (pp. 9-21). While acquisitions, cataloging and classification, and physical processing (including binding and repairs) have remained, across time, the "core business" of the domain of technical services (Howarth, 1995), selection (and/or collection development) and circulation have alternated in the literature and in administrative application between public and technical services. Preservation and conservation, though not included in Tauber's definition, are sometimes, though not consistently, considered a functional component of technical services. For the purposes of the following discussion, we will refer only to those functional units prescribed by Tauber.

Selection

In medium- to large-sized libraries (as determined by collection size), materials selection, also known as collection development, has largely remained the responsibility of professional librarians, often working in direct consultation with constituent user groups. Where paraprofessionals hold positions because of their expertise in a certain subject area, they may take part in the selection process, though often under the direct supervision of a professional librarian or as part of a selection team. In small or one-person libraries, and in some school libraries where paraprofes-

sionals rather than media specialists or teacher-librarians are employed, the paraprofessional may have responsibility for selection of materials.

That selection/collection development has remained, for the most part, within the domain of librarians is a reflection of skill set requirements. While abilities in more than one language may be desirable, subject expertise is paramount in combination with: (1) a solid understanding of the publishing industry and of changing user requirements and tastes; (2) well-honed skills in collection analysis, measurement, and evaluation (e.g., content analysis, bibliometrics, etc.); (3) a knowledge of cognate or related disciplines and publishing trends within; (4) an ability to anticipate and monitor shifts in the subject literature (emerging themes, the changing status of a discipline or topical area, etc.); (5) an ability to develop strategic plans regarding collection development and to work within a budget framework; and (6) an intuitive sense of the collection as a kind of case study in biblio-diversity—i.e., continually changing to meet the needs of end-users. The library technician may have the skills of someone trained in library and information techniques but may not have particular expertise in a subject area or areas. The opposite may be true of the paraprofessional. The librarian should reflect a strong mix of both, along with a well-developed sense of professional judgment. It seems unlikely that selection/collection development activities and demands in medium- to large-sized libraries would change sufficiently to warrant having a paraprofessional responsible for this core activity. Moreover, the increasing interest in creating digital library collections and a core of Internet-based electronic resources has sharpened the emphasis on subject expertise as a prerequisite for identifying and evaluating a myriad of knowledge sources from within a vast domain where quality of information may vary dramatically. The skills required to locate a Web site are indeed part of a paraprofessional's toolkit; the foundation of subject expertise and the ability to judge the relevance and quality of the resource may still reside primarily with the professional librarian.

Acquisitions

Acquiring materials has traditionally fallen to those employed at the clerical or support staff level who receive requests from selectors, obtain item and publication information, create an order form manually or in electronic format, receive and check in materials, and forward a completed invoice to accounting for payment. A paraprofessional would be more likely to be serving as a functional unit and/or clerical staff supervisor rather than creating or receiving/processing items. In the supervisory role, the paraprofessional could be responsible for liaising with selectors and/or the collection development team; following-up or through with publishers, jobbers, or other vendors (i.e., claiming for orders only partially received or never received); troubleshooting electronic ordering

systems; and monitoring budget changes. While requiring good organizational and communications skills, a supervisory position in acquisitions would not require the same level of subject expertise as for selection.

As the number of, and sources for, derived bibliographic records for different formats of material have increased, initially through the cooperative efforts of bibliographic utilities (OCLC, WLN, RLIN, ISM CATSS [now A-G Canada]) and their subscriber libraries, and the generation of source records from national cataloging agencies (Library of Congress, National Library of Canada, British Library, National Library of Australia, etc.), and more recently with the addition of other cataloging support services (LaserQuest, BiblioFile, DRANet, etc.), and individual library OPAC or WebPAC databases, the ability to capture and download cataloging copy for an item can now be done in the acquisitions unit at the point of ordering or receiving. This operation can readily be performed by a paraprofessional and, with some formats (e.g., fiction or nonfiction trade publication monographs), by clerical support staff. In some libraries, this development has led to the transfer of paraprofessionals from cataloging units to acquisitions. In a sense, there has been a residual "up skilling" of the work of acquisitions because of developments in traditional cataloging support systems and services. Provisions for authority work and for subject analysis and classification have to date remained largely the responsibility of catalogers—both paraprofessionals and professional librarians—though the actual *application* of those activities can be performed anywhere there is a computer with access to bibliographic databases regardless of their location. Consequently, there has been a blurring of the lines between acquisitions and cataloging from an administrative perspective, and some units have been integrated into one "collections access" operation.

