GENDERED CONVERSATIONAL RITUALS ON THE INTERNET: AN EFFECTIVE VOICE IS BASED ON MORE THAN SIMPLY WHAT ONE IS SAYING[1]

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Abstract: The author uses ethnographic evidence to highlight the dearth of female voices and actors in the emerging information technology (IT) field. She uses a model of archetypal linguistic patterns to illustrate how male rituals prevail. She outlines the historical power relations, and medium-specific traits that help to explain why the male linguistic bias persists even as females enter the field. The Conversational Rituals Model employed here is grounded in established gender theory, and in particular in Tannen's sociolinguistic research (1990, 1994). The communications of both Users and Innovators are analyzed in terms of Purpose, Environment, Style and Content. The author demonstrates that when the male linguistic style is privileged to the exclusion of others, it is problematic because (1) the reduction in diversity diminishes the overall quality of the medium and (2) it creates systemic barriers to effective participation by sub-dominant groups by indirectly forcing them to adapt to the dominant male conversational norms in order to communicate effectively. By framing IT communications with theories of the contingency of language (Davidson 1984; Rorty 1989), and the cultural-biases inherent in public spaces (Fraser 1994), the author argues that intervention is justified and vital. Potential solutions are discussed.

Résumé: L'auteure utilise des preuves éthnographiques pour mettre en évidence le manque d'acteurs et de voix femelles dans le nouveau domaine de l'Information Technologique (IT). Elle se sert du modèles des patrons linguistiques archétypals pour illustrer la manière dont les rituels mâles dominent. Elle expose brièvement le pouvoir historique des relations ainsi que les traits spécifiques au médium afin d'expliquer pourquoi le parti-pris linguistique mâle persiste alors même que les femelles entrent dans le domaine. Le modèle des rituels conversationnels qu'elle

emploie ici est fondé sur la théorie réputée des genres, et en particulier les recherches en sociolinguistique de Tannen (1990, 1994). Les communications des Utilisateurs et des Innovateurs sont analysées en termes d'Intention, d'Environnement, de Style et de Contenu. L'auteure démontre que lorsque le style linguistique mâle est privilégié à l'exclusion des autres, cela devient problématique 1) parce que la diminution de la diversité amenuise la qualité globale du médium, et 2) parce que cela crée des barrières systémiques qui empêchent la participation réelle de sous-groupes en les forçant à s'adapter aux normes conversationnelles des mâles dominants afin de pouvoir communiquer de façon efficace. En encadrant les communications de l'IT avec des théories sur la contingence du langage (Davidson 1984; Rorty 1989) ainsi qu'avec celles sur les partis-pris culturels inhérents aux espaces publics (Fraser 1994), l'auteure démontre que l'intervention est justifiée et vitale. Elle propose des solutions possibles.

Introduction: Gendered Conversational Rituals on the Internet

> Human evolution is now inextricably bound up with technological evolution. Humankind is co-evolving with its artifacts, and the genes that can't cope with that new reality will not survive into future millennia.
> — Richard Dawkins, in Schrage 1995:120

The increasing frequency and gravity of predictions such as the one made by Dawkins are an indication of the growing role that technological competence will likely play in determining one's capability and success in the near future. That technology affects our lives is hardly news, but what is often overlooked is how groups are differentially prepared to adapt to the changes and how the prevailing culture surrounding the introduction of the new technologies can be a factor in people's willingness and ability to accept and master them. Conversational styles, which are highly gendered, influence people's effectiveness in adapting to certain communication environments, and it seems that the emerging field of information-technology is no exception. While much of the rhetoric surrounding the flowering of the Internet and other information technologies (IT) is "steeped in the language of liberation and utopian possibility," of "a participatory democracy" (Turkle 1995:246-247) the actual situation remains one where the vast majority of innovators and Net-users are male (O'Reilly 1995; Spender 1995). Furthermore, the females who are there, are not being effectively "heard" (Herring 1992). This essay in sociolinguistic ethnography explores the dearth of female actors and voices on the Internet, and explores why this is so. In a qualitative analysis which is based upon on-line experience and a reading of popular IT periodicals, I illustrate how the historically based, prevailing communication culture works against women's

typical styles. I also discuss why this is a detriment to *all* users and innovators, and thus a relevant problem for social policy. The aim here is to challenge built-in assumptions in the model which portrays the current IT world as "egalitarian" in order to develop solutions that could direct progress towards actualizing this ideal. There is thus no intent to moralize about hegemonies, for, as McLuhan wrote, "value judgments create smog . . . and distract attention from the processes" (Wolf 1996:125). These challenges involve taking a closer look at prevailing myths about the "public sphere" (Fraser 1994; Haraway 1995; Spender 1995), and at the contingency of language (Rorty 1989; Davidson 1984). I will use these ideas as heuristics for revealing the IT-world's socially constructed myths or truisms, and how these continue to operate as, and reproduce, cultural barriers to effective participation by females.

The dearth of females involved in IT may sound old hat at first, given the history of the sciences as a male domain, and common beliefs about the time required for a new group to make its way through the hierarchy These relevant but platitudinal responses do not work in the fledgling field of information and communications technology and in particular the Internet. First, the field's newness means that the "pipeline" is shorter than average and that the leading speakers are thus disproportionately young, yet still mostly male Secondly, many of the current leaders in the field come from a myriad of non-science backgrounds: Barlow was a cattle rancher; Kevin Kelly was in management; Mitch Kapor was a futurist; Brian Eno was a composer; and Louis Rosetto and Jane Metcalfe (Editors of *WIRED*) were "hippie" journalists travelling in Europe. They all share an enthusiasm for the potential of IT and the Internet, once called "the giant all-knowing brain . . . a place where curiosity is rewarded" (Seabrook 1994:56), but why this enthusiasm is much less commonly manifest among females is unclear. In fact, research has shown that females are as interested and successful as males in the introductory levels of computer use and programming, but that most get "turned off" somewhere along the line and turn their energy elsewhere (Spender 1995:227-228, 233; Turkle 1995:54-59) Here I explore how common tendencies in the conversational styles of males and females contribute another piece to solving this puzzle.

Hypothesis

> Control over change would seem to consist in
> moving not with it, but ahead of it.
> — M. McLuhan, in Wolf 1996:182

The theory explored in this paper is that women's relative invisibility on-line and on the frontiers of the Net (innovation, development, policy, reporting) is in part a direct result of female communication styles, and is thus a cultural, not a "natural," phenomenon. I concur with Spender that the emerging forum

offers a "potentially egalitarian network" (1995:227) in which diversity is acceptable and even encouraged for its vital overall contribution. For now, however, the reality of the Net and its related areas falls short of this ideal, indicating a need for a pro-active effort to understand why, and to catalyze a process of change where needed. As O'Connor quips, the time has come for a "Department of Social Policy for Cyberspace" (Spender 1995:xiv). I will show that this IT world originated and continues to operate with primarily male-oriented communication rituals, and how these intrinsically serve as barriers to other speakers' effectiveness. This challenges the prevailing meta-narrative of the Net as a classic kind of "public space" where deliberation transpires in a "culture-neutral" way (Fraser 1994:86). In revealing the history and the power relations behind the existing linguistic patterns in IT, I aim to establish the "contingency" of this language (Rorty 1989), thereby making discussion of how to change it justifiable. This point should be particularly salient for those who continue to insist on minimizing intervention in IT/Internet culture. In making a case for intervention, I have assumed, following Rorty, that there is no single "right language" that is naturally "out there," but rather multiple, useful kinds of languages which are better maximized through orchestration than by collapsing them into one.

