

9 Gender and Power in On-line Communication

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1 Introduction

New communication technologies are often invested with users' hopes for change in the social order.¹ Thus the Internet is said to be inherently democratic, leveling traditional distinctions of social status, and creating opportunities for less powerful individuals and groups to participate on a par with members of more powerful groups. Specifically, the Internet has been claimed to lead to greater gender equality, with women, as the socially, politically, and economically less powerful gender, especially likely to reap its benefits. The claims include the following:

- 1 Text-based computer-mediated communication, with its lack of physical and auditory cues, makes the gender of on-line communicators irrelevant or invisible, allowing women and men to participate equally, in contrast with traditional patterns of male dominance observed in face-to-face conversations (Danet 1998; Graddol and Swann 1989).
- 2 As a network connecting geographically dispersed users, the Internet empowers women and members of other traditionally subordinate groups to find community and organize politically in pursuit of their own interests (Balka 1993).
- 3 The World Wide Web allows women to self-publish and engage in profitable entrepreneurial activity on a par with men (Rickert and Sacharow 2000).

Of course, men, too, stand to benefit from anonymous communication, common-interest group formation, and the commercial potential of the Web. The difference is that for women, the Internet purportedly removes barriers to participation in domains where barriers do not exist – or at least, do not exist to the same extent – for men.

Some twenty years after the introduction of the Internet, we may ask whether these potentials have been, or are in the process of being, realized. Extrapolating

from the properties of a technology to its social effects – a paradigm known as “technological determinism” (Markus 1994) – tends to overlook the fact that the development and uses of any technology are themselves embedded in a social context, and are shaped by that context (Kling et al. 2001). Does the Internet alter deeply rooted cultural patterns of gender inequality, or do those patterns carry over into on-line communication? Is Internet technology inherently gender-neutral, or does the fact that it was created by men result in an in-built structural bias that perpetuates male advantage? At the same time, the Internet is undeniably transforming social behavior as more and more people go on-line. In the early 1990s, estimates placed the number of female Internet users at 5 per cent (Sproull 1992, cited in Ebben and Kramarae 1993); females now make up slightly more than half of all Web users (Rickert and Sacharow 2000). What are the effects of millions of girls and women entering what was, until very recently, a predominantly male domain?

This chapter surveys research on gender and the Internet published or presented between 1989, when gender issues first began to be raised in print, and the time of writing (2002). It brings together research findings and speculations that bear on the claims listed above, and interprets the available evidence in relation to the larger question of whether – and if so, how – gender and power relations are affected in and through Internet communication. The body of evidence taken as a whole runs counter to the claim that gender is invisible or irrelevant on the Internet, or that the Internet equalizes gender-based power and status differentials. At the same time, limited trends toward female empowerment are identified, alongside disadvantages of Internet communication that affect both women and men.

This chapter is organized into five sections. The immediately following section considers gender in relation to issues of Internet *access*, for both users and creators of on-line resources. Basic access is a prerequisite to on-line participation, and those who create resources enjoy greater power to promote their agendas. Evidence is then evaluated that bears on claims of gender anonymity in interactive *computer-mediated communication* (CMC) on the Internet. This section is divided into two parts, the first focusing on asynchronous, and the second, on synchronous, CMC. The fourth section addresses gender on the *World Wide Web*, from the phenomenon of personal home pages, to entrepreneurial uses, and mass uses of the medium. The final section identifies possible future scenarios, based on current and emergent trends, in an attempt to answer the question: if the Internet is not yet a level playing field for women and men, is it more (or less) likely to become one in the future?

2 Access

In the early days of the Arpanet – the predecessor of the Internet² – on-line access was restricted to the US defense department personnel and computer

scientists (almost entirely male) who designed and developed computer networking. The Internet, so called since around 1983, expanded geographically in the 1980s to include more universities, especially faculty and students in computing-related departments (mostly male). The trend by the late 1980s of increased diffusion to academicians in other disciplines and employees in a growing number of workplaces became a full-fledged sweep toward popular access in the 1990s, with the rise of Internet Service Providers (ISPs) that enabled people to connect from their homes. The percentage of female users increased along with this expansion, as did public knowledge about the Internet and ease of access to it.

Nonetheless, access remained a stumbling block for gender equity throughout much of the 1990s. Women were initially more reticent about using computers, less willing to invest time and effort in learning to use the Internet, and less likely to be employed in workplaces with Internet access (Balka 1993). When they did log on, they were more likely than men to be alienated by the sometimes contentious culture they encountered on-line (Herring 1992, 1993). However, there is evidence that all this is changing. The increasing popularization and commercialism of the Internet since the advent of the World Wide Web has brought with it ubiquity, easy-to-use graphical interfaces, and mainstream content (e.g. news, online shopping), making the Internet a "safer," more familiar-seeming place. Moreover, a new generation of young people has been raised using, and feeling comfortable with, the Internet. Given that slightly more than 50 per cent of Web users in the USA are now female, according to one study (Rickert and Sacharow 2000), it would appear that the Internet is at present no more difficult for those females to use, nor more intimidating, than it is for males.³

However, while the gender digital divide is being bridged in terms of who logs on to the Internet, at least in the USA, women and men still do not have equal access to the creation and control of what takes place on the Internet. Roles that require technical expertise, such as network administrator, are disproportionately filled by men, consistent with the traditional association of technology with masculinity (Wajcman 1991). Setting up one's own bulletin board system (BBS), listserver, or Web site requires not only technical skills, but an investment in equipment, Internet connectivity, and time and effort for ongoing maintenance, which taken together, presupposes a high level of motivation and interest in the technical aspects of computer networking. Women, given their lower numbers in fields such as computer science,⁴ are less likely to have the necessary background and motivation to do this. As a consequence, most computer networks are set up and run by men, especially in the early days of new technologies such as the Web, when the norms for use of the technology emerge. The claim that everyone has equal access to the Internet tends to overlook the fact that all access is not equivalent – viewing a Web site or posting to a discussion group does not give an individual the same degree of power as creating and administering the Web site or as the server that hosts the discussion group. The latter remains the preserve of a technologically skilled – and mostly male – elite.

