
Role representation in advertisements for library technology: Who is representing what and for whom?

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Library workers in public and academic library systems in the United States and Canada were shown photographs of advertisements for information technology products. Their comments reflect a disparity between the pristine work environments depicted in the ads and the reality of the library work place which is often described as harried, cluttered and unpleasant. The reactions to the pictures are discussed in the context of gender and technology relations.

Introduction

With the proliferation of microelectronic technologies and the enormous impact of these technologies on the workplace and in everyday life, there is a growing call for research exploring what Kling (1992) calls "technologies and social arrangements." Although there has been some exploration of social relations in the context of information technologies such as expert systems and computer-aided design (see, for example, Perrolle 1991), there has been relatively little attention paid to this subject in the context of the library, an institution that has been profoundly affected by computer technologies over the past two decades.

Building on the work of Cockburn and Ormrod (1993), the focus of social relations in this paper involves the gender structure and gender symbolism of some of the newer technologies now used in libraries. Historically, North American librarianship has been a female-intensive profession, yet despite the obviously gendered nature of the library as a workplace, the impact of technological change in this environment has not been studied from the perspective of gender relations. There has been little exploration of the impact of introducing a "male" technology into a "female" environment — either from the perspective of the male and female workers involved or the male and female clients of the library. Research of this type undertaken in other settings reveals that even when women possess complex and specialized technological expertise, they tend to be associated with technologies that are less highly valued than those with which men are primarily associated.

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In their study of gender relations and microwave technology, Cockburn and Ormrod reported a segregation of labour by gender throughout the various facets of microwave design, manufacture, product distribution and consumption. They described this segregation as being based on "concern with things v. concern with people, engineering v. cooking, project v. routine" and concluded that "these are some of the things that seem to determine whether a job will be done by a man or a woman" (p. 57). One aspect of their research concerns the relationship between gender and the status of different home-use technologies which is reflected in a division between so-called "white goods" and "brown goods." Brown goods include consumer items such as stereo equipment, televisions, and video cameras, all of which are considered to be "masculine." White goods, on the other hand include domestic items such as fridges, stoves, washing machines and electric kettles which are considered to be "feminine" products and are perceived to be less complex than brown goods and to carry a lower status among retail sales people.

The key distinction between brown and white goods "is one of function. Brown goods are for leisure and entertainment" (p. 100). To use the words of one store manager, brown goods are the equivalent of "male jewellery" (p. 102). According to Cockburn and Ormrod, the symbolic representations of different classes of electronic consumer goods in marketing, retail arrangements and sales training imply that white is "clean/simple/transparent/functional/ vacuous" while, "brown seems to say complex/clever/obscure/challenging/contentful" (p. 101). This breaks down along gender lines and, "despite the fact that many domestic appliances . . . involve quite complex electronic controls, the complexity of domestic appliances is played down and utility is stressed" (Cockburn and Ormrod 1993, 104).

The notion of 'technology' is deployed in the symbolic differentiation in which the meanings of masculine and feminine are made and in the ascription of unequal importance and value to these spheres. For instance, the very selection and labeling of some phenomena rather than others as 'technology' is significant. Cooking, as much as engineering, is a technology. It involves using tools to transform matter. Yet the two processes are kept conceptually quite distinct. The word 'technology' has come to mean processes men typically create, control and use, not those that women characteristically do. In this dichotomizing, engineering as a masculine technology is ascribed high value, cooking as a feminine not-technology a relatively lower value (Cockburn and Ormrod, 98).

Cockburn and Ormrod's analysis provides a useful framework for understanding information technologies as they are applied in librarianship. For instance, the phenomena identified in Cockburn and Ormrod's study of microwave technology may be analogous to those associated with information technologies as they are applied in library settings. In the promotion of microwave cooking technology, one of the key roles for women has been to "inform and enrol the potential user. Essentially, . . . women [are] employed to serve as an **interface** between the masculine company and the end users of microwave ovens, conceived by the company as women" (Cockburn and Ormrod, 76). It is possible that librarians perform a similar promotional role vis-à-vis information technologies and women and men may be deployed in this promotional role differently for different types of end users, such as male versus female customers or patrons.