Methodology

After experiencing first-hand an unmistakable bias in the language of the Internet world, I was compelled to explore further. Since it also seemed that there were few female voices there, and because the prevailing language resembled the male-oriented style of communication that I recognized from the business world, I chose to explore how language and gender might be linked in the IT world. An initial search revealed that, indeed, the field was mostly populated by males, with figures suggesting that males represent anywhere from 67 percent (O'Reilly 1995) to 94 percent (Spender 1995:xvi) of people on-line and 85 percent of the readership of *WIRED* (Hyland 1994:12), an extremely successful periodical about, and for, innovators in the field. The discovery that women were largely absent in either developing or using/understanding this tool was disconcerting since, as Negroponte avers, "computing is not about computers anymore. It is about living" (Spender 1995:xv). Moreover as Spender argues, "the computer is not a toy; it is the site of wealth, power and influence, now and in the future." meaning that if females do not gain a foothold in developing and using this tool, they risk marginalization as the "information-poor," a plight she parallels with illiteracy in the Third World (1995:xvi). This led me to look for cues to why females would be largely absent from such an important development. There is a growing literature about women's relations with science and technology and it has begun to reveal that, contrary to Western myths, women have indeed been involved, but

that their contributions have been largely overshadowed by men's work. Other studies which incorporate a historical perspective have also shown that in the West, women's ways of working with science have been marginalized (Turkle 1995) and even outlawed (Spender 1995:163-164). But still, even those females who were involved in this world did not appear to have an effective voice, so how could that be explained?

The next step was to explore the literature on sociolinguistic theories both generally and with regard to gender. Tannen's work on gendered conversational styles, which incorporates insights from a wide range of Western sources, provided the necessary empirical background for developing a model of the broad tendencies in the conversational style of males and females (1990, 1993a, 1993b, 1994). It is outlined below. Fraser's reinterpretation of "the public sphere" (1994) was a valuable progression from Tannen's model in that it contextualized linguistic strategies within a larger sphere, one of which the agent may not be aware and is often unable to influence. Finally, contingency theories of language, pointed to the possibility of seeing the existing Internet language patterns as culturally constructed, not "natural" or necessarily optimal (Rorty 1989). This substantial background informed my ethnographic analysis of the Internet world, including both the users and the innovators (see below). Initially, however, I will present an overview of the background research alluded to here, as well as an account of the conversational model.

Women, Science and Technology

In an attempt to understand why females were less involved and apparently less vocal in the IT world, I explored a variety of ethnographic sources and texts in gender theory concerning technological expertise. The literature that does exist points to a common, gendered division of interests and labour both in the West and abroad, but also to an exaggeration of this effect, which arises out of the early bias of colonialists and the latter-day bias of entrepreneurs and researchers from the West. There are various examples of women's involvement, but these have often been suppressed or ignored. Importantly, there is a fairly strong consensus among theorists about broad differences in behavioural pattern between males and females that dovetails with the conversational model employed for this ethnography.

There is a modern perception that, in many countries, women are amongst the poorest of their people, with the least access to technologically advanced tools. The statistics bear this out, inasmuch as women tend to lose economic status and independence in countries that are being modernized by Western, neo-colonial interests (Bossen 1979:111-114). Bossen shows, however, that it is not women's lack of ability that is at issue; rather, that colonialists and their successors, the global entrepreneurs, have reproduced their cultural norms

which privilege men's access to training and place "higher value" on skill-based, capital-intensive jobs than on traditionally female work like child-rearing (ibid.). Thus, such cases of women's non-involvement were often produced by specific, historical relations of power.

Furthermore, it would appear that women often *were* involved, but over-looked because the researchers' focus distorted their observations (Wright 1991:196-200). Re-analyses emerging out of archaeology (Gero and Conkey 1991), and in the history of technology (McGaw 1989, 1994; Schwartz-Cowan 1983), have revealed this temporal and Euro-centric "positionedness." For example, women are now being credited with a leading role in developing complex firing technologies for pottery-making in Anasazi Pueblos (Kintigh 1995) and in South Asia (Wright 1991:196-200). Other contemporary ex-amples are discussed in the ethnography section.

While women appear to be equally able to contribute to scientific and tech-nological work, the theorists do generally agree on certain tendencies in the gendered division of interests and labour that may in part explain why males have been more involved in this field. Theorists associate males with "public domain," "universalistic concerns" (Rosaldo 1974:23-24), "social orienta-tions" or *mbo* (Strathern 1980:190) and "culture" (Ortner and Whitehead 1981:7) and females with the respective counterparts of "domestic domain," "self-interest" and "nature" (Cucchiari 1981:40). While these categories are neither universal nor uncontroversial, there is a consensus that they are useful heuristically. Another permutation of this approach is that men tend to be de-fined "in terms of status and role categories. . . . Women by contrast, tend to be defined almost entirely in relational terms" (Ortner and Whitehead 1981:8). These ideas form part of the theoretical foundation of the gendered conversational model examined below. Later I discuss how IT contributes to a significant blurring of the public-private boundary, which affects but does not mute these ideas. In addition, in contrast to the less-"developed" societies of Oceania which are cited in much of this work, women have been participating in the public realm in the industrialized West for some time now, a fact which again blurs that simple boundary.

While there appears to be no definitive evidence that men are best suited for the role of technological innovator, it is clear that technical expertise does have a certain cumulative effect. Spender uses the evolution of print as an ex-ample of how the initial developers and users of a new technology set the ground rules with preference given to their *own* strengths, thereby constrain-ing subsequent people who would prefer to operate in a different style (1995:10-26). Citing the fact that only 5 percent of those quoted in the *Oxford English Dictionary* (1973) are female, Kernan remarks, "Those who can shape language can determine what is reality and what is truth" (Spender 1995:24).

Linguistic Theory

It is particularly appropriate to regard the IT world with a linguist's perspective, given that on-line communication involves comparatively few paralinguistic cues in contrast to many other types of interactions. Below, I present the gendered, conversational model to be used and the classic linguistic theory it reflects. I then discuss how the model incorporates an understanding of the power relations involved in the formation of any language, and the attendant implications for this study.

The model to be used in this analysis is based primarily on insights culled from Deborah Tannen's work on gendered, conversational rituals (1990, 1993a, 1993b, 1994). Tannen shows how people's world views influence the way they communicate and the way they perceive what others say to them. She shows that there are common patterns which differentiate male and female world views[2] and that they are distinct enough to make cross-gender conversations parallel to "cross-cultural communication" (1990:18). Like Sapir (1964: 128), Tannen explores the meaning behind the words, showing how language rituals and strategies are both frequently ambiguous and polysemous. Meaning can vary depending on various factors, and a key one has been found to be gender (Tannen 1993a:173). Conversational confusion is particularly acute when conversing across "cultures," since "rituals depend on mutuality" (Tannen 1990:57).

Tannen's research reflects the American linguistic tradition which sees language and culture in an ongoing dialectic of change (Boas 1964:18-20; Hymes 1964:6). In this view, people are socialized with certain gendered communication norms. However, it also incorporates a more agent-centred view of language in that individuals are seen as making choices about the language style they use, whether or not they are conscious of why they do so. For example, she demonstrates how women in the business world often change their conversational style to a male-model, because they perceive it to be the dominant and thus most effective style in that environment (Tannen 1994). This echoes Davidson's shift to treating language as a "tool" rather than a "medium" for communication (in Rorty 1989:11, 19). He further explains the necessity of multiple, alternative "tools" for optimal communication, which foreshadows the case I will proceed to make for the benefit of diverse linguistic styles on-line.

