

How Libraries Cope with Interdisciplinarity: The Case of Women's Studies

by
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IN THE LIVELY DEBATES about interdisciplinarity, one of the central tools of research and teaching, the library, is rarely mentioned. When interdisciplinary scholars and academic librarians do attempt a dialogue, they may find themselves at odds, because integrative studies call into question the familiar verbal, numerical, and spatial systems employed by libraries to organize information sources. Libraries, like the disciplines and professions they serve, embody values that shape the world of knowledge and provide a framework for the construction of new knowledge.

My intention in this paper is to relate how librarians face the challenges of interdisciplinarity and to outline some problems that still await solutions. The sequence of topics reflects the segmented way librarians typically conceptualize their work, as I treat in turn cataloguing and classification, collection development and preservation, services to library users, and the impact of new technologies. My focus is more pragmatic than theoretical, although I touch upon themes that specialists in the philosophy and sociology of knowledge may wish to pursue.

The emerging field of Women's Studies, which has generated a massive amount of new knowledge over the past twenty years, illustrates many of my points. Most integrative fields, from biotechnology to Third World studies, challenge the implicit values that undergird familiar information systems. Women's Studies is a particularly apt example because the field is so self-consciously value-laden. Like African American Studies, Gay and Lesbian Studies, and similar fields. Women's Studies grows out of a movement for equality in social, economic, political, and cultural spheres. The exposure of values and beliefs hidden deep within supposedly neutral structures is not merely a by-product of the existence of Women's Studies, but one of its primary goals.

The problems I address in this paper derive both from Women's Studies' interdisciplinary nature and from its diverse feminist perspectives. It is not my purpose here to provide an explication of feminist perspectives nor a full account of the ways they challenge received knowledge systems. I assume some familiarity on the part of my readers with the basic goals and curricular content of Women's Studies. For those seeking more background, the writings of Jane Duran (1991), Elizabeth Kamarck Minnich (1990), and Catharine R. Stimpson (1986) offer different but complementary viewpoints on the larger meanings of academic feminism.

Library science is concerned with knowledge systems, the structures of information organization, and the mechanisms of information retrieval. Women's Studies, by comparison, is concerned with the politics of knowledge systems and information structures. It uncovers "women's ways of knowing" (to borrow a phrase from Mary Belenky et al., 1986) by investigating how gender influences the *creation* and *use* of human knowledge. Feminist scholars challenge received opinions about sex differences in myriad ways—from tracing parallel literary traditions in the under-appreciated writings of women to seeking explanations for measurable differences in men's and women's math ability. Joanna Russ (1983), Dale Spender (1982), Lynne Spender (1983), Dorothy Smith (1978, 1987), and other feminist thinkers have explored the ways that women-centered knowledge conflicts with the theories and methods of the traditional disciplines, and they have elucidated how women's knowledge is suppressed in a male-dominated society. Their critical analysis of the control of information is an important strand in the evolving understanding of how patriarchy operates and is sustained over time. These large questions that feminists raise about "gendered" knowledge and male vs. female values are concretized, but not resolved, in the library.

Classification: Putting Women in their Place

Libraries are highly organized systems which provide access to information which is, by and large, contained in print materials. Although electronic information access is rapidly altering the methods of literature searching (a theme I will explore later), library systems remain grounded in the reality of the book as a physical object—a bundle of paper, cloth, board and ink that can only be in one place at a time. That place is symbolized by a unique location code, or call number, assigned to each book. Call

numbers facilitate the location of known works, of course, but a straightforward alphabetic sequence or any other orderly arrangement would serve the purpose just as well. More importantly, this code or call number also represents what the book is about, its general subject. By assigning call numbers, librarians impose a physical order that allows readers to browse and thus to discover works previously unknown to them. In fact, the fundamental objective of library classification is to bring works on similar topics together on the shelves (Chan, 1981).