It is not unreasonable to assume that different technologies carry different social meanings in the library setting as they do elsewhere. Given the patterns of gender relations associated with the production and consumption of microwave cooking technology, it seems likely that such differences may also be evident in the ways in which male and female library workers and library users are engaged in activities involving different information technologies. The meanings symbolized by these differences with respect to men's and women's capacities, skills and needs are, as yet, nearly completely uninvestigated in the context of the library as a public institution. The value of studying technology relations, i.e. the social relations within and connected to sites concerned with the production and consumption of technologies, in the context of librarianship is particularly important at the present time. As Birdsall (1994) pointed out,

there is no denying the importance of the technological impact on libraries and the opportunities information technologies offer to enhancing library services. The danger is to ignore the political and cultural implications of the electronic library which, in the long term, have far more serious consequences for libraries, librarians, and the users of libraries. The technological foundation of the electronic library serves as a magnet, drawing to it a cluster of social, cultural, and political values, beliefs, images, and concepts that forms a distinct alternative to the traditional conception of the library and librarianship" (p. xiii).

Wacjman (1991), too, addressed the importance of understanding the socio-political context of technological change. "Technology is more than a set of physical objects or artefacts. It also fundamentally embodies a culture or set of social relations made

up of certain sorts of knowledge, beliefs, desires and practices" (p. 149). Inevitably, the study of technology and social relations involves the study of gender "because gender is one of the major structures of the social order and gender relations are found wherever people are found" (Cockburn and Ormrod, 155).

A recent study by Dilevko and Harris (1997) gets at the gender/technology interface through an examination of advertisements for technological products which appear in popular, professionally-oriented journals in the field of business, engineering/computer science and librarianship. Content analyses of 3,000 ads revealed that the distribution of male and female figures in various poses is more egalitarian in ads found in the more traditional library journals, *American Libraries* and *Library Journal*, than in the newer journals *Online* and *Database*, and in ads placed in popular journals directed at business and engineering/computer science professionals. Even in the traditional library journals, however, the depictions of male and female roles in relation to technology are largely stereotypic. Men are often portrayed as deep thinkers who are connected to the future, whereas women are often present in ads in order to convey the notion of simplicity of product use.

In the present study, ads for technology products were used as a means to prompt library workers' observations of the integration of technology into their work settings. Their comments were analyzed as a means of exploring possible themes of technology/gender relations in library work.

Method

An MLIS graduate employed as a research assistant visited six major library systems, three public libraries and three university libraries, located in the province of Ontario, and the states of Ohio and Michigan. During these visits, she interviewed 68 members of the library staff (20 men and 48 women), 32 from the public libraries and 36 from the university libraries. The interviews focused on the nature of the work undertaken by the respondents and, in particular, the types of technologies used in their work. At the end of the interviews, each respondent was asked to examine four photographs of ad pages taken from the journals, *American Libraries*, *Library Journal*, and two from *PC Magazine*. The interviewees were instructed to examine advertisements which show people using information technology products marketed for libraries. For each of the ads, the interviewees were asked to describe the type of library function being performed and to indicate how closely each portrayal approximates their experience or observation of library work.

Shown in random order to the respondents, the ad pictures depicted: (1) A well-dressed Asian man leaning back in a chair, with a keyboard on his lap, looking at an IBM colour monitor with real-estate graphics on the screen; (2) A smiling

well-dressed white woman who is passing books through the 3M materials flow management system; (3) Two young men and a young woman (seated), all white, all well-dressed, arrayed around a colour monitor, in an ad for CA-Unicenter integrated client/server systems management software; and (4) An ad for the Winnebago library automation system showing a young girl seated in front of a monitor with her hands on a keyboard and beside her a middle-aged woman. Both are white, well-dressed, and they are both smiling.

The respondents' comments were collated for each picture and analyzed to identify themes. The use of content analysis to examine textual and other data in order to identify social and cultural constructs is a long-standing tradition in the social sciences (see, for example, Krippendorf 1980 and Strinati 1995).