At the same time, ordinary users are empowered to create Internet content to a greater extent than in mass media such as television and radio. Not only can users participate in on-line discussion, almost anyone can create and moderate a discussion forum, or create their own Web pages. Females as well as males avail themselves of these opportunities, which require some initiation and maintenance effort, but which are mostly supported technically by others (e.g. network administrators). Moreover, since site administrators often exercise minimal control over the content available on their site, discussion group leaders and Web page creators enjoy considerable freedom to create Internet content, although that content is subject to filtering and blocking by Internet access portals. Some long-running and popular Internet sites, such as the Women's Studies List (WMST-L; Korenman and Wyatt 1996) and the Women.com Web site (Brown 2000), were developed and are run by women; in these sites, content is generated by the female owners and users, not by the technical support staff. Thus, although technological control of the Internet remains predominantly in the hands of men, women have ready access to computer-mediated communication and the Web, including the possibility of creating content therein.

3 Computer-mediated Communication

Computer-mediated communication (CMC) comprises a variety of interactive socio-technical modes including e-mail, discussion lists and newsgroups, chat, MUDs (Multi-User Dimensions) and MOOs (MUDs, Object Oriented), ICQ (I Seek You), and IM (Instant Messaging). Of these, e-mail and discussion groups have been in existence since the early 1970s; chat, social MUDs and MOOs date to the late 1980s; and ICQ and IMs were introduced in the mid-1990s.⁵ All these CMC modes are textual, involving typed words that are read on computer screens.

"On the Internet, nobody knows you're a dog." A cartoon bearing this caption was published in *The New Yorker* in July of 1993, but the notion that Internet communication was anonymous had already appeared in scholarly research in the 1980s. Because you cannot see or hear your interlocutors in text-only CMC, the argument goes, you have no way of knowing who – or what – they are. A version of this claim was first advanced with reference to gender by Graddol and Swann (1989), who noted that participation by men and women tended to be equalized in an anonymous computer conferencing system used in the British Open University. They explicitly contrasted their observations on computer conferencing with the traditional pattern of male domination of mixed-sex face-to-face discourse. For the most part, however, early CMC research did not discuss gender, nor control for it in experimental studies.⁶

As more women began to venture on-line in the early 1990s, studies of gender and CMC started appearing with greater frequency. In contrast to the optimism of the 1980s, the findings of these studies tended to problematize

claims of gender-free equality in cyberspace. In an important early article documenting the results of an academic listserv group's self-directed experiment with anonymity, Selfe and Meyer (1991) found that males and participants in the group who enjoyed high status off-line dominated the interaction, both under normal conditions and under conditions of anonymity. However, some individual women reported feeling freer to participate when their messages were anonymous.

Soon after, researchers began reporting the use of more aggressive tactics by men in on-line discussions, some of it explicitly targeted at female participants (Herring 1992, 1993; Herring, Johnson, and DiBenedetto 1992; Kramarae and Taylor 1993; Ebben 1994; McCormick and McCormick 1992; Sutton 1994). Using electronically distributed questionnaires, Herring (1993) found that women were more likely than men to react aversively to aggression in on-line interaction, including falling silent and dropping out of listserv groups. Around the same time, reports began to surface in the popular press of women on the Internet being the targets of male intimidation, harassment, and sexual deception (Brail 1994, 1996; Dibbell 1993; Van Gelder 1990). These findings raise an apparent paradox: how can gender disparity persist in an anonymous medium which allegedly renders gender invisible?

3.1 *Asynchronous CMC*

The first part of the solution to the paradox has to do with the meaning of the term "anonymity." Whereas asynchronous CMC on the Internet – the object of most of the early descriptions – offers the theoretical possibility of anonymity, in practice true anonymity was somewhat difficult to achieve in the early days of the Internet, requiring the use of an anonymizing service or the ability to forge e-mail addresses.⁷ Both of these practices required knowledge not readily available to all Internet users.⁸ More importantly, it seems that users are not necessarily interested in exploiting the potential for anonymous interaction – the use of one's real name lends accountability and a seriousness of purpose to one's words that anonymous messages lack. Most participants in computer-mediated discussion groups in the 1980s and 1990s interacted in their real-life identities (Collins-Jarvis 1997; Herring 1992), without attempting to disguise their gender.

Still, text-only CMC is less revealing of personal information than face-to-face communication, and some user names are neutral as to gender. Female users can choose to present themselves so as to minimize discrimination and harassment by adopting a gender-neutral name (Bruckman 1993). After all, in cyberspace others only know what you choose to present about yourself, the popular view goes. Here the second part of the solution to the paradox comes in: gender is often visible on the Internet on the basis of features of a participant's discourse style – features which the individual may not be consciously aware of or able to change easily. That is, users "give off" information about

their gender unconsciously in interaction (cf. Goffman 1959), and this information does not depend in any crucial way on visual or auditory channels of communication; text alone is sufficient.

The linguistic features that signal gender in computer-mediated interaction are similar to those that have been previously described for face-to-face interaction, and include verbosity, assertiveness, use of profanity, politeness (and rudeness), typed representations of smiling and laughter, and degree of interactive engagement (cf. Coates 1993). There is an overall tendency for some of these behaviors to correlate more with female CMC users, and for others to correlate more with males. This does not mean that each and every female and male manifests the behaviors; exceptions to the tendencies can readily be found.⁹ It does mean, however, that gender predicts certain on-line behaviors with greater than chance frequency when considered over aggregate populations of users, controlling for variables such as age, topic, and the synchronicity of the medium.