Classification systems for library collections, like any knowledge systems, are products of their times and cultural contexts. The two systems commonly encountered in the United States—the Dewey Decimal System and the Library of Congress System—were designed as universal, hierarchical outlines of the full scope of human knowledge. Yet their late-nineteenth-century origins inevitably limit them. The Library of Congress scheme (which is commonly found in larger academic libraries and from which this paper's examples will be drawn) puts women in their place in the H's, the social sciences, and more specifically in the HQ's, the subdivision headed "The Family. Marriage. Woman." Obviously, this rubric reflects a rather narrow vision of women's proper sphere and fails to include many topics that fall within contemporary Women's Studies. As a consequence, less than a quarter of the current books relevant to Women's Studies research and teaching are assigned call numbers in the HQ's (Searing, 1983). Practical consequences follow from the determining of physical location by subject classification. Since works on women's health are shelved in the R's with other medical guides, literary criticism of the works of women authors shelved in the P's by nationality and period, studies of female psychology in the BF's, and so on, one cannot engage in the sort of browsing and serendipitous discovery that should ideally support interdisciplinary scholarship.

Of course. Women's Studies is not the only field affected adversely by the historical limitations of classification systems. Other modern subjects—space colonies, video art, surrogate motherhood, urban ecology—must be squeezed into pre-existing outlines of knowledge that no longer fit the shape of current scholarly output. Rather than dismissing such topics as irrelevant or unimportant because they fall outside the mainstream of standard systems for storing and communicating knowledge, we must try to bring these subjects, as Black feminist theorist bell hooks phrases it, "from margin to center."

If modern inventions and concepts place strains on the traditional categories for classifying information, then new juxtapositions of old ideas, which might be seen as both the means and the end of integrative study, pose an even knottier problem. Some interdisciplinary writings resist tidy slotting into existing classifications, resulting in inconsistent call numbers for works on similar or related topics. The feminist critique of scientific theory, a rapidly growing subfield of Women's Studies, provides an example. Ruth Bleier's 1984 book, *Science and Gender: A Critique of Biology and Its Theories on Women*, is classified with other biology books under QP 34.5. But Lynda Birke's 1986 work, *Women, Feminism, and Biology*, is shelved under HQ 1154. Writings that cross the boundaries of the disciplines, that draw on more than one theoretical or methodological tradition, often have no self-evident home in the stacks.

Within the walls of the library, the classification system functions as a hegemonic representation of human knowledge. To better meet their clients' needs, a few newer, specialized libraries have started from scratch with women-focused systems for organizing information. The independent Feminist Library in London, for example, uses a dozen major categories for nonfiction, including sections such as "Education" and "History" that correspond roughly to traditional classification, as well as major sections labelled "Sexuality," "Lifestyles," and "Violence against women" that have no counterparts in general library systems. Indeed, the use of the heading "violence against women" to organize materials on wife-battering, rape, incest, sexual harassment, and cultural practices such as bride-burning or footbinding, bespeaks a very different view of women's experiences than implied by traditional knowledge systems.

Generally speaking, however, few libraries develop alternatives to the Library of Congress and Dewey classifications, because reclassifying a library is a complicated and extraordinarily expensive task. Moreover, as increasing distance in time from these systems' origins deepens sensitivity to the values embedded in them, it simultaneously nurtures skepticism that *any* system could be universal or value-free. This skepticism is further fueled by the prevailing postmodern mood that blurs the line between scholarly and popular, "high" and "low" culture, and by feminist scholarship that persistently scrutinizes the values underlying all aspects of our culture, society, and individual psyches.

Although a few visionary librarians have called for radical reform (Miller, 1985; Humphreys, 1987), most librarians are resigned to the inadequacies of existing classification systems. Rather than embarking upon grand scale improvements, they focus on communicating the intricacies of the systems to library users, on promoting more sophisticated research methods than browsing, and on alerting users to implicit values in the systems. Librarians' vital responsibility to help researchers use imperfect information systems will be discussed in greater detail later in this paper.

Applying Classification Systems: Gender as Subject

Consulting the library catalog is the best alternative to browsing the shelves. Subject catalogs are intended, in part, to compensate for the limitations of classified locations. Multiple subject headings in a library's card or computer catalog permit one to identify a title from several topical entry points. Using the catalog, one browses through subject headings instead of

scanning the shelves. In fact, browsing via subject headings is possible in many situations where physical browsing is impossible—for instance, where a union catalog lists books held in many different branch libraries, or where the catalog combines in a single file records for books, films, sound recordings, videotapes, and electronic sources. Moreover, the catalog records are always accessible, while the materials migrate off the shelves and back again. Yet subject catalogs have their own quirks and deficiencies which prove especially problematic in Women's Studies.