Results

PICTURE A. MAN AT MONITOR

Technology application

The most frequently elicited reactions, occurring 22 times, were functional descriptions of the technology featured in the ad. In their interpretations of the photograph, 30% of the male respondents and 33% of the female respondents described some form of computer application, such as, CD-ROM, WordPerfect, graphics, or presentation software, and usually indicated whether or not access to a similar technology would be likely to be found in their own libraries. For example, a man who is the manager of computer services in a public library said, "he is either on a CD-ROM or the World Wide Web bringing a document in and graphics. As far as our library is concerned we would, with limited service, provide that service at every one of our regional branches." A female public librarian who is the director of public services said, "he is searching the Internet and has just pulled up some information. We're just starting to make Netscape available in public areas."

Physical set-up/ergonomics

Sixteen respondents made observations about the set-up of the work space shown in the ad, noting in particular the ergonomically incorrect posture of the man who has a keyboard on his lap. A male public reference librarian commented, for example, "the terminal on his lap is not ergonomically helpful — he's probably in the long term, going to be in pain from repetitive strain injury." Similarly, a male academic reference librarian said, "I think our ergonomics committee would have a fit if they saw this guy sitting sideways like that." A male systems programmer in an academic library said, "he won't last long with that posture." Interestingly, more

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than half of the male respondents (56%) made this type of comment, while only 13% of the female respondents referred to this feature of the ad.

The respondents did not see the ad copy accompanying the photographs they were shown for each product. Ironically, the text for this ad reads, "IBM introduces monitors that work with any PC. Suddenly, things are looking better all over . . . Quality you can see. Human by design." The latter comment is particularly interesting in view of the ergonomic troubles spotted by a number of these respondents.

Too much comfort/too much time

Although 14 respondents commented that the man shown in the ad was "too comfortable, too unharried, too relaxed and/or had too much time" to be believable, this observation was made far more often by the female respondents (13 of the 14 who commented on this were women). For instance, a woman who is the head of circulation services in an academic library said, "this person looks like he has all the time in the world." Another woman, the head of special collections cataloguing in an academic library, said, "it doesn't look particularly authentic because he's sitting down and not running in three directions." A woman who is a senior librarian in the business and urban affairs department of a public library commented, "If it's reference it's completely unrealistic because he doesn't look harried, there aren't enough people crowded about him, and he's just too relaxed." A woman who works as a trainer in a public library said, "this does not reflect reality. This person seems to have an awful lot of time on his hands and it's a luxury we don't have."

Lack of clutter

Only women (7 of them) commented on the lack of clutter in the environment shown in the ad. The female head of access and information services in an academic library said, "I think this particular activity is real, but I think the setting is not realistic, that's for sure. It's not done up in such a pristine, or uncluttered or private manner. He looks very relaxed." A woman who is the serials supervisor in an academic library said, "it doesn't remind me of anything I've ever seen in a library. I'd like a clean desk . . . I'd like to know if someone works with a keyboard on their lap . . . maybe he doesn't do it for a living." Another woman who works as the curator of the map collection in an academic library said, "the only thing I can relate to here is that the person has a very, very clean desk and I don't." A library assistant IV who provides ready reference and database management in a branch library in an academic library system said, "We don't have anything in our library that has a PC sitting on a desk that's that cleared off. Usually, you've got things

piled up all over. Even if you try to create a work space, where there's room someone will lay something down."

Technology/work space envy

Four women respondents expressed envy over the quality of the technology and the work environment shown in the advertisement, suggesting that such equipment and surroundings are not available to them in their workplaces. For instance, a library assistant in a public library said, "I see this as behind the scenes, the creation of a newsletter or something. This is something that I would do, but I don't have as nice a machine." The head library technical assistant in a public library branch said, "he looks awfully comfortable with all that space. It doesn't look like our on-the-job situation. We have a small carrel with our WAN and the CPU and the printer, all kind of shoved together. The keyboard sits on what used to be a pencil drawer, but that's the only place we had to put it."