Cataloging and Classification

Where some of the more significant changes to the role of the paraprofessional in technical services have occurred is in the area of cataloging. While Tauber (1954) refers to this function as "cataloguing and classification," cataloging can be interpreted as a high-level term encompassing activities of bibliographic searching and description, subject analysis, classification, and authority work for a variety of types and formats of materials. In the manual environment, cataloging was largely done by professional librarians with clerical support for typing, filing, and maintaining the cards on which the bibliographic information was recorded. The growth in publishing and in the acquisition of materials, which accompanied, in particular, an increase in educational funding and the demand for curriculum support during the 1960s and 1970s, spurred the development of all publicly funded libraries and especially school libraries. The need for catalogers to organize and provide access to expanding

collections outstripped the supply of librarians. In Canada, this need prompted the creation of library techniques programs (Weihs, 1997, p. 43) for training a level of staff which could support librarian catalogers—e.g., in handling more straightforward or routine aspects of cataloging. Working with derived copy, or creating original cataloging for fiction materials, or doing the background research for bibliographic information, all were activities typically assigned to library technicians. As mentioned previously, some academic libraries chose to hire paraprofessionals with subject degrees who could be trained in cataloging activities as outlined earlier. Clericals continued to provide the support of typing, filing, and maintaining those bibliographic records created or edited by paraprofessionals or created originally by librarians. In all cases, the librarian cataloger was responsible for supervising the assignment and flow of work and for revising the work of paraprofessionals.

With subscription to bibliographic utilities in the 1970s and 1980s, and with the increasing availability of derived cataloging and “no-conflict cataloging” (accepting source records with minimal editing for local holdings), the creation of original records for such items as nonfiction trade publications and some types of audiovisual materials (e.g., popular sound recordings and videorecordings, kits, etc.) for which copy became available, began to shift away from librarians to paraprofessionals, and the responsibility for revising the cataloging of paraprofessionals was phased out or entirely removed from librarian-catalogers. More complex and original titles (for which cataloging copy would be an unlikely find) were assigned to librarians who assumed greater responsibility for *managing* both cataloging *and* bibliographic systems, implementation, and training (Howarth, 1993). Clerical functions changed from typing, filing, and maintenance of card catalogs, to the input, editing, filing, and maintenance of machine-readable records in both bibliographic utility and in-house databases. Responsibility for supervising those activities within cataloging were more often shifted from the librarian-cataloger to the paraprofessional. While the automation of a number of routine functions of the cataloging operation might imply an overall “down skilling” of work, in the opinion of this researcher, the skills-base required at each of the three levels of staffing actually increased. Librarians were required to exercise higher level cataloging skills and, increasingly, to assume management responsibilities for the cataloging operation and administration of in-house and utility bibliographic databases. Paraprofessionals assumed almost full responsibility for derived cataloging (some simple level cataloging [original cataloging of fiction trade monographs; some derived copy for nonfiction trade monographs] was directed to high-level clerical staff), took on more original cataloging, and also assumed supervisory roles with clerical and other support staff. Clerical support staff learned requisite computing skills (searching, input, editing) and were

assigned, in some cases, derived copy cataloging or simple level original cataloging (Howarth, 1993).