To maximize the efficiency of browsing in a library catalog, all the entries for books on the same topic must be filed under the same term or phrase. Therefore, librarians have developed, and periodically updated, standard thesauri of subject headings. Most academic libraries follow guidelines set forth in *Library of Congress Subject Headings*, or *LCSH*, a voluminous "authority list" constructed on the principle that a work should be described by the term or terms that an average educated reader would use. This basic premise implies that subject headings must inevitably change as common usage shifts and new words enter the language. In practice, authorized terms survive far longer than ordinary usage. AUTOMOBILES remains the authorized heading, not CARS; MOTION PICTURES, not MOVIES or FILMS; and the cumbersome INTERDISCIPLINARY APPROACH IN EDUCATION, not INTEGRATIVE STUDIES.

However slowly, subject headings do change. *LCSH* has gone through several editions, and supplements are issued periodically. In direct response to pressures from socially aware librarians and library users, the term NEGROES was changed to AFRO-AMERICANS in the 1960s, and demeaning headings such as MAMMIES were abolished. The women's movement likewise influenced cataloging practices. PILGRIM FATHERS was replaced by PILGRIMS (NEW PLYMOUTH COLONY), the Victorian phrase WOMEN—SOCIAL AND MORAL CONDITIONS was eliminated, and FEMALE OFFENDERS was substituted for DELINQUENT WOMEN.

Other more subtle changes grew out of feminist scholarship in linguistics. One major switch involved not new vocabulary but revised syntax. Headings using the word "as" were reworded—WOMEN AS SCIENTISTS became WOMEN SCIENTISTS, WOMEN AS AUTHORS simply WOMEN AUTHORS, and so forth. The "as" construction emphasized the sexual identity of the subject and made the occupation secondary. The implicit message was that a woman scientist or writer is peculiar (Marshall, 1977). In the newer form of heading, the role is highlighted by the noun, with WOMEN (or MEN) as a modifier.

Behind each of these revisions lies a shift not just in wording, but in sociocultural values. As previously "neutral" phrasings take on a pejorative connotation, they cease to serve as simple pointers to the content of library holdings and begin instead to imply certain negative values. Librarians who champion revising headings argue that the implied values overshadow the informational content of the headings—that is, racist and sexist subject headings, or merely old-fashioned ones, actually hinder the library user's search for reading materials. Others argue that pejorative terms are historically accurate and must be employed to properly describe certain materials.

Thesauri of subject terms include hierarchical structures of broader, narrower and related terms; in library catalogs, these are typically displayed as "see" and "see also" references. Radical feminist thinkers have posited that hierarchy, per se, is deeply masculinist and at the root of Western patriarchal society. Even if one accepts unquestioningly the hierarchical principles of subject cataloging, one cannot help noticing another aspect of patriarchal culture—the unspoken acceptance of the male as the norm. Lacking further elaboration, a word or concept is assumed to refer to the male. This imbalance is not immediately evident in a library's catalog, where the subject heading WOMEN IN LITERATURE occurs twenty-four times for each single occurrence of MEN IN LITERATURE. One must remember, however, that for many years the bare phrase LITERATURE was applied to "general" critical works that treated only male authors and characters.

Clearly, more work remains to be done, if subject catalogs are to be free of all gender bias. The preparation and publication of *A Women's Thesaurus* (Capek, 1987) demonstrated an ongoing need to devise better subject terms and to push for their acceptance. Simultaneously, *Women in LC's Terms* (Dickstein et al., 1988) recognized and met the researcher's need for aid in utilizing existing systems to their full potential. The recent publication of Women's Studies thesauri in Dutch (Drenthe & van derSommen, 1991) and Japanese (*Thesaurus*, 1990) and similar efforts underway in other countries remind us that subject cataloging must not only suit the times, but also the cultural and linguistic contexts within which users seek and read library materials.