PICTURE B. AUTOMATED CHECK-OUT. WOMAN SLIDING BOOKS THROUGH MACHINE
This is an ad for the 3M Materials Flow Management System that includes bar coding materials in standardized locations and protecting them with 3M tattle-tape security strips; a self-check out system; and check-in. The ad copy that accompanies the picture states, "The 3M selfcheck lets patrons check out their own materials without compromising security. Then there's check-in, which used to take many labor-intensive steps. The new 3M staff workstation combines these into one, quick ergonomic procedure. 3M materials flow management: There's no more efficient route from Point A to Point A."

Too happy and unharried

Thirty percent of the male respondents and 17% of the female respondents remarked that the woman depicted in the ad was too happy and unharried, given the kind of work she is doing. For instance, a man who is the co-ordinator of access and information services in a public library said, "She looks happier than she should be." Another man, an access specialist in a public library, said, "I don't think any of our branches have such a nice set-up; usually the staff look much more harried, because there's a huge line-up waiting." Similarly, another male public reference librarian said, "this person is smiling and check-out service people rarely smile, because there's a line-up of people and they've been on the job for a long period of time." A female public library assistant said, "she looks too happy/she's too relaxed," while a female systems manager in an academic library remarked, "she looks too jolly and too relaxed to be a staff member." Similarly, a woman who is

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an assistant manager of copy cataloguing in an academic library remarked, “she looks much too happy to be doing this.”

Work environment too uncluttered

As with the previous ad, the respondents commented on the lack of clutter in this depiction of the work setting. Of the 8 people who remarked on this, 7 were women. A female public library assistant noted, “it’s too uncluttered, you’ll be running over, books everywhere.” Similarly, the female head of circulation services in an academic library said, “the ad is misleading because when we’re doing returns we’ve got books stacked all over the place.”

No people

Seven respondents, three men and four women, commented specifically on the absence of other people in the ad. For instance, a male library assistant who works in a public library interlibrary loan department commented, “She looks quite happy in her work. I don’t know if it’s significant, but there’s no one here. There’s no interaction with a human being.” A female children’s reference librarian observed, “there’s no patron standing there in front of her, there should be a line-up stretching.” A female cataloguing supervisor in a public library said, “there’s no people around,” while a woman who is the manager of electronic resources in a public library noted, “no lines, no people.”

Too well-dressed

Five respondents, three men and two women, commented on the woman’s clothing, suggesting that she is too well-dressed for the work she is doing. A male public reference librarian noted, “she’s dressed very well, which is different. Most of our staff don’t dress well, like that, partially due to economics, the pay of the job, and also, just the dirty nature of the work.” Another male public reference librarian made a similar comment, “she’s dressed way too formally for what she’s doing. Looks like she’s processing books. Processing people do not dress like that.” A male systems programmer in an academic library said, “most people we have doing that aren’t dressed like that . . . this sort of thing is done by people in T-shirts and blue jeans.” The female head of circulation services in an academic library said simply, “she wouldn’t be dressed up like that.”

Work depiction overly enhanced

Five respondents suggested that the portrayal of the work in the ad overly enhances its quality. One particularly poignant observation from a male public library assistant addresses the deskilling of the work portrayed, “She’s doing it in a

vacuum, with no one to receive the book, there seems to be no interaction, except with the machine. It makes me think, I went to one of those grocery stores with my parents and they would wand the food, and it would say, tinned peas 39 cents and my mother said to the clerk, 'the machine is having all the fun and you're just . . .', and she said, 'I know.' It's sad, somehow. Radishes, 2 bunches for 99 cents." Addressing the fragmentation of this type of work, a woman who is the head of special collections cataloguing in an academic library said, "the only place I've seen a conveyor belt like that, in actual use in a library, is in the technical processing area of a large public library where they literally passed it from one function, here, it went down the belt, they did another function there, it was awful."