With the increasing availability of Internet and other electronic resources, cataloging seems once again to be shifting back to professional librarians. This may be occurring because this is a new and challenging format of material, and one for which cataloging standards are currently being formalized,* or because there is, as yet, a relative paucity of records to be derived for Internet or other electronic resources. Whatever the cause, it represents a challenge to paraprofessional catalogers. But while descriptive cataloging for both derived and original records has increasingly fallen within the domain of the paraprofessional, responsibility for higher level subject analysis, classification, and authority work has largely remained with professional librarians.

Outsourcing parts or all of the cataloging function has become a more viable option for library and/or technical services administrators in the 1990s and poses a particular challenge for paraprofessionals. While some of the latter may be hired by the outsourcing contractors, per se, these organizations (e.g., OCLC, ISM Library Technical Services, other stand-alone contract cataloging agencies or freelance catalogers) are increasingly interested in hiring librarian catalogers with expertise with particular languages, formats of material (e.g., government documents, serials, electronic resources), or specialized subject areas. Paraprofessionals are well-versed in those skills required for derived cataloging but may be less adequately equipped to deal with more problematic or complex types of original cataloging. The availability of derived cataloging reduces the number of positions required to support that operation, either within individual cataloging operations or within outsourcing agencies. This trend is one which will bear watching over the next several years.

Physical Processing

Physical processing in a manual environment involved preparing materials for shelving or storage and use in public service areas. In addition to providing local identification marks (ownership stamps, for example), security strips or labels, location symbols, protective coverings (Mylar covers, plastic containers, etc.), material designations (e.g., labels to distinguish large print from other print items, "westerns" from "romance fiction," etc.), call numbers, or other shelving/storage labels would be affixed to each item. Typically this was a functional area staffed en-

* The IFLA Universal Bibliographic Control and International MARC (UBCIM) Programme published the *International Standard Bibliographic Description for Electronic Resources* (ISBD(ER)) in summer 1997 (G.K. Saur, publisher).

tirely at the clerical support level, though paraprofessionals were occasionally employed in large operations for workflow and employee supervision. With the introduction of in-house automated systems, and specifically circulation control systems, bar code labels were added to physical processing tasks, being affixed to the physical item, then scanned and linked to the bibliographic record created by the cataloger. This, too, remained a clerical responsibility, initially. With the derivation or creation of bibliographic records occurring sooner in the overall life cycle of an item, namely, at the ordering (acquisitions) stage, application and linking of bar codes has moved forward and is now more usually incorporated into the acquisitions workflow. If the individual deriving or creating a basic bibliographic record for ordering purposes is a paraprofessional, then he or she will also assume responsibility for bar code application and linking. Given that physical processing is largely a "line" operation, it is unlikely that there will be significant changes in allocation of staffing levels in the near future.

Binding and Repairs

Responsibility for binding and repairs has sometimes resided with the physical processing unit, sometimes with selection/collection development, sometimes with preservation and conservation, and sometimes with acquisitions. Large technical services operations may support a stand-alone unit for binding and repairs. Just as the administrative location of this functional area has varied, so too have the assignment of staffing levels. In some large academic or public libraries, decisions about which materials to bind or repair and when are the responsibility of a professional librarian. Some medium-sized libraries (as determined by collection size) may assign this responsibility to a paraprofessional. Other types and sizes of libraries assume this to be a high-level clerical function or have a paraprofessional oversee the operation. The binding and repairs function involves allocation of budget, determination of priorities, negotiation with binders, and the creation and maintenance of tracking files. Assignment of staff will depend on the size and nature of the library, its collection, and its budget, and will vary accordingly. Automated record creation, item tracking, and budget allocation has removed some basic input and maintenance functions to a clerical support level, but judgment remains the key element for the position of managing an efficient and effective functional unit and seems a variable unlikely to change in the foreseeable future.