In asynchronous CMC of the type that takes place in discussion lists and newsgroups on the Internet and Usenet, males are more likely to post longer messages, begin and close discussions in mixed-sex groups, assert opinions strongly as "facts," use crude language (including insults and profanity), and in general, manifest an adversarial orientation toward their interlocutors (Herring 1992, 1993, 1996a, 1996b, forthcoming; Kramarae and Taylor 1993; Savicki et al. 1996; Sutton 1994). In contrast, females tend to post relatively short messages, and are more likely to qualify and justify their assertions, apologize, express support of others, and in general, manifest an "aligned" orientation toward their interlocutors (Hall 1996; Herring 1993, 1994, 1996a, 1996b; Savicki et al. 1996). Males sometimes adopt an adversarial style even in cooperative exchanges, and females often appear to be aligned even when they disagree with one another, suggesting that these behaviors are conventionalized, rather than inherent character traits based on biological sex. Moreover, there is evidence that the minority gender in an on-line forum tends to modify its communicative behavior in the direction of the majority gender: women tend to be more aggressive in male-dominated groups than among other women, and men tend to be less aggressive in female-dominated groups than in groups controlled by men¹⁰ (Baym 1996; Herring 1996b). This observation suggests that the more numerous a gender group is on-line, the greater the influence it will have on shared discursive norms.

Politeness is one common means through which gender is cued in asynchronous CMC. Women are more likely to thank, appreciate, and apologize, and to be upset by violations of politeness; they more often challenge offenders who violate on-line rules of conduct (Smith et al. 1997), and predominantly female groups may have more, and more strictly enforced, posting rules designed to ensure the maintenance of a civil environment (Hall 1996; Herring 1996a). In contrast, men generally appear to be less concerned with politeness; they issue bald face-threatening acts such as unmitigated criticisms and insults, violate on-line rules of conduct, tolerate or even enjoy "flaming," and tend to

be more concerned about threats to freedom of expression than with attending to others' social "face" (Herring 1994, 1996a, 1999). These patterns have been noted even in gay and lesbian discussion groups (Hall 1996), and among women who have succeeded in traditionally male-dominated professions such as computer science (Herring and Lombard 1995). "Inappropriately" appreciative or contentious messages can "give away" individuals in Internet discussion groups attempting to pass as the opposite gender, evidence that stereotypes about on-line gender styles based on these patterns have emerged (Herring 1996a).

Examples of a male-style message (making use of sarcasm and insults) and a female-style message (expressing appreciation, support, and a qualified assertion) are given in examples (1) and (2).¹¹ Females are much less likely than males to produce messages like (1), and males are much less likely than females to produce messages like (2).

(1) *A male posting to a discussion group (responding to a male message)*

>yes, they did . . . This is why we must be allowed to remain armed . . .
>who is going to help us if our government becomes a tyranny?
>no one will.

oh yes we *must* remain armed. anyone see day one last night abt charlestown where everyone/s so scared of informing on murderers the cops have given up ? where the reply to any offense is a public killing ? knowing you/re not gonna be caught cause everyone/s to afraid to be a witness ?

yeah, right, twerp.

> - [Ron] "the Wise" -

what a joke.

(2) *A female posting to a discussion group (responding to a female message)*

>Aileen,
>
>I just wanted to let you know that I have really enjoyed all your
>posts about Women's herstory. They have been extremely
>informative and I've learned alot about the women's movement.
>Thank you!
>
> - Erika

DITTO!!!! They are wonderful!

Did anyone else catch the first part of a Century of Women? I really enjoyed it. Of course, I didn't agree with everything they said . . . but it was really informative.

Roberta~~~~~

Gender differences in on-line communication tend to disfavor women. In mixed-sex public discussion groups, females post fewer messages, and are less likely to persist in posting when their messages receive no response (Broadhurst 1993; Herring forthcoming). Even when they persist, they receive fewer responses from others (both females and males), and do not control the topic or the terms of the discussion except in groups where women make up a clear majority of participants (Herring 1993, forthcoming; Herring, Johnson, and DiBenedetto 1992, 1995; Hert 1997). The lesser influence exercised by women in mixed-sex groups accounts in part¹² for why women-centered and women-only on-line groups are common (Balka 1993; Camp 1996), whereas explicitly designated men-only groups are rare.¹³

Moreover, an inherent tension exists between the conventionally masculine value on agonism and the conventionally feminine value on social harmony. The contentiousness of male messages tends to discourage women from participating, while women's concern with politeness tends to be perceived as a "waste of bandwidth" by men (Herring 1996a), or worse yet, as censorship (Grossman 1997; cf. Herring 1999). This tension does not inherently favor one gender over the other – each value system potentially constrains the other. In Internet discussion groups, however, where civil libertarian values have traditionally constituted the dominant ideological context, and where few structures are in place to sanction anti-social behavior, aggression tends to prevail over less aggressive behaviors. In a number of documented cases, repeated aggression from disruptive males has forced women-centered on-line forums to disband, move elsewhere, and/or reconfigure themselves with strict rules and regulations regarding acceptable participant conduct (Collins-Jarvis 1997; Ebben 1994; Reid 1994).

Some evidence suggests that women participate more actively and enjoy greater influence in environments where the norms of interaction are controlled by an individual or individuals entrusted with maintaining order and focus in the group. Thus women-centered groups whose moderators place restrictions on the number or nature of messages that can be posted, particularly when contentious (challenging, insulting, etc.) messages are discouraged, tend to flourish, with large, active memberships and widespread participation (Camp 1996; Korenman and Wyatt 1996). Female students also participate more – sometimes more than male students – in on-line classrooms in which the teacher controls the interaction, even when the teacher is male (Herring and Nix 1997; Herring 1999). While this result may appear initially puzzling – how can women be "freer" to participate when they are "controlled" by a group leader? – it makes sense if the leader's role is seen as one of ensuring a civil environment, free from threats of disruption and harassment. The need for such insurance points to the fundamental failure of a "self-regulating" democracy on the Internet to produce equitable participation: when left to its own devices, libertarianism favors the most aggressive individuals, who tend to be male. Consistent with this imbalance, male respondents to an Internet-wide survey cited "censorship" as the greatest threat to the Internet, whereas females cited "privacy" as their greatest concern (GVU 1997).¹⁴

3.2 Synchronous CMC

The studies cited above reveal some of the mechanisms by which gender disparity operates in asynchronous computer-mediated communication, despite the potential of the medium to neutralize gender differences. Some writers remain optimistic, however, as regards synchronous (“real-time”) chat modes such as Internet Relay Chat (IRC) and MUDs and MOOs. Pointing out that many of the asynchronous studies focus on professional (e.g. academic) users, Grossman (1997) speculates that the real-world power hierarchies in such groups carry over into the virtual domain. Power dynamics of this sort, including gender hierarchy, should be irrelevant in casual chat in which users have no real-world connections. Danet (1998) is similarly optimistic, although for different reasons. Chatters are more anonymous than participants in asynchronous discussion groups, in that recreational chat environments encourage users to take on pseudonyms. For Danet, these pseudonyms function as masks which invite experimentation with gender identities in playful, “carnavalesque” ways, liberating users from restrictive gender binaries.