The insights that ground this model are indicative of gender differences which have emerged from empirical research, but are not intended (by Tannen or myself) as an absolute, binary classification of male and female styles. Rather, they should be seen as tendencies which most males and females follow in regular conversation. The foundation of this model is the fact that females generally see the world as a network of connections, whereas males see it as a hierarchical social order (Tannen 1990:24-25). Females therefore focus

on connecting and their position within a network of relations, while males fo-
cus on status and their position in the hierarchy. I have grouped the remaining
elements into two "syndromes," male and female, as shown below. They are
syndromes in the spirit of Jane Jacobs' moral syndromes (1992), meaning that
the elements of a syndrome are interrelated and interdependent.The model re-
flects an understanding of both the functional use of language by individuals
as well as the power relations that precede and produce discourse. The latter
derives from the recognition that the conversational differences between the
genders originated and are reproduced in the social-cultural arena wherein
power dynamics, often imbalanced, are enacted (Tannen 1993a:166). Addi-
tionally, it demonstrates that there is more than one reasonable style, thus
problematizing the existing hegemony of a single, select style which comes to
have "the inertial authority of habit and instinct . . . the horizon of the taken-
for-granted" (Hall 1988:44). Importantly, while the para-linguistic symbols of
power and position are less overt on-line, gender is still usually known by the
person's *handle* (signature on the Internet).

Conversational Ritual Syndromes Model
(based primarily on insights in Tannen 1990, 1994)

Female	*Male*
Community as a network of connections	Community as a hierarchical social order
Focus on connections	Focus on status
Focus on equality among participants	Focus on relative position of participants
Expend effort to keep everyone equal	Expend effort to avoid being put "one-down" by others in a conversation
Value creating closeness and intimacy	Value maintaining independence in the conversation and autonomy through conversation
Most comfortable in "private" environment (1-on-1, phone call, intimate dinner)	Most comfortable in "public" environment (meeting, party, story-telling)
Preference for "rapport talk" (establish or maintain connection by sharing concerns and/or authority	Preference for "report talk" (convey information, establish/improve one's position by assertions, boasting or humour)
Indirect language, attenuated suggestions to request action	Direct language, straightforward requests to get something done
Often adjust content or message depending on impact on listener	Tend to report content consistently to all

These differences in world view have behavioural consequences in actual conversations. For example, Tannen demonstrates women's ritual use of "apologizing" in conversation. In female-only conversations, this is meant and understood as part of the way to maintain equality/balance in the relationship. A female manager might "apologize," for example, "for being so picky on this document," when asking her female assistant to correct her errors; the errors are highlighted but the assistant does not feel "put down." In fact, they both understand that it is the assistant who has made the error. When the "apology" ritual is used by females with males, however, it tends to be perceived by the male listener as unnecessary, and evidencing a lack of confidence on the female's part. In the latter example, the male assistant might have inadvertently left his boss in the "one-down" position (in the hierarchy) that she put herself in because he did not understand that her apology was a *ritual*, not a *literal* one. He would probably have been unfairly judged by her as impertinent. In either of the above situations those people who are operating out of their cultural context will be at a disadvantage in terms of their conversational style, making them less effective contributors overall.

If it seems odd to think of purposely massaging or adapting the language of the IT world, then hear how Rorty describes what Davidson has to say about the fluidity of language and vocabulary: We must "face up to the contingency of the language we use" so that we are no longer so resistant to changing it (Rorty 1989:9). If indeed "reality is indifferent to our descriptions of it," we are thus liberated from having to find the "ideal" language and able to be philosophically open to the multiplicity and dynamism of language and our role in constructing it (Rorty 1989:7). The importance of these theories for the present ethnography is that they counter the common argument that what already exists (in this case one dominant linguistic style in the IT world) exists because it has emerged as "the best" naturally, and should thus not be tampered with. Instead, Rorty's ideas empower us to actively change our vocabulary in developing more useful ways of expressing things.

Beyond the philosophical framework, this model is well grounded in various classic linguistic theories. What Tannen calls "conversational rituals" are akin to Pike's term, "behaviour events," which were like units of analysis (Pike 1964:54-58). The way that Tannen has exposed an internal logic to the linguistic system of both genders echoes the way that Conklin showed the importance of an emic understanding of a native "system" in his work with the colour vocabulary of the Hanunoo (1964:191). Finally, Frake precipitated Rorty's ideas on the dynamism of language in his work with the Subanum where he proved that the extent of vocabulary and levels of contrast to describe something increase in proportion to the number of usage situations people have for it (1964:205). Language creation, and its potential as a barrier

to entry, are of particular importance in examining language in the IT world, given the language proliferation likely to occur at this inchoate stage.

The Ethnographic Evidence

Internet culture is an unusual beast for ethnography in that its actual behaviour is predominantly mentalistic or "virtual" and its output (electronic messages and documents) occurs "internally," along fibre optic cables and between electronic synapses somewhat hidden from observation. These two traits make net communication and culture creation difficult to "observe" in the traditional sense of participant observation. Additionally, defining a single cultural set of norms is an elusive goal given the group size, 20 to 30 million globally (Lappin 1995:175; Spender 1995:xv), spatial diffusion and diversity, ranging from Usegroups (a discussion forum) on <alt.parenting.boys> to <alt.sex.bondage>. That being said, there are two ethnographic "windows" onto the culture of this world where humans and technology closely interact.

First, one can get on-line oneself, as an "observing participant," doing research in a familiar cultural milieu (Spradley 1980). The purpose and degree of people's on-line usage are clearly variable; however, many of the on-line conversational rituals and etiquette transcend subject boundaries, as Negroponte suggests in his general "Netiquette" column in *WIRED*. The ethnographic evidence for the on-line experience includes sources from my own and others' research which looked specifically at either gender or language in various on-line fora. To gain insight into the culture of the innovators' side of the IT world, an analysis of the leading periodical articles on this world was conducted. In addition, the relevant findings from related research on the IT-human interaction were consulted. For example, Turkle has done extensive interviewing of users and innovators in order to try to understand how our interaction with these technologies has and will influence our self-concept. In this research she uncovered various gendered patterns (1995). Spender presents a historical survey of gender and technology and uses this as a lens for exploring how males and females are working within the current technological transformations (1995). The periodical evidence is derived from various sources, and focusses particularly on *WIRED*, because it covers human-technology interface issues, and technical advances from the innovators' perspective rather than the hacker/inventors' angle. This reveals both *what* the innovators talk about and *how* they talk about it. *WIRED* culture is surely also influenced by the culture of economic competition in which most of its readers operate. However, this does not lessen its validity as a basis for this ethnography since the aim is to understand the general culture which males and females face when they enter the IT world, of which business is an inextricable part. Applying the Conversational Ritual Syndromes (CRS) model to these fora illuminates why sociolinguistic analysis is an important factor in determining the population and style of the IT world.

Two taxonomic distinctions are made in the structure of this analysis of conversational rituals. First, I have distinguished between communication in (1) the on-line world of *Users* and (2) the frontier world of *Innovators*, including developers, inventors, reporters and policy makers. Although there is some overlap between the groups, they are distinct enough to make an analytical division useful. The second taxonomy outlines four elements of each of these groups: *Purpose*, *Environment*, *Style* and *Content*. This set of elements is listed from the more fundamental to the more derivative. These taxonomies facilitate identifying and isolating the sources of both female-biased and male-biased linguistic rituals. What follows is an analysis of the ethnographic evidence.