Streamlining Catalog Records:

A Troublesome Practice

The language of subject headings poses irksome obstacles, but a persistent and imaginative researcher, with the aid of an able reference librarian, can usually overcome the catalog's shortcomings. More damaging in the long run, I believe, is the failure to assign enough subject headings to describe books in sufficient depth. In theory, any number of subject headings might be applied to a book, providing they all accurately denote its contents. In practice, catalogers seldom assign more than three or four headings per book. This suffices for a narrowly focused monograph but rarely proves adequate for anthologies, conference proceedings, or even wide ranging surveys by single authors.

Two examples, one discipline-based and one interdisciplinary, illustrate this problem. A popular classroom anthology, edited by Juanita H. Williams and titled *Psychology of Women: Selected Readings* (2nd ed., 1985), presents some forty articles, including essays dealing explicitly with Darwinism, menstruation, children's play, Black adolescents, mother/daughter communication, abortion, career choices, male/female friendship, lesbianism, widowhood, and many other subjects. How is this rich collection listed in the library catalog? Under its author, title, and a single subject heading: WOMEN—PSYCHOLOGY. *The American Man*, edited by Elizabeth Pleck and Joseph Pleck (1980), is a respected interdisciplinary textbook in gender studies. This volume has four subject headings assigned to it: MEN—UNITED STATES; MASCULINITY (PSYCHOLOGY); SEX ROLE; and MEN—UNITED STATES—SEXUAL BEHAVIOR. While informative of the book's overall themes, these headings fail to reveal the subjects of its sixteen essays, which include studies of sodomy in 17th-century New England, gambling on horse races by gentlemen in Colonial Virginia, the image of the ideal husband in 19th-century marriage manuals, the mountain man as Western hero, the social functions of the urban working-class saloon, the Boy Scouts, and Vietnam and the "cult of toughness" in foreign policy.

Current cataloging practice actually obscures the rich content of these and similar books. This is a serious problem because anthologies have emerged as a popular and necessary form of publication in interdisciplinary fields. In the semiannual bibliography *New Books on Women & Feminism*, multi-author, edited volumes comprise a significant portion of the listings. Citations in *New Books on Women & Feminism* are arranged by subject, revealing differences in the reliance on anthologies among academic fields. In the 1989 and 1990 listings, 10% of the entries under literary history and criticism were edited volumes. The figure rose to 15% in history, 24% in psychology (not counting self-help and pop psychology titles), and a full 30% in education.

It is ironic that standard reference sources such as *Psychological Abstracts* and *ERIC* (the index to the journal and report literature in education) offer more extensive subject access to short articles than library catalogs provide for full books. The relative expansiveness of subject coverage in journal indexes may reflect their earlier conversion to electronic formats. Although machines have limited capacities, and larger databases cost more to maintain, it is nonetheless much easier to create and update subject headings in an online environment than in a card file. One may speculate that the paucity of headings in library catalogs is an artifact of the formerly ubiquitous card catalog, in which all the relevant data on a book (including the subject "tracings") had to be squeezed onto a 3x5" card. Card catalogs are rapidly becoming obsolete; computerized catalogs are now commonplace in North American libraries. Computerization makes it feasible to present many more access points by subject to a single book, yet library catalogs have not followed the lead of automated indexes and abstracts.

The reality of the library budget, rather than the bright potential of technology, defines the scope of the catalog. Excellent cataloging is labor intensive. It requires a firm grasp of a book's subject and knowledge of its potential readers. When done well, cataloging is a time consuming and costly enterprise. Thus, the purchase price of a book is but a small percentage of the full cost of getting it on the shelf and thence into a reader's hands. Limiting the intellectual labor expended on each title reduces the processing cost, which in turn can translate into dollars for acquiring more materials. Less time spent on cataloging also gets new books to the shelves faster. Briefer catalog records can be easily justified as cost-effective.