The available research suggests that in the gender realm as in other domains, synchronous CMC both differs from and resembles asynchronous CMC. Some of the research initially appears to bear out predictions of greater gender equality. Males and females tend to participate more equally in chat environments, in terms of both number of messages and average message length (Herring 1999). On average, response rates to males and females are also more balanced; if anything, females tend to receive more responses to their messages than males (Bruckman 1993; Herring and Nix 1997). In apparent support of Danet’s claim, the literature also contains anecdotal reports of play with gender identity, including gender-switching sustained over periods of weeks or months (Bruckman 1993; McRae 1996).

These observations notwithstanding, gender is far from invisible or irrelevant in recreational chat. IRC users frequently ask other participants about their biological sex, along with their age and location (abbreviated “asl”). Moreover, they display their gender through their message content, use of third-person pronouns to describe their actions, and nickname choice (Herring 1998).¹⁵ Less conscious differences in discourse style are also evident. In a study of the use of “action verbs” in a social MUD, Cherny (1994) found that female-presenting characters used mostly neutral and affectionate verbs (such as “hugs” and “whuggles”), while male characters used more violent verbs (such as “kills”), especially in actions directed toward other males. Similarly, Herring (1998) found that females on IRC typed three times as many representations of smiling and laughter as did males, while the gender ratio was reversed for aggressive and insulting speech acts. Males also produced overwhelmingly more profanity and sexual references. These findings parallel the finding that women and men in asynchronous discussions tend to use different discourse styles – aligned and supportive, as compared to oppositional and adversarial (Herring 1996a,

1996b). Rodino (1997) concludes a case study of an IRC interaction by noting that “despite multiple and conflicting gender performances [by one participant], the binary gender system is alive and well in IRC.”

Examples of a female-style IRC exchange (including expressions of support, appreciation, smiling/laughter, and affectionate actions) and a male-style IRC exchange (making use of profanity, insults, sexual references, and violent actions) are given in examples (3) and (4) (from Herring 1998).¹⁶ Not all female and male chat participants use these styles, but when they are used, they tend overwhelmingly to be produced by one, and not the other, gender.

(3) *A chat exchange between females*

* KikiDoe *huggers* beff to her death hahaah
 <Beth > :)
 <Beth > you guys are so great! *happy sobs*
 <KikiDoe> beth dats cause we have you

(4) *A chat exchange among males*

<wuzzy> any ladies wanna chat??
 <[Snoopy]> fonz: she nice
 <LiQuIdHeL> FUKCK YOU
 <[Snoopy]> fuck you little boy
 <LiQuIdHeL> NO FUCK YOU
 <mature> snoopy u r ??????????????????????
 <[Snoopy]> its past your bedtime
 <[Snoopy]> are you talking?
 * LiQuIdHeL kicks [Snoopy] in the nuts causing them to dangle out your nose like fuzzy dice on a rear view mirror . . . ;) have a nice day

Nor is the apparent equality of participation what it seems on the surface. Little variation is possible in message length in most chat modes, given constraints on buffer size and typing time in real-time interaction. Most synchronous chat messages are short, between four and twelve words in length, with the variation conditioned by the number of interlocutors (dyads tend to type longer messages than groups; see e.g. Cherny 1999) more than by participant gender. As regards frequency of posting, public chat rooms are typically frequented by more males than females (by some estimates, three males to every female), but those females who do participate receive a disproportionate amount of attention, much of it sexual in nature (Bruckman 1993; Herring 1998, 1999; Rodino 1997). The most common “gender-switching” patterns reflect this dynamic: females tend to assume gender-neutral pseudonyms in order to avoid sexual attention, while males assume female-sounding names in order to attract it (Bruckman 1993; Herring 1998).

As in asynchronous CMC, instances of aggression against women are also found, and these, too, tend to be of a sexual nature. Dibbell (1993) describes a textually enacted “rape” on a social MOO, and Reid (1994) reports an incident

on a support MUD for sexual abuse survivors in which a male-presenting character named "Daddy" shouted graphic enactments of sexual abuse to all present on the MUD. Such occurrences expose the dark side of recreational CMC, in which anonymity not only fosters playful disinhibition (Danet et al. 1997), but reduces social accountability, making it easier for users to engage in hostile, aggressive acts. A number of harassment incidents target women who have gender-neutral pseudonyms (Herring 1999), suggesting that chatters, like e-mailers, give off gender cues through their interactional style, and thus that pseudonyms alone may be insufficient to mask on-line gender.

What, then, of the cases of successful on-line gender-bending that some authors point to in support of the claim that CMC deconstructs gender? Empirical observation of large populations of synchronous CMC users suggests that such cases are actually rather infrequent. Based on several years of observation, LambdaMOO founder and chief wizard Pavel Curtis (1992) concluded that sustained gender-switching is rare in LambdaMOO: because of the effort involved in trying to be something one is not, most participants interact as themselves, regardless of the name or character description they choose. In support of this, Herring (1998) found that 89 per cent of all gendered behavior in six IRC channels indexed maleness and femaleness in traditional, even stereotyped ways; instances of gender-switching constituted less than half of the remaining 11 per cent. In theory, it is possible that gender-switching takes place more often, but is so successful that it goes undetected. In practice, however, IRC users give off gender cues frequently (an average of once every three to four lines of text in the Herring (1998) study), such that the longer someone participates, the more likely it is that they will reveal their actual gender. Thus gender differences – and gender asymmetry – persist, despite the greater anonymity and relative absence of externally imposed power hierarchies in synchronous CMC.