A. On-line World of Users

The widely advocated position of pro-Internet people is that the net is "open to, and for, everyone" (Seabrook 1994:55), part of what Turkle calls the "utopian" contingent (1995:231). While it is true that no *one* communication style dominates the on-line world completely, the CRS model reveals that the male conversational rituals are significantly more pervasive. The minimal paralinguistic cues immediately present on-line, such as body language, status, age and intonation of voice, create an environment where language becomes particularly influential and thus salient to understanding who is comfortable and effective "speaking" there and why others are not. Users acknowledge that they take the few descriptive cues they *do* have about an on-line conversational partner and create a whole mental image of what that person is actually like (Turkle 1995:207). Since there is often minimal information to work with, the created image is mainly buttressed by standard extrapolations of gender or style, often reverting to archetypes or even projections of what they "wish" the partner was like (ibid.). While speaking of another medium, Derrida provides insight into the joint production of discourse and relations on-line as well: "writing is constructed by the audience as well as the author" (paraphrased in Turkle 1995:17).

The evidence shows that the predominant culture on-line is distinctly male-oriented and clearly influences "who gets heard," to use Tannen's phrase. Factors contributing to the male-style culture include the "public" aspect of most of the environment, the ubiquitous debate-style, the transitory nature of many fora (BBS or bulletin board services, discussion groups) and the spatial and relational distance from the conversational partner. There are still caches on-line that accommodate both genders' styles, but even women-only fora are often deluged with male postings (Spender 1995:196).

A1. Purpose

There are as many individualized reasons for logging-on as there are users given the myriad of possible activities on-line. Most relevant to the current examination is the *functional* purpose for going on-line from the users' perspective (as opposed to emotional or ego needs). The original creators and users of Cyberspace were US scientists and military personnel who developed it as an alternative, private means of communication during the Cold War years (Hafner 1994:153). Wylie argues that these cultural roots are a key reason that the current incarnation, the Internet, continues to be perceived as "male territory" (in Spender 1995:165). Indeed various studies have revealed how teachers and parents continue to see computers and the IT field as more important to the future of males (60%) than females (26%) (Cole et al. 1994:80, in Spender 1995:179), and that boys are "naturally" better at it than girls (Willis 1991, in Spender 1995:179-180). Despite these odds, both males and females *are* on-line now.

The main things people currently *do* on-line are to "talk" (send messages) to familiar acquaintances, talk to non-acquaintances (general group postings) and retrieve or post data (home pages, reference texts, books, software). I will exclude the area of "tasking" (shopping, bill payment, stock quotations, etc.) since it is such a small part of current net traffic (Schwartz 1994:148-153). These net activities can be roughly classified according to two basic functional purposes for being on-line: (1) to get "connected" with people and (2) to share learning. Given the high value females place on networks of "connection" as cited in the CRS model, the first purpose fits well into the female syndrome. For this reason Sadie Plant, a cyber-feminist, argues that female-style communication will be the cornerstone of cyber-talk; "the medium is more attuned to women's way of working in the world than to men's" (Cross 1995, in Spender 1995:229). Later, I return to this position in terms of discussing solutions; however, first I address the lived experience of users. The second purpose, "to share learning," is linguistically gender-neutral since both genders engage in this activity. It is in how and where they do it that they differ as we will see below.

A2. Environment

The on-line environment is the structure within which the communication transpires. The net linguistic environment falls far on the male end of the CRS spectrum, despite the female connectivity principles on which it is based. Four of the five main types of on-line sub-environments reflected male-oriented characteristics when examined with the CRS model. The sub-environments include the physical sphere, and, within the virtual sphere, basic e-mail, usegroups, chat rooms/MUDs (multiple user domains) and information/software sharing. This analysis treats "public space" as a place where people say or

write utterances for more than one person and often cannot know or control who has access to them, as implied in Tannen's research. Fraser's re-examination of this concept is also valuable as a way to contextualize net-communication within a larger discursive arena

Fraser demonstrates how Habermas's inceptive formulation of the "public sphere" as an arena of political participation with objective, neutral deliberation no longer reflects the power-laden, lived reality of existing public domains (1994:74-77). She argues that the public sphere is not "a space of zero-degree culture" because we are incapable of "bracketing-off" people's intrinsic diversity in culture or status (ibid.:83). Accordingly, Fraser's representation of the public sphere identifies a principle "public" for the dominant discourse and several "parallel discursive arenas" for "subaltern counterpublics" (SC's) (ibid.:84). By proving that public spaces, like cyberspace, do have a power dynamic, Fraser leads us toward a critical examination of its culture. When people profess that social inequalities do not influence a situation which they actually affect, it "works to the advantage of dominant groups" because it dismisses the extra effort subaltern groups must exert in order to be effectively heard (ibid.:82). Furthermore, Fraser's articulation of the dialectical relations between groups is a constructive concept that will be reiterated in our conclusions about the resolution of this problem.

The actual *physical user environment* is attuned to male syndrome preferences. The user works alone at a personal computer, either at home or in a lab or office. Either way, the user's focus is on the virtual reality (VR) accessible through the computer, and by default temporarily excludes interaction with real life (RL). "E-mail is not a substitute for direct interaction," writes Bill Gates, President of Microsoft, alluding to the fundamental difference between physical and virtual communications (Seabrook 1994:48). Structurally, this physical configuration is male-oriented in that it ensures the user's interactional "independence and autonomy." As Gates suggests: "If someone isn't saying something of interest it's easier to not respond to their mail than it is not to answer the 'phone" (ibid.).

Typically, *Basic e-mail* is exchanged directly between people who know each other (from the virtual or the physical world) and thus most closely resembles "Rapport Talk" in a "Private" environment—both female conversational preferences. The user can express ideas in any preferred conversational style and expect to be "heard" because the understanding is that writer and receiver are committed to the conversation. Barlow says e-mail is "as intimate as it possibly could be without me whispering it in your ear" (Tough 1995:39). The user can also adjust his or her content and style based on what is already known about the receiver and on how the receiver responds to each message. This also fits the female syndrome. Spender parallels this connective activity with women's use of the telephone, calling it "nattering on the net"

(1995). Importantly, her research also reveals that many women are admonished for "using the net for social purposes" as if their networking had no value in contrast with the more common male uses like "info-surfing"[3] and gaming (ibid.:241). While females are not then forcibly restricted from using the net in their own way, this invidious privileging of one way of working over the other has the effect of reducing their ability to feel comfortable operating there.

Usegroups or *Bulletin Board Services* (BBS) are clearly male in structure. They are "public spaces" as outlined above, where members can number from 10 on the <alt.climbing.canada> group, to 10 000 on a popular conference like the W.E.L.L. (Whole Earth 'Lectronic Link). Communication is conducted through "postings" or messages transmitted from one member to all other members automatically. Thus it is an environment of public utterances meant to convey information (facts and opinions) like the "Report Talk" style of the male syndrome. To effectively "be heard" in this environment also requires that you assert your opinion/thoughts on your own without being invited in via a ritual invitation, which females often feel uncomfortable about.

Research on usegroups shows that this discomfort is borne out in that females make drastically fewer contributions than males, even when they are present in numbers. For example, one study of conversational space on a BBS with a sizable number of female subscribers found that there was only once in five weeks that females had more space than males for their *"thread"* (a topic string). The result was a reaction by the males who charged them with being "bitches" and "man-bashing." These *"flames"* even took up more space than the original thread had involved (Herring et al. 1992, quoted in Spender 1995:224). These verbal attacks can and do often intimidate people into removing their subscriptions (*un-subscribe*) from the list altogether as was the case on the active professional usegroup <ANTHRO-L>. While participating in what began as a normal discussion thread, Ms. X was flamed by other anthropologists with personal insults and juvenile quips such as: "I suggest you try reading the Usenet group alt.usenet.kooks sometime," "I generally try to avoid flaming people but I'll make an exception for you" (see <ANTHRO-L> Archives 1994). Importantly, there were other male contributors *supporting* Ms. X, illustrating that these gendered paradigms are not absolute.