Technology envy

Eight of the respondents, three men and five women, were enthusiastic about the technology, particularly its ergonomic features, and expressed a desire for similar technology in their own libraries. For instance, a male public reference librarian said, "our workstations were designed in a non-technological period. This looks like it was put in as a unit, with the desk and so on. What we're usually trying to do is gerrymander space that's not really properly set. This looks like it's actually at the right level for her hands, for example." A man who co-ordinates reading programs in a public library said, "we'd like to have something like that . . . it would reduce repetitive strain injuries." A female trainer/support analyst in a public library noted, "this seems to be a library that has a lot of money . . . very ergonomic, which we don't have." A male operations supervisor of an academic library circulation department observed, "nice rollers. I kind of like that. Flowing towards us, that's great." Similarly, a female collections co-ordinator in a public library said, "some kind of scanner and roller table, that would be a very nice piece of technology to have." An even more enthusiastic comment was made by a woman who is the head of access and information services in an academic library, "Our circulation areas in the library are cluttered. There's mounds of books. They're not in any way ergonomically correct as this. This machine is marvellous."

PICTURE C. SYSTEMS MANAGEMENT SOFTWARE/TWO MEN AND A SEATED WOMAN
(This ad is for CA-Unicenter integrated client/server systems management software.)

Instructional role

Forty per cent of the women interviewed and 20% of the men reacted by commenting on the instructional role they believed was portrayed in the ad. For instance, a male co-ordinator of access and information in a public library said,

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"this is probably an instructor helping a student." A male systems programmer from an academic library said, "this looks like a training session. And the guy might be the instructor." A female branch assistant at a public library said, "this is a librarian just helping the patron answer some question at the terminal." Another woman who is a library technical assistant for acquisitions in a public library said, "this looks like when we were up in Information Systems. Like a training class. Showing employees." A female librarian who does original cataloguing said, "this looks realistic . . . like they're doing some sort of reference work out on the floor." A woman who is the head of the general reference department in an academic library said, "this looks like a training lab. When we're teaching people, that's when you would get this sort of group effort, with the higher-end machinery."

Screen too busy

Twelve respondents commented on the screen display shown on the monitor featured in the ad. Of these, ten are women, 80% of whom work in academic libraries. All indicated that they found the screen "too busy." For instance, a woman who is the manager of local systems in an academic library said, "that screen looks like a real hodge-podge of icons." A woman who is the head of circulation services in an academic library remarked, "I can't imagine why you'd have that many icons on the screen." A woman who is the curator of the map collection in an academic library said, "I've never seen such a messy pile of Windows. I have fewer icons and I have them organized." A woman who is the acting head of government documents in an academic library stated bluntly, "this person has too many Windows on the screen." Another woman who is the head of the interlibrary loan department in an academic library said, "they've got too many Windows open. Too many icons. It looks like Windows gone mad."

Male/female dynamic

To the extent that the gendered nature of the technology relations portrayed in the ads figured consciously for those who were interviewed, it was evident in their reactions to this product. For instance, some found the contrast of the seated woman and the standing man troublesome. Eight respondents, 3 men and 5 women, commented on the nature of the relationship between the woman and the men featured in the ad picture and all of them identified something wrong in the depiction. For instance, a man who is the co-ordinator of access and information in a public library said, "she's looking up at him like he's more important to her than the screen." A male librarian who works in the business and technology division of a public library remarked, "we're in corporate American. It's silly. He's 'I'm the thinking man', and she's so, she's sitting down, and you know, it's the typical

male/female thing. Oh geez, I've got a problem and I need the young corporate man to solve it for me." A female public library assistant who works in public services said, "this is the customer (seated woman) and the librarian (standing man). We don't usually lean over the customer." A woman who is the manager of a central library and community services in a public library system commented, "probably a staff person trying to help a public person — I'm trying to figure out which is which — he doesn't look very confident about what he's saying, but given the physical position it would look like she's the patron, sitting down, with that person coming to help out . . . maybe she's the staff person, because she's beside the phone." A woman who is the head library technical assistant in a public library observed, "it looks more like an office than a library. There's two guys laughing — librarianship is generally a female-dominated workplace rather than male."