Circulation

Circulation is, likewise, a function which has, at times, been associated with technical services and at others with public services. More recently, it has also come under the rubric of information systems or systems support services—itsself an "orphan" in the traditional bifurcated

organizational structure of public versus technical services. While patron/user registration, check-in and check-out of materials, reserves, and overdue payments are activities carried out in the public areas of a library, creation and maintenance of patron registration files, overdue notice generation and processing, and recovery of overdue/missing items may be considered part of the technical services function. As with some other areas described earlier, the majority of circulation activities are done by clerical support staff, sometimes under the supervision of a paraprofessional. Even with the early introduction of automation relative to other functional areas within libraries, staffing levels within circulation have remained largely stable across time. Since a large portion of the work deals with creating and maintaining files (in addition to dealing directly with library users), clerical support staff have continued as the appropriate level of staffing in transitions from paper-based to computer-based record-keeping. This allocation seems unlikely to change in the foreseeable future.

THE ROLE OF THE PARAPROFESSIONAL IN TECHNICAL SERVICES IN LIBRARIES: REFLECTING ON THE PAST, SPECULATING ON THE FUTURE

The existence of nonprofessionals within libraries has a long, though undocumented, history. Evans (1979) provided one of the more complete accounts of the paraprofessional within libraries, while several articles have been written since the early 1970s documenting library techniques programs in Canada, and the role of the library technician in libraries (see, for example, the most recent article by Weihs, 1997). Generally speaking, however, there has been little formal research into the placement and utilization of paraprofessionals in libraries as a whole or within particular administrative units. Addressing the future role of the paraprofessional in technical services will necessarily involve speculation based on past indicators rather than extrapolation from a base of empirical research. It is primarily the author's opinion which follows.

With the exception of the employment of paraprofessionals in "sole person libraries," such as small, special or public libraries, or in small- to medium-sized public libraries, the role of this level of staff in technical services has been largely that of "handmaiden" to professional librarians. That term is not intended in any derogatory or devaluing sense but to indicate the support function ascribed to the paraprofessional. When the influx of materials became too great for librarians to handle on their own, nonlibrarians with a sound base of training and skills were hired to contribute to the work processes and to help minimize arrearages. As salary levels of professional librarians increased, the possibility of hiring lower paid, but well-skilled, paraprofessionals became more attractive to library administrators, particularly in the technical services area. In a sense, this paraprofessional group played a "shadow" role to librarians, assuming

responsibility for some of the "nonprofessional" work processes. With the introduction and subsequent increasing sophistication of information technologies in technical services, there was a general "up skilling" in job levels. Numbers of clerical support staff decreased, while the number of paraprofessionals increased as they assumed support-level jobs and also work assignments previously done by librarians. The number of professional librarians in technical services tended to stay the same or slightly decrease, at least in hands-on activities, assuming, instead, more of the supervisory and management functions related to policy, operational and workflow design, and staffing issues (Howarth, 1993).

This overall rise in the level of staffing required in increasingly computer-based technical services meant that fewer, but higher paid, employees were needed to maintain the outputs achieved in the manual environment. Library administrators began exploring less costly alternatives to in-house collections processing, considering opportunities for outsourcing parts or all of technical services operations. Anecdotal evidence would suggest that, where selection, acquisitions, cataloging, and materials processing have been contracted externally, internal staff previously engaged in those activities have either been reassigned within the library or released from employment. Librarians have often been retained to oversee the contract or to maintain quality control functions, such as database administration, authority control, or sampling and evaluating outputs from the outsourcing agency. Administrators may be more open to paying for expertise than to supporting duplication of effort. While agencies that contract for technical services operations have hired paraprofessionals to perform the same kinds of skilled tasks they would have been assigned in a similar unit within a library, there are obviously fewer jobs available than would previously have been available.