The content analysis that I conducted on all threads on <ANTHRO-L> during a randomly chosen week (<ANTHRO-L> Archives 1996) revealed the same space patterns as Herring's study. While females make up over a third of the subscribers, they accounted for just 19 percent of the conversational space. While females did post 29 percent of the total messages, the male's messages were on average 62 percent longer than the females, resulting in their significantly larger space. Furthermore, of the 30 posts which included sarcasm directed at another

list-member, 25 were from males. In addition, all uses of attenuated language, such as "What I was trying to give expression to" and "I did this inadequately . . ." or "Perhaps this is academic snobbery but . . ." or "That is just my take on it" were by females and not reciprocated/acknowledged by any members. During that time two females also posted their intention to remove their subscriptions to avoid further derogation for being feminists.

Their intention to move to all-female lists may not get them much further. In her on-line analyses Kramarae has found that even lists which explicitly inform new subscribers that the list is intended for females only, to address female topics, find that eventually male subscribers dominate the threads (Ebben and Kramarae 1993:17-18; Kramarae and Taylor 1993:55). Still, there is an increasing number of women's groups on-line covering topics from science to romance, and they are actively monitoring their members' gender. While I am principally interested here in *cross-gender* communication, future research comparing the linguistic patterns between female and male fora will be useful. Either way, the dominant male-style of discourse acts to enforce a single, default style for how to communicate effectively.

The unregulated environment of these fora also makes them inherently vulnerable to being dominated by the most aggressive "*posters*," which appear to be the males. Herring found that the outcome of male-oriented "*netiquette*" is that females "make no contribution to the male-dominated communication" and respond to flames (scathing posts about your message) with a "retreat into silence" (Spender 1995:196-197). Gigante of R.M.I.T. writes of his astonishment at the on-line environment of some BBS: "People tend to be far more abusive on BBS or e-mail than they would face to face. . . . [In RL] they would be sued for libel" (Painter 1993:8). Currently, there is no recourse for people, no formal grievance procedure. While the aggressive, direct challenge-style characterized by the male syndrome can be effective for various things, the effect it has in this environment seems to be to simply drown out other voices. Clearly this hurts the subaltern groups like females; however, it is also a detriment for all users. It reduces the capacity of the net to grow and improve by quashing the diversity which is precisely the aspect that could invigorate it.

Chat rooms and *Multi-User Domains* (MUDs) can go both ways, so to speak. Their structure is a "real time" virtual space to which users log-on to observe the public postings being made or to get involved in one-to-one posts with people who become interested in them as a result of their public postings. One on-line hacker, <Cybergal>, remarks that the more outrageous the user's public postings are, the more numerous and interesting private posts he or she is likely to be sent (Cybergal 1995:104). Some chat rooms and MUDs are structured like real-life (RL) cafes or bars, while others are more fantasy-oriented, like electronic Dungeons and Dragons, but in both "words *are* deeds" (Turkle 1995:15). Turkle's extensive interviews with people about

their MUD'ing experiences reveals many differences between male and fe-
male motivation and behaviour in them (1995). Interestingly, she discovered
that both males and females are discovering how culturally constructed gender
is as they role-play characters of the opposite sex (ibid.:188-215). Her inter-
viewees' reasons for the extent of gender-swapping (e.g., HABITAT has an
RL male:female ratio of 4:1 but a VR one of 3:1 [ibid.:212]) suggest that
people feel constrained by a mono-gendered communication style (ibid.:
211-222). In this analysis, however, I am most concerned with the language in
fora where the stakes are higher than in games for not being able to communi-
cate effectively in one's own voice.

Chat rooms are like a combination of e-mail and usegroups, so they mani-
fest both male and female CRS elements. However, since the user must begin
by making connections in the public arena, it is still an environmental struc-
ture that favours male conversational style.

Information/software sharing involves both giving information by posting
it and getting information by retrieving it. The environment for doing this is
public and in the male domain in that the information is publicly available and
that the user goes into an open forum to post or retrieve it. The nature of this
information is also male, as discussed below in part A4. There is also no "ap-
plication process" or gatekeeper to most of this information and also no com-
mitment required on the part of someone taking it to give anything or to ever
"return" (virtually) to the site. In this sense, interaction with the Internet is
like a conversation which retrieves the desired information while simulta-
neously preserving independence. Clearly, this kind of culture is more appeal-
ing to males interested in autonomy than females interested in building con-
nections and interdependencies.

The overall lean towards male conversational rituals in the on-line environ-
ment presents an obstacle for those with the female style. Various women
have, of course, overcome this bias and enjoy net-surfing as much as their
Y-chromosomed friends. The issue remains, though, that when one tries to fit
into an environment designed for a different conversational style, it is in some
ways akin to operating in a foreign country with a new language. It takes time
and exhaustive effort to learn how to express meaning in a way that communi-
cates the same competence and confidence exhibited in one's native tongue. In
the net environment, females thus have an extra burden of learning new, male
conversational rituals if they want to effectively *get heard*, not just to talk.

A3. Style

> Subordinate groups sometimes cannot find the
> right voice or words to express their thoughts,
> and when they do, they discover they are not
> heard [anyway].
> — J. Mansbridge, in Fraser 1994:81

As we have remarked, there are no explicit or regulatory barriers to using any style on the net. Initial evidence, however, indicates that male-style conversational rituals are most prevalent on-line. While frequency does not always imply success, it can be a self-fulfilling prophecy to a large extent. That is, if everyone is using one conversational syndrome, then in order to supersede it, your syndrome cannot simply be an equally viable system, but rather must be an improvement on the dominant one. If it is not, there will be no motivation to change. Tannen has shown that the male and female syndromes are equally valuable when understood through their own internal logic. Therefore, one cannot easily supersede the other if it is already established. This increases the urgency for increasing female involvement in the inchoate stages of the net's development, to avoid being left with "half-truths" based on only half the people's experience (Spender 1995:xvi, xxv, 18, 162-169; Turkle 1995:250-258).

Understanding conversational style on-line requires distinguishing between ideology and practice, which is often problematic in gender research (Cucchiari 1981). Net ideology emphasizes that the Internet is a communications tool which can provide equality of opportunity to anyone who wants it, as reflected in the writings of innovators Rheingold and Barlow about the anonymous and "non-mediated" world of surfing the net (Rheingold 1995:64; Tough 1995:39). By emphasizing equality over hierarchy, it is decidedly female-oriented. In practice, however, there is more of a focus on jockeying for position, a male ritual, than a mutual striving towards equality. For example, in Herring's study of the <Linguistics> BBS, she found that just 13 percent of active participants were female although they made up 36 percent of the membership and 50 percent of the profession (Herring et al. 1992:7). Unfortunately, other research reiterates that "women ... have felt increasingly discouraged by the discursive practices they encounter on the 'nets' " (Kaplan and Farrell 1994, quoted in Spender 1995:199).

The CRS model illuminates why some of these patterns occur. The fact that "men's messages were twice as long on average, as women's" could indicate, first, a greater comfort in public and in the use of "report talk," or, second, that "men's idea of what a contribution should look like is different"; e.g., they may be trying to give a complete argument to preclude criticism, whereas the women may be trying to minimize the amount of "air time" they are taking up (Tannen 1996). As per the CRS, 80 percent of the "women used an attenuated/personal voice as a ritual for building connection," while "the tone adopted by the men who dominated the discussion was assertive" (Tannen 1994:280).