Resource envy

Eight of the interviewees, including six women, made comments suggesting that the resources shown in the ad exceeded those available in their own libraries. For instance, a male public reference librarian said, "this strikes me as a sort of idealized thing. Obviously, these are their desks. We have one word processor for a staff of thirty. It's not on anyone's desk . . . Staff sent for training never used it and lost it." Similarly, a woman who is a trainer/support analyst in a public library said, "looks like a workroom, staff area. We don't have a PC per person which it looks like it is here . . . in Public Service you're lucky to get hold of a terminal. When we teach them a new product their biggest complaint is that they don't have anywhere to practice." A woman who is the curator of the map collection in an academic library said, "they've got a look of equipment sitting around. I wish I had that much in my office." Commenting on the staffing level the ad implies, a woman who is the librarian supervisor for Internet, electronic media and multi-media services in a public library noted, "there seem to be two people with this person, discussing or showing what's on the screen — that may be a little utopian in a real live setting."

Too relaxed and unharried

Five women respondents commented that the people portrayed in the ad are too relaxed to be library workers. A woman who manages the local system in an academic library said, "in reality, library training sessions aren't all that relaxed, they're more confused, people look a bit more harried." A female library assistant in a public library observed simply, "this man is looking too relaxed."

Office setting is consistent or inconsistent with a library operation

Forty-four respondents referred to the compatibility or incompatibility of the activities depicted in the ad with the way in which libraries normally operate. Twenty-eight described it as consistent (45% of the men interviewed and 40% of the women interviewed) and 16 described it as inconsistent (15% of the men interviewed and 27% of the women interviewed), suggesting that, proportionately, the men were somewhat less likely than the women to regard the portrayal in the ad as inconsistent with their conception of library work. For instance, a male librarian who does user support services in information technology services in an academic library observed, "this looks like something that goes on in the systems office." In contrast, a man who is a librarian supervisor in public services in a regional public library branch said, "it's not realistic for our environment because we're in some kind of office." A male operations supervisor of the circulation department in an academic library said, "They must be discussing where to find her file. Realistic in a library? Many PC's in a row like that? That definitely is." A man who heads information services in an academic library said, "this looks like the people in the office, doing support work and they have a Windows display which they can't figure out. So they're looking at it, wondering what they're supposed to do next. That's pretty realistic." A man who manages computer services for a public library said, "they're developing some sort of front-end. In our case, we have a micro section that would be much the same, where we could set up a pre-configured environment on the workstation." A woman who is the branch assistant in a public library said, "this is a librarian just helping the patron answer some question at the terminal. It reminds me of the new electronic library, the way they set it up." A woman who is the librarian supervisor of cataloguing in a public library said, "I've seen that. I went to the New York Public Library one time. They have a room with a lot of PCs and they do have people talking together and working together at catalogues." A woman who is the director of public services in a public library commented, "it looks like they're on the Internet. Someone is doing a search and they're getting some assistance. That's what's going on in our Gateways Services Department." On the other hand, a woman who does vendor liaison for the serials/acquisition section in an academic library said, "it doesn't look like a library. It looks like they're in an office somewhere." A woman who is the senior library assistant in an academic library interlibrary loan department said, "it doesn't look like anything in a library that I've ever seen." Another woman who is the acting head of the business library in an academic library system said, "We have groups that come in to use the CDs, but they usually do their search and off they go. They don't have a little social hour around the screen. They can't . There's people waiting to use them." One respondent wasn't sure whether the depiction was

realistic or not. The female head of access and information systems in an academic library observed, "someone is providing consultation about software. I'm not sure this is particularly typical of library services. Where is the library's role in the provision of information and technology? The worlds are merging."

PICTURE D. WOMAN AND CHILD AT MONITOR. AUTOMATED LIBRARY SYSTEMS SOFTWARE

Role confusion; librarian/mother

Twenty-five percent of the women and 11 percent of the men interviewed expressed uncertainty as to whether the adult portrayed in the ad was the child's mother or a librarian. For instance, a woman who is the head library technical assistant in a public library said, "I don't know if that's her Mom or a librarian. Probably a librarian. Mom's not going to get dressed up that much, just to go to the library." A male public reference librarian said, "I'm not sure if this is the mother or the staff member." One respondent, a woman who is the assistant manager of copy cataloguing in an academic library, said "this brings to mind our "Bring your daughter to work day" — or she could be at home, too."