Librarians engaged in selection or cataloging, for example, have experienced similar challenges from outsourcing but have found opportunities in other areas requiring professional qualifications and training or in an increasing range of so-called nontraditional jobs. Such opportunities may require transposing a set of skills from a library setting to another environment. The librarian-cataloger's expertise in organizing and providing access to a variety of resources can translate well to designing and developing digital libraries or collecting and organizing subject-specific Web sites, for example. Where outsourcing has been applied to parts or all of an existing technical services operation, staff survival has been dependent on the ability to translate existing skills sets into other areas of the library where positions are available. Generally speaking, such opportunities appear to have been more accessible to librarians than to paraprofessionals, perhaps because the former have a set of skills that are more adaptable or fluid or more widely applicable than the latter. Again, lack

of comparative research undermines the preceding statement as conjecture rather than as fact.

Nonetheless, it may be on the ability to define a role that is unique from that of clerical support staff and librarians that the future of the paraprofessional may depend. As suggested previously, administrators may be less reluctant to pay for specialization and expertise than to support positions that have even the appearance of duplication or replication of effort. If outsourcing all or parts of technical services operations is seen to be more cost-efficient than maintaining those functions in-house, then levels of staff associated with those operations will necessarily be impacted. Where the skills sets of individuals can be utilized elsewhere within the organization, those individuals will be placed accordingly. The following will address those areas where paraprofessionals may find opportunities for defining unique and unchallengeable niches insofar as that is possible within the current operating environment in libraries.

The education and training of paraprofessionals has traditionally been focused on practice rather than on theory. The acquisition of hands-on skills which can be applied directly to a particular job or workplace is emphasized over the ability to extrapolate from first-principles—a hallmark of graduate education for librarians. Highly trained and well-skilled paraprofessionals have performed useful and immensely valuable functions within technical services. Such a skills-focused orientation can be readily accommodated in areas which are increasingly being viewed as functionally related to technical services. Record keeping and management in a variety of organizational settings is one such area where the skills of the paraprofessional would find resonance. Similarly, technical tasks associated with the preservation and conservation of materials would provide a logical fit for the highly trained paraprofessional. Apart from aspects related to policy, management, or evaluation, many of the activities associated with maintaining archival collections are well suited to paraprofessional expertise. While those more closely familiar with each of the preceding examples of other technical services-related areas could better define specific activities appropriate for paraprofessionals to perform, the three examples cited above are areas with increasing need for individuals with varied technical skills, a good sense of judgment, and solid decision-making skills related to pragmatic activities and direct hands-on tasks. Such areas increasingly require individuals with some computer hardware and software literacy as well as experience with designing and maintaining databases for organizing and tracking materials. Paraprofessional training, and particularly the education of library and information technicians in Canada, has emphasized technical skills associated with computer-supported applications in libraries and other information-focused organizations.

CONCLUSION

The particular challenge for the paraprofessional will and must be to identify and strengthen those skills and aptitudes which distinguish this level from others within the technical services area and to stake new and unique territories within libraries and other information agencies. Rather than being a "shadow" librarian or a "glorified clerk," the paraprofessional must establish and maintain an appropriately broad, but clearly identifiable, niche to demarcate this from other levels of staff, both within technical services and the library as a whole. In an administrative climate that demands increasing accountability, it may be dangerous to be less than distinct, ill-advised to be vaguely definable or possibly overlapping. For the purposes of survival, it may be wise to address the "para" in paraprofessional and to emphasize, rather, the unique skills sets and specialty areas in which competent, technically literate, applications-focused nonprofessionals can maximize their training and performance.