The style adopted by men in this on-line discussion is not a *bad* thing; in fact, it can be highly effective. The issue is that when male and female styles are combined, the result can often be that female voices are muted and this ap-

pears to be particularly acute given the net environment's overall male bias. Currently, the only option available for women is to adapt to the male-style rituals. When this happens though, the whole net community loses because diversity is reduced and thus net culture narrowed. Education for all users may be one preventative solution, and we shall discuss it later. Jude Milhon is in the "adapt-or-leave camp" and tells women to "Toughen up. . . . [P]rimates act better when you stand up and give them a reason to respect you" while conceding that "We [females] always have to drive the so-called infobahn defensively" (Cross 1995:119).

Overall, then, the prevalent conversational style on the Internet follows the male syndrome. The unregulated, public environment seems to be a forum which lacks the personal dimensions which may normally diminish or inhibit male aggressiveness. Thus, regardless of the initial ideology, certain ritual styles, like assertiveness and challenging others, have become established enough in the culture that they continue to survive as linguistic strategies for getting heard.

A4. Content

Content is made up of subjects and form. As has been shown, *subjects* can resemble report talk or rapport talk, covering a range of topics from news and data to personal and health issues, or just chatting. To analyze the *form* of content requires the McLuhanesque perspective on how the medium effects the message. A number of articles have asked both "pro- and anti-net'ites" about how "human" IT could feel, and Turkle's work has addressed how IT interaction is creating new "elf-conceptions" (1995). Most suggest that there is a fundamental difference between RL and VR (virtual reality) interactions, although Turkle found much blurring of these boundaries, especially among young people. Pundits suggest that the net does not carry "the stuff of the soul" (Birkerts, in Tough 1995:38), and that it "removes the sensory complexity that is the most obvious characteristic of the lived world" (Saige 1995:66). Even pro-net'ite Kevin Kelly, who maintains that he "has experienced soul-data through silicon," does not imply that this kind of on-line experience is a regular occurrence (Tough 1995:39).

This image of net-talk as somehow primarily detached and distant, even when carrying intimate messages about private matters, relates to the concept of what happens to personal things when they are separated from the person who feels them. As Xerox's IT-researcher Makkuni puts it, "the *prana* is missing" from the net—*prana* being the Hindu term for both breath and spirit (Barlow 1995:54). Overall, then, it seems that the form of the content is most akin to the "report-talk" of the male syndrome.

Discussion

The preceding analysis of the on-line world of users has shown that the male conversational rituals tend to be more prevalent than female ones. The lines between what is "private talk" and what is "public talk" are not clean-cut, however. This, I argue, has to do with three elements of the Internet culture which make it distinctly different from other mediums of communication. In contributing to blurring the public-private dichotomy, it opens up new communications possibilities. As Kelly says, the Internet is "enhancing communication. It is allowing all kinds of new language" (Tough 1995:39). The three distinguishing elements are:

(1) *Degree of anonymity*; or, seen in a different way, lack of pre-set image;
(2) *Extent of being transitory*; or depth of relational commitment required;
(3) *Distance (physical, social, professional) from talk-partners*; and the safety it provides.

Ideally, the cumulative effect of these elements can act as a catalyst for liberating both genders from traditional notions of how they "should" communicate. For example, Turkle's work reveals the substantial insights regarding what life is like for women that is gained by males while role-playing as females and by females who discover a previously unknown confidence on-line where they do not have to face people directly (1995). That same anonymity, however, can also lead to an exaggeration of certain styles and a reduction in concern for the impact of one's words because of lack of consequences (Spender 1995:245; Turkle 1995:181-185, 218). These are issues that need to be dealt with as the medium matures, but the potential for gain is far greater and thus needs to be encouraged. The mobility and social distance offer the kind of "safety net" that should help liberate people from some of the restrictive conventions of gendered communications. In certain contexts, like MUD's, this process is underway, but it appears to need some catalytic intervention in the broader on-line world.

B. The Frontier World of Innovators

> There is a legacy of computer culture that has traditionally been dominated by images of competition, sports, and violence . . . but these are things that are subject to change.
> — Turkle 1988:41-42

> All the executives directly under Gates are male, and almost all are in their mid-thirties.
> — Seabrook 1994:53

In the frontier world of innovators,[4] there is an even greater bias towards the male-style of communication, and hence a dearth of female voices. The mini-

mal involvement of females on this end is even more critical than in the on-
line world since decisions affecting the long-term structure, accessibility and
other parameters of the IT world are being made here.The innovators' choices
shape the communications future for all of us. Groups who are not directly in-
volved in those decisions, such as females in this case, will have little leverage
to shape the medium in a way that takes their communicational preferences
into account (Spender 1995:18). This ethnographic research of *WIRED* maga-
zine and other current reports on the human-technology interface, indicates
that most of the innovators are male and that the existing females are often po-
sitioned in stereotypical ways. Innovators include the scientists developing the
technologies, business people who finance the tools and also pundits and jour-
nalists who spread the word to the public. It is contended that creating a me-
dium based on a one-sided conversational style makes "it difficult to think
outside the categories and grooves made by men" (Penelope 1990:xiv). If we
allow the net's development to be limited to a single style now, we also jeop-
ardize the effectiveness of the medium in the future (Spender 1995:xxv, 21);
as McLuhan wrote, "We shape our tools and thereafter our tools shape us"
(Tough 1995:36).

B1. Purpose

There are two main currents of thought among innovators on the purpose of
creating the Internet and its related areas. Simply stated, these two viewpoints
emphasize either human progress or profit. Both reflect the fundamentals of
the male syndrome. The viewpoints are not mutually exclusive, but propo-
nents of the infobahn tend to focus on its progressive potential in the areas of
communication, community building and efficiency, citing profit almost as a
"bonus" to the real reward of pulling society ahead. For example, Kevin
Kelly, a *WIRED* senior editor has alluded to both goals in different articles. In
favour of the human progress view he states that "what's underwriting this
[Internet] is the thing that sets human beings apart ... a hardwired dissatis-
faction with our ecosystem ... and the desire to adapt it to us" (Tough
1995:37), and then, keeping the practicality of profit in view, he reminds us
that "this digital revolution was going to be mainly driven by commercial in-
terests" (Glenn 1995:81). The Internet's critics, in contrast, charge that the in-
novators privilege profit above the rhetoric of humanitarian ideals, calling it
the "pseudo-revolution" and the "new information capitalism" (Glenn
1995:81; Tough 1995:37). In fact, there is validity in both stated goals. Inno-
vators have definitely created a fertile environment for human progress in this
new communications medium which presents much material for creative
minds to discuss, congregate and learn. It has, for example, brought people to-
gether who could not otherwise have connected so simply, such as fans, via
<tragicallyhip@hook-up.ca>, or activists, via <alt.aboriginal.canada.land>.

On the other side, the innovators have focussed, and must focus, on profitability given the extraordinary expense of creating a global broadband network. Understanding business's IT strategies and culture are thus vital, since "commerce is the engine of technological change, and those companies will have a lot more effect on how technology is implemented.. and how it will affect our lives" (Kline, in Glenn 1995:80).

Both of these goals are grounded in a primarily male world view in that they are focussed on the public realm (social progress and economic gain), and assume that the world is hierarchical and that therefore one must do better than the next person, country or company (socially or economically).The humanitarian rhetoric that often accompanies pronouncements on the IT world suggest the female syndrome; however, a closer look reveals that the specific *area* of progress is rather incidental. It is the achieving of progress itself, or at least change, that is really what drives the innovators. This insight is echoed in a report on the time and money being spent on creating "video-on-demand" technology; "Never before has so much investment and hype and ingenuity gone into such a trivial task as replacing the video store" (Schwartz 1994:60).