4 The World Wide Web

The World Wide Web, introduced in the USA in 1991, began attracting widespread attention in 1993 with the launching of the Mosaic graphical browser. Currently, Web browsing is the "killer ap" (application) of the Internet (Pastore 2000), rivaling even e-mail in popularity, and its rate of use continues to grow. The Web, more than any other Internet application, was responsible for bringing women on-line in large numbers in the mid-1990s. Indeed, in their August 2000 report that women make up 50.4 per cent of Web users, Media Metrix calls it the "Women's Web" (Rickert and Sacharow 2000). Two properties of the Web set it apart from text-based CMC: first, it is multi-modal, linking text, graphics, video, and audio; second, it is primarily a one-way broadcast (mass) medium, in which "pages" created by an author are read and navigated by readers. How is gender represented, graphically and symbolically, on the Web,

and to what extent are women involved in creating and administering Web content?

4.1 *Graphical representation*

Multimedia are celebrated for their potential to create rich “virtual realities” which mirror off-line physical reality (Lombard and Ditton 1997). At a basic level, the graphical capabilities of the Web allow photographs to be displayed on Web pages, and both males and females make use of this capability. “Anonymity” is not a particular virtue on the Web, although one is free to select any image to represent oneself, since the actual physical appearance of the creator of the pages remains hidden, as in text-based CMC. Researchers have observed that young women’s self-representations in personal homepages are often sexualized, involving provocative clothing and/or postures (Blair and Takayoshi 1999). Similarly, on the amihot.com site, where women and men post photographs of themselves to be rated and commented on by others, female images are more sexually provocative, and more likely to attract comments about physical appearance, than are male images, which are more likely to be humorous or deliberately offensive in their presentation (Bella 2001). In both of the above cases, photographs of the actual individuals seem mostly to be involved, although graphical avatars in chat environments display similar tendencies when users represent themselves with photographs of famous people or cartoon images (Kolko 1999; Scheidt 2001).

Researchers are divided as to whether self-representation on the Web along stereotypical gender lines is harmful. Blair and Takayoshi (1999) critique the practice on the grounds that it perpetuates the cultural myth of woman as sex object. They point out that even when the women themselves consider displaying their images on-line as an act of self-empowerment, the reception and use of those images can objectify them. For example, the jennicam.com site, on which a young woman broadcasts a continuous live video feed of the interior of her apartment, is especially popular among men, a number of whom consider Jenni their “virtual girl friend,” although she has no reciprocal knowledge of them (O’Sullivan 1999; Snyder 2000). Another well-known site, “Babes on the Web,” created in the mid-1990s by a man named Robert Toups, linked to (and rated in offensively sexist terms) photographs on women’s homepages without their permission (Kibby 1997; Spertus 1996). In the former case, Jenni is fetishized even though her site is not primarily sexual in content; in the latter case, serious, professional photographs of academic women were “co-opted” as part of Toups’s site. Thus the problem of objectification of images of females on the Web exists independently of the “provocativeness” of the images, recalling the wider phenomenon of objectification of females off-line.

These representations become additionally problematic when they are viewed and assessed in relation to the prevalence of pornography on the Web. Internet pornography, featuring mostly images of naked or partly naked female bodies,

is readily accessible for free, including hardcore types that are illegal in the United States (King 1999; Mehta and Plaza 1997). Pornography typically represents women in sexually submissive positions, in degrading circumstances, or as promiscuously wanton; it is produced primarily by men for men, constructing women's bodies as objects for male use (Fedler 1996; see also discussion in Di Filippo 2000). By the mid-1990s, a search for the word "woman" on the Internet turned up numerous porn sites, and terms like "babe" generated almost exclusively pornographic hits. The "Babes on the Web" site and the jennicam site, with its occasional female nudity, are readily subject to interpretation by their (mostly male) viewers in terms of the culture and values of on-line pornography.

However, not all writers about the Internet are troubled by sites that represent women in sexualized terms. Kibby (1997) argues that women who create their own homepages and Web sites exercise control over the representation of their bodies and personae on-line, and need not be affected by responses such as Toup's (see also Cheung 2000). "Pro-sex" feminists (Bright 1997) champion the right of women to consume and produce pornography, and see in the Internet an opportunity for them to express themselves sexually as a path to self-knowledge and empowerment (Clements 2001), as well as for financial gain (Glidewell 2000).

Finally, not all representations of women on the Web are stereotypically gendered. Kibby (1997) and Blair and Takayoshi (1999) point to Web sites created by women for women, many by Generation X-ers (young twenty-somethings), which subvert traditional representations of gender, for example, by representing women as strong and active in non-traditional domains, and by ironically adopting "retro" images (for example, of 1950s housewives) to represent them¹⁷ (Brown 2000; Vollmer 2001). The content of such sites has been described as "edgy" and intelligent (Brown 2000), constituting a subversive discourse that co-exists alongside traditional gender discourses.¹⁸

4.2 *Commercialization*

The greatest single change affecting the Internet in recent years has been the commercialization of the World Wide Web. Accelerated by the termination of US federal funding for the Internet backbone in 1995 (McChesney 2000), commercialization has opened the door to mass media infiltration of the Internet, as well as creating opportunities for individual entrepreneurs to start their own on-line businesses. These developments are claimed to benefit women, who are the primary consumers in first-world economies, but who have traditionally been excluded from control and ownership in the commercial realm.

The Web can be considered a mass medium. It reaches a wide audience (Morris and Ogan 1996), and content created by individuals or organizations is broadcast to viewers, although the viewers are less passive consumers of the content than with traditional mass media such as television (O'Sullivan 1999).¹⁹ The Web is also, increasingly, a channel of diffusion for traditional print and

broadcast media. The AOL-Time Warner merger, announced publicly in January 2001, consolidated a large Internet service provider with a media conglomerate that broadcasts television news, publishes magazines and books, and owns a record label. Corporate mass media interests, on the Internet and off, are controlled almost exclusively by men.