Indeed, harsh budget cuts at some institutions have inspired proposals to abandon subject headings altogether (at least for some classes of materials) and to rely on computer catalogs to retrieve keywords in book titles. Although keyword searching is a useful adjunct to searching for established subject terms, it is hardly an adequate substitute. For one thing, researchers would be forced to imagine, and then input, all the possible synonyms and related terms for their subjects of interest. Someone seeking publications about BATTERED WOMEN, for example, would need to query the system using such additional terms as DOMESTIC VIOLENCE, WIFE ABUSE, FAMILY VIOLENCE, and WIFE BEATING. Moreover, simple keyword access is ineffective in the humanities, where authors so often choose metaphorical titles.

Although it is doubtful that machines can ever replace expert catalogers, some interesting approaches to automated cataloging have been proposed. For example, researchers have recommended enhancing catalog records by adding terms from a book's index and table of contents, as a substitute for or supplement to established subject headings. This approach promises greater depth of topical access by offering more searchable terms per record. There is also a greater likelihood that the terms thus derived will correspond to the actual terms used by authors and readers. Enriching the database is one solution; improving the search protocols is another. Research on how readers actually use subject catalogs points toward the development of software to permit asking more complex questions of the system, to create more legible displays of catalog records, and to improve the interface between catalog and user (Markey, 1984). But libraries are a long way from adopting such innovations as routine practice, and meanwhile far too much published information, particularly on cutting-edge topics, vanishes into a bibliographic void.

The Development and Preservation of Collections

Classification and subject cataloging are aspects of library practice whose relevance to integrative studies is readily apparent. In addition, two other vital components of library service must be considered when colleges and universities move in the direction

of an integrative curriculum and research mission. To some extent, these are practices more open to local variation than are classification and cataloging. I will address, in turn, building collections and serving library users.

The growth and development of library collections involves many separate activities. Librarians and teaching faculty typically share responsibility for selecting new materials. (Where approval plans are in place, commercial vendors also play a role in acquisition decisions.) In fact, collection development is the arena in which faculty and librarians most often come into conflict, and where values can collide rather nastily. Faced with more requests for the purchase of new titles than the budget can support, a librarian may reasonably argue for a long-range perspective leading to a well-balanced core collection, while a faculty member, just as reasonably, points to an immediate need for materials to support this semester's classes. In such cases, librarians usually have recourse to a written collection policy. Ideally, the policy has been developed jointly by librarians and faculty to assure that a strong collection of sufficient breadth and depth is built and sustained over the years. The policy may be quite specific about levels of collecting in certain disciplines, genres, languages, and publication formats, or it may consist of more general guidelines. A recently published compendium of Women's Studies policies reveals diverse approaches to building collections in one interdisciplinary field (Women's Studies Section, 1992).

Some common principles for developing collections have proven problematic for Women's Studies. Consider, for example, the belief that some materials are appropriate for academic libraries, while others belong in public libraries. Among the latter are romance novels, cookbooks, health manuals, popular biographies, political pamphlets, and a host of other non-scholarly writings. Yet these genres have been used as primary source material for feminist historical and literary studies. Barbara Welter's (1976) groundbreaking account of the nineteenth century American "cult of true womanhood" relied on popular advice books for evidence of social values. In the future, it will be quite costly to purchase in microfilm or reprint editions the materials we pass over as inconsequential today. For example, a survey of women's studies researchers revealed a surprising reliance on the newsletters of women's organizations as sources of information, yet these action-oriented publications are rarely found in academic libraries (Anderson & Searing, 1989).

The "information explosion" as we approach the twenty-first century—signaled by an enormous increase in the universe of printed publications and a parallel boom in the development of audiovisual and electronic media—brings with it new pressures on library budgets. At issue is not simply how much money is available, but how it is divided.

Library budgets are frequently allocated by academic department. This widespread practice recognizes the formal power bases on campus but creates serious challenges for programs in Women's Studies, Ethnic Studies, Environmental Studies, and integrated studies broadly defined, all of which are forging new administrative and collegial structures as well as new curricula. When an interdisciplinary program involves faculty across traditional departments, it both broadens its political base and heightens its intellectual rigor. It does not, however, necessarily improve the program's chances to compete for campus resources. On some campuses, the need to legitimize Women's Studies—and thus position it as a unit with a valid claim on library funds, clerical positions, and so on—has led innovative interdepartmental programs to transform themselves into traditionally constituted departments. (It should be noted that, in some cases, this transition has impacted negatively on librarians, who, lacking the status of teaching faculty, find themselves suddenly excluded from decision-making in the newly created department, whereas they were formerly equal contributors to a collective feminist effort.)