Overall, then, the innovators' purpose in developing a broadband network is produced by and reproduces the male world view as outlined in the CRS model. This is hardly surprising given its historical, military raison d'être. The hierarchical culture from which it sprang inevitably affected the initial on-line communication style, showing how language can be a site of the reproduction of power relations. The contingency of the prevailing conversational style is thus revealed as the result of a specific set of historical circumstances, not an innate superiority.

B2. Environment

Ethnographic Facts:

1. ARPANET, the precursor to the Internet, was originally conceived to support "military command and control" (Hafner 1994:154), a traditionally male domain.
2. Twenty-seven years ago ARPANET was developed; all 19 Inventors and Innovators were male (ibid.:153).
3. Only 2 of 27 *WIRED* cover pages of industry innovators features a female (Vol. 2.02-4.04, S. 1.01).
4. Approximately 85 percent of the innovators reading *WIRED* are male professionals (Hyland 1994:12).

In a randomly chosen issue of *WIRED*:

5. Less than 10 percent of their innovative writers were female.
6. Approximately 4 percent of content was about female innovators.
7. The male:female ratio in the adverisements averaged 5:1.

8. A linguistic analysis of the typical content of 75 full-page advertisements revealed that 18 used military or sport analogies or violent language, 24 used aggressive or sarcastic language and only 8 used supportive/attenuated (female) language.

This brief content analysis is a further indication that the cultural environment of the frontier world has been built and perpetuated by males. The resultant conversational environment closely mirrors the male syndrome. Again this intimates how the historical roots of the net enact a dominant culture to which newcomers in the last decade have acquiesced. While women have established themselves and their style of working in many fields, they remain significantly under-represented in computer science professions (Kantrowitz 1994:51), thereby limiting their ability to affect the sociolinguistic norms in the profession.

The current frontier culture and its conversational paradigms are being negotiated in the interface between the world of science and engineering and the world of business and government. Various studies have concluded that in both of these worlds the male conversational style and world view prevail (Tannen 1993a, 1994). Thus the historical bias is reproduced by innovators socialized in the ways of these worlds. White argues that some people exploit this insight about hierarchy; "*WIRED* works ... by tweaking its readers' anxieties, constantly reminding them that they are hopelessly behind the times on the latest developments in technology and underground hacker culture" (1995:77). *WIRED*'s unrivalled success in appealing to the innovators who make up its readership is evidence that they have hit on the right chords. This strategy works by relying on the male focus on hierarchy and status; the innovators are concerned with how "tech-savvy" they are *relative to* others in the hierarchy.

The frontier environment also fosters the aggressive linguistic style that is typical of males who have grown up in environments where "ritual opposition and fighting are common" (Tannen 1990:58). These rituals are often used to improve one's status in the hierarchy but can also serve to improve the quality of the ideas through debate. This works well for conversations and interactions between two people/groups using the same style, but creates misunderstanding and stress when someone using the female syndrome is involved because she is not as conversant with this different set of conversational "rules" as she is with the female ones (ibid.:23). Oppositional language ritual is common among top innovators like Gates, who defends the aggressiveness of the frontier environment: "To hold war councils and to design strategies with the explicit aim of crushing an opponent—this is very American. You know, Mother Teresa is not going to build the broadband network of the future" (Seabrook 1994:57). Those who do not share the ethos encapsulated in this sentence may feel handicapped in cyberspace.

The innovators' periodical, *WIRED*, clearly manifests the prevalent male conversational paradigm in its content. The language used in the cover story

titles of my sample evidence the cultural bias for rough play that is intimated by Turkle in the opening quotation in this section: "John Malone: Infobahn Warrior"; "Hacker Showdown: Rival Phreaker Gang Called John Lee a 'Nigger' "; "The Cable Slayer Bell Atlantic CEO Ray Smith Explains Why Cable Is Dead"; "Bad-boy Evolutionist Richard Dawkins: Selfish Genes and Hot Memes"; "Guerrillas in the Myst"; "Viacom Doesn't Suck!"; "Is Advertising Finally Dead?"; and so on. While the titles are intended as satirical, one may assume that their target audience must find these "paeans to macho individualism" (White 1995:78), which are also to be found in advertisements, quite enticing, given the periodical's commercial success. Interestingly, one of the few covers without this language is one featuring a female: "Laurie Anderson Reinvents Herself, Again."

The satire in these titles works by relying on a certain tacit cultural understanding between the target readers and the editors in order to "produce effects" that cannot be as effectively conveyed in literal language (Rorty 1989: 18). In discussing the philosopher Davidson's perspective, Rorty explains that these kinds of metaphors are like innovative language tools, expressing emerging concepts or feelings not yet expressible in the existing vocabulary (ibid.:18-19). That such a florescence of language is occurring in this field is exciting, and certainly *WIRED* should not be admonished for playing with ways of communicating these emerging meanings to their public. An independent examiner, however, must ask what "effects" exactly are being produced by innovators in this dominant, frontier discourse? And what role does this have in creating cultural barriers to sub-dominant groups like women who operate with other communication paradigms or syndromes? Finally, is this an issue? If a female can find the voices of *WIRED* witty and informative, perhaps she should communicate her ideas in that dominant, discursive form if she wants to be heard. As Fraser says, however, to achieve optimal participation in a public sphere, one must be "able to speak in one's own voice" (1994: 86). As long as the popular myth that this environment only has room for one communication style goes unchallenged, subaltern groups will continue to have to expend unnecessary time and energy trying to have their own voice heard (Turkle 1995:54, 59). "Techno-savvy" artist Brian Eno describes an isomorphic barrier for artists respecting the different "ways of working" required in graphic design: "with all computer-based things, the technology filters out most of the interesting people, and forces them to wait" (Kelly 1995a:204).

B3. Style

> Language consists of whatever it is one has to
> know or believe, in order to communicate in a
> manner acceptable to its members.
>   — Goodenough (1964:36)

Goodenough's conception of language, while not the most common, is particularly relevant for an analysis of the language culture of the innovators since interaction in the frontier world is heavily biased towards purely linguistic forms like the net and periodicals. In understanding the context of communication here, it is critical to recognize that, as in the on-line world, many of the innovators have never, and will never, have the social cushioning of real-life contact with most of the other innovators. Without eye contact, body language, meeting place and other mediating, para-linguistic cues, the innovators' words bear full responsibility for communication. The archetypal male conversational style used by the innovators, combines aggressive, competitive language, hyperbole, report talk and systematic, linear logic (Spender 1995; Turkle 1995). First, I discuss Turkle's research on the perspective of the scientific community, and then present evidence from periodical articles about innovators to explore the business perspective of the "frontier." For the latter, I have analyzed the conversational rituals used in eight panel discussions and interviews.[5]

The research and development behind the frontier world exists within the larger arena of Western-based science. This arena has supported a rigid monoculture for years, and it is one that is based on male communication styles, in part because women were excluded from participating in it (Spender 1995:164-166). Here, the dominant culture has historically privileged reason, linear logic and systematic processes over intuitive, organic or emergent ways of knowing. The first, or "hard," approach has led to many important developments, but by using it to the exclusion of other styles the field has limited its pool of problem-solving options, and hence its productivity (Turkle 1995:54). Turkle's historical analysis of the US Artificial Intelligence (AI) and programming culture shows how the soft mastery or "*bricolage*" style was viewed as "unscientific, undisciplined, feminine, and lacking power" and thus not acceptable through the 1970s and 1980s (ibid.:56). This caused particular difficulty for women as they tend to be attracted to, and good at, this bricolage approach, perhaps because of their socialization to value "negotiation, compromise, give and take" (ibid.).