At the same time, profit can be generated through allowing advertising banners to be placed on individual Web sites. This gives rise to a type of grassroots on-line publishing that extends beyond the personal homepage into the commercial domain. A number of women-oriented Web sites in this category, such as Cybergrrl and women.com, are analogous to general interest magazines, and originally employed a number of veterans of the alternative "zine" movement (Brown 2000). However, although started by women to provide intelligent and politicized content, many such sites now offer increasingly mainstream fare. Thus women.com, begun in 1993 as Women's Wire, an on-line discussion forum for early adopter women, has merged with the Hearst women's magazine empire; its content now includes on-line versions of mainstream women's magazines such as *Redbook*, *Cosmopolitan*, and *Good Housekeeping*. The most popular women's site, iVillage, was founded by a woman but has since been taken over by a man; it offers "baby clothing and pregnancy calendars, fad diets and personal shoppers" (Brown 2000), framing women as individuals whose careers are secondary, and who have a constant need to improve themselves and please others (Sarkio 2001). Brown attributes the trend toward mainstream content to commercialization, specifically, to the need for Web site producers to compete in a mass medium in which the greatest profit is achieved by catering to the lowest common denominator.

Culturally stereotyped gender roles and interests are also reflected in Web usage patterns. According to the Media Metrix report (Rickert and Sacharow 2000), women are the majority visitors to toy retailer sites, women's portals such as iVillage.com and women.com, greeting card sites, retail savings sites, and health sites. Men, in contrast, are the majority on sites containing technical content, financial information, sports, and news (CyberAtlas 2000).²⁰ The response of the business community to such findings is to target on-line advertising along gender lines (CyberAtlas 2000), thereby further reifying gender stereotypes. Thus while the Web may make women's (and men's) lives more convenient, it does not appear to be leveling gender asymmetries.

At the same time, if commercialization profits individual women, they can become empowered, through wealth, to make more far-reaching changes. Carlassare (2000) asserts that "women entrepreneurs are key players in the Net economy," as founders and CEOs of portal and community ventures, Web-based services ventures, e-commerce ventures, and e-business applications. Among the trends cited by Carlassare as responsible for the growing number of women entrepreneurs are an increasing recognition of the purchasing power of women on-line (in the case of businesses targeted at women), the availability of abundant capital resources, a growing number of female venture capitalists, and a shortage of people working in the technology sector. That female venture capitalists are more likely to fund female-founded businesses, which in turn

are more likely to cater to women's interests, points to the importance of a critical mass of women on-line. It further suggests that the more individual women are successful, the more likely the interests of other women are to be served, through their support.

Still, the number of women-founded businesses on-line remains low compared to the number of male-founded businesses. Moreover, companies with female CEOs received only 6 per cent of all venture capital in 1999, a disproportionately low percentage (Carlassare 2000). Finally, both women- and men-owned Web companies suffered in the early 2000s because of an overall decline in technology markets. If the rise of female entrepreneurs on the Web has been predicated in part on the availability of abundant venture capital, women-owned companies are likely to suffer first, and more acutely, as a consequence of economic downturns.

Pornography sites are a special case of entrepreneurial activity in which the female entrepreneurs are often sex workers or former sex workers (Glidewell 2000; Marsh 2000). As in other domains, women's entry into the creation and marketing of on-line pornography has the potential to change the nature of the product itself, tailoring it for female consumers (Royalle 2001). On-line porn, like the porn industry in general, is highly profitable, and thus far has been largely unaffected by the profit losses that have beset other "dot coms" (Cronin and Davenport 2001; Lane 2000). Nonetheless, the big profits in on-line pornography go not to individual distributors (and even less to individual producers), but rather to a small number of people (male) who control the major distribution channels, consistent with the gendered hierarchy of power that characterizes the pornography industry more generally.

4.3 Community and political organization

One of the earliest gender-related claims regarding the Internet was that it would enable women to organize politically, in order better to serve their common interests (Smith and Balka 1988). To what extent has this come about? In the 1980s and early 1990s, on-line discussion forums (such as the Women's Studies List and Women's Wire) were places where women could find community and share experiences and resources, and women-focused groups proliferated (including some with a women-only membership policy, such as the Systems mailing list; see Camp 1996). Some feminist groups also used the Internet to organize for the purpose of undertaking political action, although such uses were less common (Balka 1993). The advent of the Web allowed for easier and better resource sharing: files could be accessed by clicking, rather than by downloading attachments or using a file transfer protocol, and graphics and sound, rather than just text, could be shared. A number of non-profit organizations, from the Feminist Majority Foundation to the United Nations, have made use of the Web to make information available to women on topics ranging from elections to aging to lesbian diversity to on-line harassment.

However, posting resources on a Web site is not the same as organizing politically. Brown (2000) laments the failure of the Web to fulfill the earlier dream of an on-line "feminist revolution," suggesting that this may have been a minority dream in the first place.²¹ The typical female Internet user changed through the 1990s and beyond, from the educated academic woman influenced by the feminism of the 1970s and 1980s, to the middle-class post-feminist twenty-something; the political goals of the former are not necessarily shared by the latter (Wakeford 1997). This generational and demographic shift is also reflected in a discursive shift, away from grassroots politics and sisterhood, to individual self-realization, in Western discourses about feminism on-line. Thus the grrl.com site has a "fame" page listing all media citations of the founder, as an example of a "grrl" (i.e. a young woman who identifies with some sort of feminist or radical or progressive politics) who has fulfilled her personal goal – in this case, of becoming famous. And a US stripper's Web site defines stripping as a feminist act, on the grounds that it is a form of self-expression and a path to self-awareness (Clements 2001).

This trend away from social action to individual fulfillment is consistent with a larger trend on the Internet whereby communitarian discourses and discourses about participatory democracy are receding in importance as commercialism comes increasingly to the fore. Both trends are part of a larger cultural shift in the Western world in the direction of individual fulfillment, triggered by economic prosperity – much of it produced in the information technology sector itself – in the 1990s. In periods of economic expansion, plentiful resources allow all to benefit, and reduce social unrest. Social activism, in contrast, flourishes in periods of economic contraction, when biases in the distribution of resources are more apparent. The Arpanet/Internet was developed in a climate of economic inflation and high unemployment in the USA of the 1960s and 1970s. This was also, not coincidentally, a time of high social (including feminist) ideals, ideals which carried over into the conceptualization of the Internet by its early users as communal and democratic.