Dividing the book budget by academic department is merely one model, albeit one frequently followed. Some libraries shape selection policies and allocate funds on the basis of the traditional disciplines as defined by the Library of Congress or Dewey Decimal classification systems. All items falling within certain call-number ranges are charged to a single budget line, and a subject bibliographer on the library staff has oversight of the collection within those classifications. Where the classification system doubles as the framework for decisions about acquisitions, the traditional discipline-based knowledge structure is reinforced.

The ordering of new materials is merely one piece of a larger activity, often termed "collection development and maintenance." The care of collections includes discarding unwanted materials and preserving materials damaged by overuse or environmental conditions. Preservation may take several forms, among them physical repair of the volume, purchase of a reprint edition, conversion to microfilm, or conversion to a digitized image. In recent years, attention has focused, with growing alarm, on the widespread deterioration of print collections in the world's libraries.

How much of our printed heritage can be saved? What materials have highest priority for replacement or reformatting? Value judgments clearly enter into these choices. Increasingly, the choices are not made volume by volume, but as part of massive interinstitutional projects at the local, regional, and national levels. Large-scale preservation programs address the need to assure continuing access to materials in particular formats, languages, or subject areas. One library, for instance, may agree to preserve a valuable historical collection in African history, while its neighbor accepts responsibility for acquiring and preserving Francophone literature. The LC classification system is typically used to frame such agreements, thus strengthening the grip of this particular knowledge structure on library practices and inhibiting interdisciplinary preservation efforts.

Collaborative preservation programs are possible because, over the past decade, librarians have increasingly emphasized the need for "resource sharing." Advances in document delivery systems, particularly overnight courier services and fax machines, have increased the efficiency of interlibrary lending and have led to a new emphasis on cooperative collection building. In fact,

talk of a new paradigm for the research library has become commonplace in the library profession.

Historically, certain libraries have been known for their strong collections in particular areas, and the reputations of such libraries influenced many scholars' decisions about graduate school, employment, and sabbatical residences. A researcher needed to be at the library in order to use its catalog, consult its staff, and make use of its materials. Today, however, the reality of the library as a physical place is overshadowed by the concept of the "virtual library." The measure of excellence for libraries is no longer the number of volumes owned, but the universe of information to which library users have ready access. Seen in this light, a library committed to the provision of expensive electronic indexing services, with a top-notch interlibrary loan staff, may serve advanced researchers better than one that invests more conservatively in maintaining subscriptions to journals.

The most important development on the path to the virtual library has been the growth of a national database of library holdings. The OCLC network, in conjunction with other regional and specialized databases, provides instant information on the location of published materials across North America. In effect, the network is a union catalog for thousands of libraries. Although first developed as a tool for sharing processing costs, OCLC has become a vital scholarly research tool. Enhancements to make searching by the general public easier, the addition of records for manuscripts and archival materials, and the gradual conversion of older records all enable a much wider awareness of, and use of, library holdings. The expanded reproduction and marketing of one-of-a-kind collections in microfilm and optical disk, and the ability to retrieve digitized texts from remote computers, further erode the concept of the library as a warehouse of books.

On the one hand, advances in information technology and the vision of the virtual library suggest great benefits for Women's Studies scholars. One day, perhaps, all the riches of the Schlesinger Library on the History of Women in America, located at Radcliffe College, will be accessible from any personal computer. (Many of the Schlesinger's books and vertical files are presently distributed on microfilm.)

On the other hand, faced with a mushrooming array of print, electronic, and audiovisual information sources, many scholars already complain of "information overload." Entering undergraduates, in particular, typically lack the skills needed to choose among information sources and to evaluate their contents. At the same time, students labor under strict time restraints, compelled to complete their research projects by the end of a semester. Librarians serve in the crucial role of intermediaries, helping both beginning and advanced scholars make the most efficient and meaningful use of library resources.