Portrayal realistic

Twenty-one respondents, of whom 18 are women (38% of all the women interviewed) commented on the portrayal of the scene in the ad as being typical of library work. For instance, a female children's librarian said, "she looks like she's probably doing just what our children are doing over there at the CD-ROM stations." A woman who is the manager of electronic resources in a public library noted similarly, "this strikes me as realistic . . . the kid and her parent or a staff member, together. We have a children's computer network downstairs and it doesn't look unlike this." A male children's librarian said, "the younger person is working with something. The friendly librarian is there helping . . . looks realistic."

Portrayal unrealistic — too labour-intensive

Alternatively, 11 respondents, 4 men and 7 women, suggested that the portrayal was unrealistic because of the amount of time the adult in the ad is devoting to the child. For example, a male reference librarian in a public library said, "I don't think staff have that much time to spend with an individual patron, showing him or her the joys . . . I think, increasingly, it's becoming sink or swim." Another man, the librarian supervisor for a regional public library branch, remarked, "it's not realistic because there's no way a staff member could take this level of time." A female public library assistant remarked, "I can't see in our boys and girls department anyone having the time to sit and teach this child . . . we don't give quite this much attention." A

woman who is the librarian supervisor for electronic resources in a public library said, "a patron is being trained on how to use the catalogue electronically. It looks as though somebody has the time to sit down and go through, with this person, showing them how to do it, keystroke by keystroke. That sort of individual attention, I think, is not probably realizable at the moment." A woman who is a trainer/support analyst in a public library said, "we have some computers for children. Not that the librarian has time to sit with the kid. There's a sheet of instructions and go to it. At the community branches where you have three people or two and a half people, there's no way they can go very far beyond the daily jobs they have to do, like checking in and checking out."

What librarianship should be

Six respondents, all women, suggested that the portrayal in the ad reflects what librarianship should be. A woman who is the head of access and information services in an academic library said, "Hopefully, this is the environment if I went into a school library or a public library. I hope it's a sign of the education loop and I hope it continues." A female senior library assistant in an academic library said, "this is a librarian helping the child with a computer in a library setting which is good because they're going to need to know how to use all that online stuff when they get to be in college." A female librarian supervisor of cataloguing in a public library said, "this looks like what I would envision the library to be .. because we always tend to think of libraries as student and child-oriented in that you would be helping them. There should be a situation where you would walk around and ask people if they need help. I'm not sure in the public library anyone has time to do that anymore."

Cynicism

Four respondents were sceptical about what was being portrayed in the ad. For instance, a male systems manager in an academic library said, "this is a public or school library . . . teaching them how to use a computer and spending all our tax money needlessly at this age." A woman who is the head of the interlibrary loan department in an academic library said, "this looks like your basic elementary school library and teaching someone how to use . . . the wonderful sweet image we all have of what libraries are . . . apple pie. A happy librarian and a happy little girl have an "AHA" experience with actual library and actual computer mixed together. We don't have those and I don't feel I dote."

Technology geared to children; children like and benefit by technology

Twelve respondents, three men and nine women, commented on technologies specifically geared for children and suggested that children enjoy technology. For instance, a male manager of computer services in a public library said, "these are applications geared toward children. We have in every one of our regional libraries, both multi-media units, and network multi-media with children's educational software, graphics-based, fun-type applications." A woman who is a library assistant in the original cataloguing service department of an academic library said, "this is in a public school and they are applying those beautiful software programs. They did really well in the school and the kids are learning." A female children's librarian said, "she's having a bit of electronic fun at the library with one of the child-designed programs."

Discussion

The depictions of library work roles in the ads shown to the respondents in this study highlight the manner in which library work is changing in connection with the use of new technologies. The traditional work of librarianship, largely women's work of nurturing, organizing and housekeeping, is reflected in the ads for the automated materials check-in product and the automated library systems software. In the latter case, a woman is portrayed as caregiver to a child. This depiction is recognized by library workers as either the work of a helpful librarian performing an important professional function or confused with the role of mother. To the extent that it reflects the work of librarianship, such a relationship was regarded by a number of the respondents to be unsustainable in the current era, because it is too expensive and time-consuming and even, according to some, a waste of time. Only women commented that the relationship portrayed in the ad was, in their view, what librarianship should be.