5 Discussion

Having presented evidence regarding gender in relation to on-line access, CMC, and the World Wide Web, we return now to consider to what extent the evidence supports the claim that the Internet fosters gender equality. The answer depends in part, of course, on how one defines "equality." On the one hand, as a dynamic, rapidly expanding technology, the Internet has created abundant opportunities for new forms of communication and commerce, from which both men and women have benefited. Women, as well as men, participate in computer-mediated communication, start discussion groups, create Web pages, and engage in entrepreneurial activity on-line. Moreover, unlike in the early days, there are as many women on-line as men.

However, to conclude from this that the Internet has lived up to its potential to create gender equality would be analogous to claiming that women and men are equal off-line because both use telephones, moderate meetings, write books, or start their own small businesses, and because they are roughly equally represented in the population of college-educated adults. While some people would indeed take this as evidence of gender equality, others would point out that men are better represented in high-status activities, encounter fewer obstacles en route to them, and receive better pay for them than do women. In other words, the fact that women are represented in those activities, while important, is not the same as doing them, and being rewarded for doing them, on a par with men. Moreover, it does not take into account that the people who own the telephone companies, run the educational institutions, publish the books, and control the financial resources (to say nothing of leading governments, the military, and religions) – in other words, the people who exercise power at the highest levels – are overwhelmingly men. To what extent, if at all, is the situation different on the Internet?

In many respects, the Internet reproduces the larger societal gender status quo. Top-level control of Internet resources, infrastructure, and content is exercised mostly by men. The largest single activity on the Internet – the distribution of pornography – is not only largely controlled by men, but casts women as sexual objects for men's use. The sexualization of women carries over into ostensibly neutral domains, such as recreational chat and personal homepages. In serious contexts, such as academic discussion groups, women participate and are responded to less than men. Moreover, it appears to be necessary for women to form their own groups to address their interests, suggesting that the default activities on the Internet address the interests of men. This evidence points to the persistence of gender disparity in on-line contexts, according to the same hierarchy that privileges males over females off-line.

Another sense in which the Internet was predicted to lead to gender equality is by rendering gender differences invisible or irrelevant. This is clearly not the case; traditional gender differences carry over into CMC, in discourse style and patterns of disparity and harassment, and on the Web, in images, content, and patterns of use. At the same time, women themselves choose to reveal their gender when they could remain anonymous, and produce gendered images (including pornography), just as women choose to frequent commercial Web sites that offer mainstream, gender stereotyped content. This leads to an apparent paradox: if traditional gender arrangements are disadvantageous to women, why do women, when adopting a new technology, actively maintain them?

Several possible explanations can be advanced to explain this paradox. The younger, less highly educated women who use the Internet today (in contrast to the more highly educated early adopters) may fail to perceive gender disparity in on-line social and commercial arrangements. The arrangements – especially inasmuch as they mirror off-line arrangements – may appear familiar, appropriate, and natural. Moreover, given the richness of opportunities the

Internet currently provides, they may not feel themselves externally constrained from doing whatever they wish on-line; that is, they may not perceive the existence of material and ideological biases.

Other women may be aware of gender asymmetries on-line and wish to change them, but find it difficult to do so. They may be unwilling or unable to forsake their own traditional gender socialization in order to "break the mold." They may feel that local resistance is futile, given the control exercised by patriarchy over the culture as a whole, of which the Internet is a product. Historical precedence and the commercialization of the Web both contribute to the appearance of inevitability of male control of the Internet. The designers and earliest users of the Internet were White, middle-class males whose norms and values (such as libertarianism) shaped its early culture (Herring 1999). The recent permeation of the Web by commerce and the mass media reinforces the traditional gender status quo and backs it with powerful financial interests (Brown 2000). Some women may comply with the status quo in their Internet use out of a sense of lack of choice.

Yet a third possible explanation holds that women (and men) maintain traditional gender arrangements out of rational self-interest, because such arrangements are perceived to be advantageous. This is the usual explanation advanced for men's resistance to social change (that is, the status quo meets their interests), but it can be extended to women on-line as well. Positive motivations for signaling (and even exaggerating) gender difference include gender pride, the social approval accorded to individuals for behaving in gender-appropriate ways, and the pleasure that can be derived from flirting, which often invokes binary gender stereotypes, in the relative safety of on-line environments. Negative rational motivations include the desire to avoid the unease one might feel in a truly gender-free environment in which one could not rely on familiar social skills and categorizations (O'Brien 1999).

It is likely that the ultimate explanation for women's complicity in reproducing traditional gender arrangements on-line involves some combination of the above factors. For the purposes of the present chapter, we may conclude that the idealistic notions that the Internet would create a gender-blind environment and would level gender-based power asymmetries receive little support from the evidence about gender and the Internet since the early 1980s. As a booming technology, the Internet provides opportunities for both male and female users, but does not appear to alter societal gender stereotypes, nor has it (yet) redistributed power at a fundamental level equally into the hands of women and men.

6 Future Projections

Framing our assessment in terms of starry-eyed ideals may not reveal the entire picture, however. The reality may fall short of the projections because

the projections were unrealistic in the first place, for example, because they were based on the problematic assumption of technological determinism. Computer networks do not guarantee gender-free, equal-opportunity interaction, any more than any previous communication technology has had that effect. But the interplay of a popular technology such as the Internet with social and cultural forces over time may yet lead to change, just as technologies such as the typewriter and the telephone have altered patterns of sociability and business practice, and affected women's lives, in particular, in significant ways (Davies 1988; Martin 1991). What might the long-term effects of the Internet look like, if we could project into the future?

One possible future outcome is that as more and more women go on-line globally, a critical mass will be achieved, such that the Internet truly becomes a balanced, neutral environment. An optimistic scenario for feminists predicts that an increasing number of women would then be in control of Web content and distribution, and that more women would become computer network designers and administrators, giving them real power – both numerical and technical – to shape the nature and uses of the Internet. If this trend were to continue, the Internet could become a true “women's Web” with women constituting the majority of its users and administrators. The likelihood of this coming about depends crucially on a critical mass of women entering information technology professions. Currently, the numbers of women in IT, as well as in computer science, are declining (Catalyst 2000); this trend would need to be reversed.