Service to Library Users

As library users gain access to a larger and larger universe of sources, libraries face new challenges in accomplishing their mission. To connect the researcher with information, libraries support a constellation of activities usually referred to as "public services" or "reader services," encompassing the reference desk, circulation, interlibrary loan, bibliographic instruction, and other functions.

Interactions between reference librarians and students in Women's Studies courses highlight the challenges of interdisciplinary learning and teaching. Students embarking on a term paper assignment often have difficulty choosing and articulating their topics. They bump up against the rigid discipline-based knowledge systems mentioned throughout this article. For instance, when students investigate a topic such as "counseling services for single teenage mothers," they often don't know whether to consult indexes in psychology, sociology, or education. Undergraduates, as a rule, have not had sufficient experience with library-based research to devise a successful literature search strategy unaided.

Furthermore, most undergraduates lack a grounding in the disciplines and a solid understanding of the varying structures of their literatures. Their grasp on the nature of information in interdisciplinary fields is even more tenuous. An enthusiastic young student who has just discovered feminism may believe that she and her classmates in "Introduction to Women's Studies" are reinventing knowledge single-handedly, whereas another student may be unaware that the Women's Studies information base is less developed than that of mature disciplines. These students will probably approach the library with very different expectations. The first risks overlooking the significant body of feminist literature produced over the past quarter century. The second may be unprepared for the work required to conduct research without sophisticated electronic indexes devoted to women's topics and with varying, frequently inadequate, coverage in standard printed tools.

Advanced standing does not guarantee an easier time. A student accustomed to browsing in a certain area or leafing through a set of familiar journals may suddenly be forced to conduct a rigorous examination of indexes, bibliographies, and other reference works, because his Women's Studies paper topic touches on disciplines outside his major. Many faculty members experience this same phenomenon when they first design an interdisciplinary Women's Studies course.

Classroom instruction in library research strategy, carefully integrated into the course syllabus, can empower students at all levels to do quality research on their own. Moreover, skills in finding and evaluating information become permanent parts of the graduate's mental tool kit for critical thinking and lifelong learning. In addition, library instruction can highlight issues in the politics of knowledge, thus reinforcing ideas broached in the Women's Studies classroom and demonstrating in a down-to-earth, hands-on way the challenges and excitement of interdisciplinary research.

A simple, but effective, exercise involves comparing terminology used to describe women in the *Women's Studies Index* to

that of a discipline-based source such as *Psychological Abstracts*. A variation points to the differences between scholarly and grassroots writing, using sources such as the *Social Science Index* and the *Alternative Press Index* to locate articles. Librarians can lecture effectively about the politics and economics of the publishing world, the role of small women's presses, and the values implicit in subject headings and call numbers, tying these topics back to the students' immediate interests in completing their research assignments. When presented from a critical perspective, library instruction not only communicates practical skills, but constitutes another pedagogical strategy for meeting broader course objectives (Broidy, 1987; Fink, 1989).

Furthermore, by focusing on active learning and empowerment, instruction in library use creates a bridge between what the students already know and the knowledge contained in the library. The insights gained by librarians who have built Women's Studies collections, wedded to new theories of female psychological and intellectual development (Belenky et al., 1986), shape a model of library instruction where students are encouraged "to operate from their own domains of experience, rather than moving immediately into that of the librarian" and thus sharpen their capacity for critical judgments (Huston & Yribar, 1991, p. 83).

New Technologies: Tools for Integrative Studies

Interdisciplinary research and teaching are not the only factors forcing libraries to reassess their principles and practices, of course. Powerful new information technologies are an even stronger catalyst for change. Innovative systems possess the potential to vastly expand and radically transform the ways in which scholars seek and use information.

Computers in libraries are still primarily access tools leading one to printed documents; they do not yet replace those documents. Computerized catalogs still largely mimic card catalogs in both their contents and their searching modes. More and more, however, the texts themselves are available in machine-readable form. At one time, "full text searching"—the ability to extract keywords and passages from anywhere in a digitized document—heralded a future scholarship unhindered by library-imposed knowledge structures. But even minimal experience with full text searching proved it an inadequate methodology; too much of the information retrieved is likely to be irrelevant.