In the other ad, a smiling woman is shown performing a menial, monotonous task. Many of those interviewed pointed out that anyone performing such a job should not be smiling and should not be so-well dressed, because her work is dirty, unrewarding, and poorly paid. On the other hand, the technology she is using was frequently admired and sought after, although a few respondents were repelled by the dehumanization of the work environment and the fragmentation and deskilling of work the technology demands.

In the new information environment represented by the ads for integrated client server software and the IBM monitor, well dressed men are shown to be at ease with themselves and enjoying their work. Indeed, in the center of the text accompanying the CA-Unicenter client/server software, a smiling man is shown embracing a large monitor. Interestingly, one of the primary reactions to these

depictions on the part of those who were interviewed for this study is that they don't represent the everyday working environments found in libraries because the people portrayed are simply not harried enough. Several men responded with concern about the ergonomically-incorrect manner in which the male user of the IBM monitor was seated. Many of the women library workers, however, reacted to the pictures by contrasting them with inadequacies in their own work environments, where PCs are balancing on desk drawers, piles of books cover every surface, lineups of patrons pressure staff and computing resources, and there is not enough access to machines for library staff to practice newly acquired skills. The women also seemed particularly sensitive to the lack of clutter shown in the ads, repeatedly commenting that the ads depict pristine workplaces whereas their own are crowded and untidy. Women academic library workers seemed particularly concerned about the clutter shown on the computer screens themselves. Also, women, more so than men, seemed to have difficulty recognizing the office set-up depicted in these ads as consistent with any aspect of library operations, whereas men were more likely to see these representations as reflective of some library work settings.

The text accompanying the ads highlights the role expectations for workers who use the products being sold. For instance, the materials handling system is explicitly designed to be labour-saving. Not only does it reduce to the simplest, most repetitive level, the processing of books in and out of the library, allowing the employment of cheap, unskilled workers, but it enables the lower-end work of paid library staff (predominantly women) to be offloaded onto users, reflecting the trend toward client self-service that is a key element in the restructuring initiatives underway in many public sector libraries (Harris and Marshall 1997).

The gendered language of brown goods and white goods is also in evidence in the ad copy accompanying the advertised products. For instance, the text accompanying the integrated systems management software marketed in *PC Magazine* is dense, specialized and masculine. The copy that accompanies the picture presents "the seven commandments of systems management software." The reader is commanded to "demand an open solution that supports all key industry standards and protocols," and "protect all your data with bulletproof security software that supports every platform and operating system across your entire enterprise." The fourth commandment, which makes specific reference to the picture shown to the respondents says, "standardize on a common GUI interface that makes it easier to use."

This commentary is in sharp contrast with the ad for the Winnebago library automation system, arguably as complex a technology, which is marketed to teacher librarians in *School Library Journal*. Here the language is soft and simple, emphasizing ease of use and the importance of human relationships. "You have the

chance to teach your students skills that will last a lifetime. We don't want those opportunities to slip away because you're struggling with your automation system. That's why we've made our software so easy to use. Your colleagues agree. A recent independent survey rated our software as easy to use. Yet our programs are sophisticated enough to keep even the busiest libraries running smoothly." Indeed, another photo accompanying the ad shows a woman writing with a pen (rather than using the computer), presumably preparing a testimonial letter which says, "Winnebago's software benefits the whole community of learners — students, teachers, and parents. Relationships and instruction at this school have been strengthened and enhanced." The message of this ad is clear. You can be a good librarian (in the sense of maintaining a warm relationship with your young patrons) without troubling your head with difficult technological problems. The reactions of the library workers to this ad reflects a troublesome theme, however. Many suggest that this type of caring work may be too expensive in future, and is perhaps the kind of thing that is best left to Moms.

To conclude, it appears that Cockburn and Ormrod's observations about technology/gender relations bear repeating in the context of library and information work. It seems that the clean, pleasant world of work that the new information technologies promise, is at odds with the work environments of many library workers, especially women. Further, it seems that certain technologies are indeed associated predominantly more with men or with women. The varied reactions of the library workers to the technology ads hint at the complexity of the roles of gender, technology and work that remain to be unravelled with closer study.

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Note

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