When paraprofessionals began to appear in libraries in increasing numbers in the late 1960s and throughout the 1970s, professional librarians feared for their jobs. Logic prescribed that, if administrators could find individuals with job skills similar to librarians to perform professional tasks at a lower cost, then paraprofessionals would come to dominate libraries as a whole or particular units, such as technical services, as appropriate. While the initial increase in numbers of paraprofessionals relative to librarians seemed destined to bear out this prediction, the changes to work processes, content, and workflow effected through automation, especially in technical services operations, impacted staffing allocations in terms of numbers, levels, and skills or knowledge-based requirements. Currently, paraprofessionals are at far greater risk of being replaced by librarians than vice versa. As emerging technologies continue to expand the boundaries of opportunities available to information specialists, the viability, indeed the tremendous growth potential, for both librarians and paraprofessionals can perhaps best be realized and maximized by each viewing the other as related but different, separate but similar. Cooperation rather than competition will be essential to defining unique vocational niches and valued work assignments across a broad spectrum of technical services-related activities in public and private sector organizations. Without such diligence and commitment, other groups or individuals may slip up the middle to claim the opportunities that would have been seized by librarians and paraprofessionals negotiating in a more complementary than contrary fashion to establish occupational "territories" which best exploit and promote one another's particular skills sets and clearly defined areas of expertise. Ultimately, the continuation of particular staffing levels within technical services and, indeed, of the operational unit itself, will depend not so much on "survival of the fittest," as on the attraction and appropriateness of the organizational and operational "fit."

REFERENCES

- Busch, B. J. (1985). Automation and reorganization of technical and public services. *SPEC Kit Flyer*, 112.
- Coney, D. (1939). The administration of technical processes. In C. B. Joeckel (Ed.), *Current issues in library administration* (Papers presented before the Library Institute at the University of Chicago, August 1-12, 1938) (pp. 163-180). Chicago, IL: University of Chicago Press.
- Dougherty, R. M.; Wadsworth, R. W.; & Axman, D. H. (1967). *Policies and programs designed to improve cooperation and coordination among technical services operating units* (Occasional Papers No. 86). Urbana-Champaign, IL: University of Illinois, Graduate School of Library Science.
- Evans, C. W. (1979) The evolution of paraprofessional library employees. In M. H. Harris (Ed.), *Advances in librarianship* (vol. 9, pp. 64-101). New York: Academic Press.
- Freedman, M. J. (1984). Automation and the future of technical services. *Library Journal*, 109(11), 1197-1203.
- Gorman, M. (1979). On doing away with technical services departments. *American Libraries* 10(7), 435-437.
- Gorman, M. (1980). Technical services in an automated library. In F. W. Lancaster (Ed.), *The role of the library in an electronic society* (Proceedings of the 1979 Clinic on Library Applications of Data Processing) (pp. 48-59). Urbana-Champaign, IL: University of Illinois, Graduate School of Library Science.
- Gorman, M. (1983). The ecumenical library. *Reference Librarian*, 9(Fall/Winter), 55-64.
- Gorman, M. (1985). *The impact of technology on the organisation of libraries*. London, England: CLSI Publications.
- Holley, R. P. (1981). The future of catalogers and cataloging. *Journal of Academic Librarianship*, 7(2), 90-93.
- Howarth, L. C. (1993). The impact of automation on operations and staffing configurations in cataloging departments in public libraries. *Technical Services Quarterly*, 10(4), 11-28.
- Howarth, L. C. (1995). Modelling technical services in libraries: A microanalysis employing domain analysis and Ishikawa ("Fishbone") diagrams. *Technical Services Quarterly*, 12(3), 1-16.
- Malinconico, S. M. (1983). Technology, change & people: Hearing the resistance. *Library Journal*, 108(2), 111-113.
- Shachtman, B. E. (1955). Technical services. *Journal of Cataloging and Classification*, 11(1), 59-114.
- Tauber, M. F., & Associates. (1954). *Technical services in libraries*. New York: Columbia University Press.
- Weihs, J. (1997). Technical services education for library technicians in the 1990s. *Technical Services Quarterly*, 15(1/2), 43-45.

ADDITIONAL REFERENCES

- Cohen, J. L. (1949). A general consideration of the Technical Services Division in libraries. *College & Research Libraries*, 10(1), 46-49.
- Swank, R. G. (1948). The catalog department in the library organization. *Library Quarterly*, 18(1), 24-32.