For instance, a simple keyword search for "class" in the University of Wisconsin-Madison's electronic catalog retrieved 4,218 records. In addition to the sought-after references to basic books on socio-economic status, this search identified titles on classroom pedagogy, class A bank notes, legal class actions, advanced-class boiler feed pumps, polynomial residue class rings, class C municipal electric utilities, and class I antigens in human cells, as well as a plethora of published valedictory speeches ("Address to the Class of 1847 ...") and a book titled *American Barns, In a Class by Themselves*. Because electronic catalog records include distinct data fields for author, title, and other bibliographic elements, and because many catalogs now support Boolean logical operators for combining or excluding terms, a sophisticated searcher can avoid this kind of garbage output. Electronic resources that reproduce the full text of articles and other documents, however, sometimes lack such refinements.

Knowledge structures, in the form of call numbers and subject headings, add value to raw information. Current research focuses on designing better and more user-friendly knowledge structures. Hypertext software, in particular, has sparked excitement. In simple terms, hypertext might be described as a glorified system of transparent cross-references, linking information among multiple conceptual avenues and allowing users to "follow their noses" in researching a topic (Gluck, 1989).

Librarians who have experimented with hypertext, to create guides to the locations of services and collections within a library building, for example, praise its responsiveness to diverse learning and information-seeking styles. Some influential scholars have suggested that the sexes reason differently (Gilligan, 1982; Belenky et al., 1986); not all feminists concur. Yet it is undeniable that one outcome of Women's Studies has been to legitimize alternative ways of thinking and knowing within the academy. Any information system that allows for more individual variation on the part of the user is a step toward equity.

Encouragingly, the flexibility of electronic information systems appears to benefit both sexes. Sherry Turkle's (1984) study of the human-computer relationship identified two styles of computer use, which she labelled "soft" and "hard" and correlated, somewhat tentatively, to gender. Among the schoolchildren Turkle observed, girls tended "to see computational objects as sensuous and tactile and relate to the computer's formal system not as a set of unforgiving 'rules,' but as a language communicating with, negotiating with, a behaving, psychological entity" (p. 109). Boys, on the other hand, were intrigued by technical and mathematical, rather than aesthetic, aspects of programming, Turkle shows how factors such as gender shape human relationships with computers, and conversely, how computers are a force in constructing the self-images of their users, children and adults alike.

The human-computer relationship, still barely understood, may be the key to the success of information technology. On the cutting edge of library technological development are "expert systems" designed to replicate human intelligence and decision-making. By programming computers with facts and rules for inference, the designers of expert systems aim to automate the public service functions of the library, much as cataloging functions were automated in the 1970s (Aluri & Riggs, 1990).

With the advent of interactive, multimedia, electronic publications, with the increasing availability of dial-up library catalogs and national databases, and with the continued spread of microcomputers in the workplace and home, one can confidently

predict changes in library knowledge structures. What those changes will look like, and whether they will be beneficial to Women's Studies and other integrative fields, is harder to foresee.

Conclusion

In this paper, I have attempted to show that the information structures and implicit values of libraries interact with the knowledge structures and ideologies of Women's Studies in varied and complex ways. Every discipline, and every interdisciplinary field, has a unique relationship to library structures and practices. Likewise, every researcher brings his or her own learning style and world view to the project of the literature search. Can the library successfully meet the needs of interdisciplinary researchers? Not, the case of Women's Studies suggests, without revised subject terminology, more flexible classification systems, and in-depth labeling of materials.

Libraries resist radical change, in part because the existing knowledge structures reinforce themselves. For example, classification systems are used to organize acquisitions functions, which in turn generate new holdings to be cataloged into the established classifications. Changes in library knowledge structures tend to be reformist (e.g., updating subject headings) rather than revolutionary (e.g., creating a nonhierarchical classification system).

New information technologies promise greater responsiveness to interdisciplinary queries, but their potential has only begun to be realized. In the meantime, curriculum development in Women's Studies should include greater cooperation between faculty and librarians to teach students not just the techniques of finding information but the skills of critical selection and reading. Only by unveiling the values implicit in traditional knowledge structures can we learn to use these systems fully despite their built-in biases. Only by understanding their weaknesses can we begin to imagine information systems better suited to integrative studies.

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