A “women's Web” would not necessarily result in empowerment, however, if the Internet were then to become associated with femininity, and decline in overall status as a result. The process of “feminization” has affected professions such as those of teacher and secretary, both of which were originally restricted to men, and originally carried higher status and higher pay. It has also characterized the evolution of technologies such as the typewriter and the telephone, which were used by businessmen before they came to be associated with low-paid female labor (typists and telephone operators) (Davies 1988; Martin 1991). The Internet, like these earlier technologies, can be considered inherently well-suited to female use, because it is clean, safe, and can be used indoors. Moreover, a primary use of the Internet – interpersonal communication – is one at which women have traditionally been considered more skilled than men. As the definition of computing has evolved from number-crunching to communication, some have seen an unprecedented opening for women to embrace computer technology, symbolically as well as practically (Kramer and Lehman 1990). Feminization of the Internet – a process arguably already underway as regards e-mail use (Cohen 2001) – could erode this symbolic gain by devaluing any behavior associated preferentially with women. Carried to an extreme, the process of feminization could lead eventually to the Internet no longer being defined as a technology, as has occurred in the past with the typewriter and with domestic technologies such as sewing and washing machines (Wajcman 1991).

The final alternative is that the status quo could be maintained, with women (and some men) primarily restricted to the role of low-level users of the technology, and underlying technological and ideological control of the medium remaining in the hands of men. This scenario is not the worst outcome that could be imagined. First, the current status quo represents a gain over the recent past, in which the Internet was limited to a predominantly male elite; it has now caught up with the larger society in which it is embedded. Moreover, while the mass medium nature of the Internet makes it a powerful vehicle for the dissemination and reification of gender stereotypes (as is also true for television), its ability to be used as a medium of interpersonal communication (like the telephone) potentially empowers its users to network for non-traditional, even subversive, ends. One can imagine a future in which the Internet boom has leveled off, and in which resources become more limited – circumstances under which disempowered groups are more likely to challenge the status quo. Should the circumstances propitious for a feminist revolution arise, the Internet may yet enable a fundamentally different kind of grassroots organization than has historically been possible.

NOTES

- 1 Radio . . . the telephone . . . cable television . . .
- 2 For a history of the development of the Arpanet and the Internet, see Hafner and Lyon (1996).
- 3 Women's access to the Internet is considerably more limited in Islamic and developing nations, although change in the direction of greater access is taking place there as well (Harcourt 1999; Wheeler 2001).
- 4 Recent estimates place the number of female CS professionals at around 35 per cent, mostly clustered in lower-level positions. Moreover, the number of female college students majoring in CS has declined, rather than increased, during the growth in popularity of the Internet in the 1980s and 1990s (Klawe and Leveson 1995).
- 5 For a description and overview of the development of different modes of CMC, see Herring (2002).
- 6 E.g. Kiesler et al. (1984), who concluded on the basis of experimental studies that people are more likely to "flame" and otherwise be disinhibited in CMC than in face-to-face communication. However, subsequent Internet research (e.g. Herring 1994) identified gender differences in flaming.
- 7 During the "anonymity" experiment in the Selfe and Meyer study, the listowner arranged to have identifying information stripped from message headers prior to distribution of messages to the list.
- 8 Contemporary asynchronous discussion forums hosted by Web sites make it easier for users to be anonymous, by requiring only that they type in something that satisfies the format of an e-mail address as an identifier for purposes of registering to use the site. Since the e-mail addresses are often not

- verified by the site, many users simply make them up.
- 9 For example, Bucholtz (forthcoming) finds differences from the generalizations presented here among female and male hackers on a Web-based discussion forum for computer specialists.
 - 10 An exception is men who infiltrate female-centered groups for the purpose of disrupting the discourse of the group (see, e.g., Collins-Jarvis 1997; Ebben 1994).
 - 11 The male message is from POLITICS-L; the female message is from WOMEN-L; both are by-subscription discussion lists. These examples are discussed in more detail in Herring (1996a).
 - 12 The other part of the explanation involves freedom from harassment; see discussion below.
 - 13 Many groups are implicitly men-centered, but they are not usually designated as such with the modifier "men" in the group's name in the way that women-centered groups have "women" as part of their names (e.g. Women's Wire, the Women's Studies list, the Society for Women in Philosophy list).
 - 14 I interpret the women's response to reflect a concern for their personal safety, e.g. from predatory male behaviors, rather than a concern for encryption or hacking issues, the other sense in which "privacy" on the Internet could be interpreted (but cf. Gilboa 1996). Respondents were given a limited list of "concerns" to choose from in the questionnaire; this list did not include "safety" or "harassment." For further discussion of the gendered dimensions of libertarian ideology on the Internet, see Ess (1996) and Herring (1999).
 - 15 As Danet (1998) notes, many nicknames in IRC are unrevealing as to gender, but some index gender: lisa1, CoverGirl, shyboy, GTBastard, etc. (Herring 1998).
 - 16 The female example is from the channel #love; the male example is from the channel #teensex. Both channels are on the EFNNet, a large and popular IRC network.
 - 17 See, for example, the PlanetGrrl Web site, at <http://www.planet.grrl.com/>.
 - 18 However, criticism has been directed at such sites as well, primarily for containing a considerable residue of traditional content (dating and beauty tips; horoscopes, etc.), and for their tendency to become increasingly "mainstream" over time (Brown 2000); see also below.
 - 19 For example, viewers of Web sites can navigate through the site, choosing what to view, and in some cases, providing input to the site itself.
 - 20 However, the most popular sites visited by both women and men are familiar portals, search engines, and general interest retail sites such as amazon.com, rather than sites offering gender-specific content (Rickert and Sacharow 2000).
 - 21 This perspective should be balanced against the considerable evidence of women's groups outside of North America using the Internet to mobilize support for women's political causes, sometimes on an international scale (Harcourt 2000).

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