For people whose optimal style was bricolage, the cultural bias meant that they had to "fake it" by pretending to solve problems with the "hard approach" while actually practising the soft mastery style (ibid.:54). Her ethnographic work among female computer science students at MIT showed that despite their classroom success, this sense of being "a different person" left them feeling isolated and alienated from the dominant computer culture and lowered their self-esteem, often causing them to switch out (ibid.). Beyond the individual psychological effects is the broader issue of the narrowing of computer culture overall as discussed above.

Turning to the business side of the frontier world, we see that it also falls under the male-syndrome but for other reasons. In order to illustrate this, I must first expand on how the CRS model differentiates between male and female conversational goals and strategies. As discussed earlier, male goals tend to be status-focussed, while female goals are connection-focussed. Their "relational" strategies differ as well: males are "more likely to be confrontational by arguing, issuing commands"; females are "more likely to avoid confrontation by agreeing, supporting, and making suggestions rather than commands" (Tannen 1994:236). Again, both styles have merit but the research shows that in *mixed-gender* conversations, the male-style dominates. James and Clarke, for example, found that males tend to interrupt to insert their own information, whereas females use overlaps to insert supportive phrases (ibid.:232-233). The following anecdote of Gates' style is characteristic of the conversational style of the business side of the frontier world.

> Gates is famously confrontational. If he strongly disagrees with what you're saying, he is in the habit of blurting out, *"That's the stupidest fucking thing I've ever heard!"* . . . What you're supposed to do in a situation like this, as in encounters with grizzly bears, is stand your ground. (Seabrook 1994:53)

Like Gates, the predominantly male population exhibits precisely the kind of direct, oppositional rituals identified as part of the male syndrome. In my ethnographic analysis of eight panel discussions and interviews, an obvious male paradigm was evident, and the overall impression was that the men were more self-assured and competent about their abilities than the women. The males' assertive and at times confrontational style made mere matters of opinion come across as "truths," along with the image of confidence perpetrated by the regular issuing and deflecting of challenges. In contrast, when females were interviewed, the style and language of the pieces were more subdued, and the interviewees used humble, allusive and attenuated language in making their points, as will be shown below. Again, the issue is not which style is better, but rather the recognition that in mixed-style interactions one style tends to dominate, resulting in a net loss of ideas.

A review of some specific conversational examples will help to demonstrate the process described above. Since these articles have been edited, we will not find as many clues as in a free-flow dialogue; however, there are still recognizable patterns. One all-male panel discussion gave leading thinkers on both the pro- and anti-technology sides the chance to discuss the positive and negative features of the shift towards the Internet as the next major communications medium (Tough 1995:35-46). The *discussion* quickly became a *debate* with all participants questioning the others' ideas and issuing challenges such as the following:

Is there something wrong with experimenting?

Sven, there's this idea in your book that reading is the highest way in which the soul can discover and deepen its own nature. But there is nothing in on-line experience that excludes that.

It's not the same at all . . . that's a very limited way of looking at it

The screen is a linguistic leveling device.

Here you are wrong. If you hung out on-line, you'd find out that the language is not in fact flattening, it's flourishing.

I wish some of this "marvelous" prose could be downloaded and shown to me. (Ibid.)

In addition, these men used put-downs and sarcasm as ways of deflecting challenges and diminishing the credibility of the people on the opposing side. Here are some examples:

You know, I'm beginning to realize that the principal difference between you and me, Mark, is that I take a considerably longer view of things.

You think that somehow a book is the height of human achievement. It is not.

Instead of dealing with those issues [in life] he was side-stepping them.

I think we've diverged here from the central point.

You can be just as conservative as you want to be.

My advice would be to open your mind.

While the males on this panel probably felt comfortable with the discursive style, difficulty would arise if a speaker deploying a female style were trying to contribute to the discussion.

A different pattern emerges in the handful of articles about female innovators in *WIRED*. One conspicuous pattern is the women's relatively modest attitude toward their work; their language conveys a sense that while they see their work as important, they often downplay its closeness to "the truth" or a vital solution. For example, Pattie Maes says of her approach to Artificial Intelligence (AI) agents: "We have a less ambitious target [than earlier AI innovators]. We don't try to build agents that can do everything or are omniscient"(Berkun 1995:117). Women also play down their expertise, a trait of the female syndrome; "I don't think it's [AI] that hard. I think people have taken the wrong approach" (ibid.) or "I'm always embarrassed to display my ignorance, even though I do it time and time again . . ." (Snider 1994:76). And this last comment comes from Jenny Holzer, a world-renowned pioneer artist of multidisciplinary technique! One interviewer resorts to inserting paragraphs to explain how great Sueann Ambron's work really is, since Ambron's attenuated quotations alone are so understated that they would presumably be perceived as innocuous or bland amidst the other racier articles (Garner 1994:52-55).

Both conversational styles clearly exist in the science and business areas of the frontier world, but the male culture appears to prevail, often to the detri-

ment of subaltern voices like females. The styles are not absolute and, as with many aspects of the IT world, hybridity is not uncommon.

B4. Content

What is it that the innovators talk about? In a field that spans topics from cyberspace privacy rights to universal access, AI agents and fractal art development, there are obviously going to be subjects that are more controversial, intimate or competitive than others. With regard to the power that a framework has over its subjects, Fries wrote: "The question itself is part of the frame in which the answer as an utterance operates" (1952, in Pike 1964:55). Rephrased, this concept aptly describes the situation of content on the innovators' frontier world; the industry itself is part of the frame in which the content, as an utterance operates.

First, as with much of the on-line world, the content of the frontier world transpires in the public sphere and consists of mostly report-talk-type content. Innovators' communications consist primarily of variations of their visions about the future direction of this field, their view of the "facts" of the frontier world, and, in all of this, their attempts to be more knowledgeable than others. Examples include articles on the status and future of advertising or cable, the moral and economic issues for universal service, cyber-crime deterrence, privacy and the Clipper chip and other such topics that are related to the male ritual where "talk is for information" (Tannen 1990:81). Innovators do use cyberspace for some private, rapport-talk content (Kelly, in Tough 1995:43), but this is far less common.

Secondly, how we perceive the content is often affected by how the innovator in question is positioned. The eight articles analyzed which present female innovators are framed by language that reflects traditionally female archetypes. They are still cited as intelligent experts, but they are often described as having just "fallen into" the work and having been helped significantly by others. Of the six major articles on women in my sample, one was depicted as a mom in the kitchen (Garner 1994), two as artists with a focus on their creativity rather than their technical prowess (McCorduck 1994, Snider 1994), two as using AI to "help" people (Berkun 1995, Whalen 1995) and the last as a tough socialist lesbian (one of few references to personal life) (Cross 1995). The articles eventually expand on the technical achievement and visionary skill of the women, but the initial positioning of them as "accidental heroes" with typically female skills has the effect of diminishing their stature next to the more boisterous confidence usually portrayed in characterizations of male innovators.

Discussion and Conclusion

The foregoing analysis has demonstrated the validity of the hypothesis that the dearth of female voices and actors in the IT field is a direct result of gender differences in conversational style. The analysis also revealed that the existing pattern is historically based and contingent, resting on existing power structures. Using the CRS model as a heuristic to the ethnographic evidence, it has been shown that the style of the male syndrome is predominant and that this has an exclusionary effect on other voices such as those of females. It should be clear from the analysis that this exclusion is detrimental not simply for the disadvantaged groups, but for the quality of communication among all users of the medium. Rorty's articulation of the contingency of language provides us with a philosophical foothold from which to critique the existing patterns and recommend possible action which could resolve the issues identified. There are four broad areas that could contribute to the ultimate goal of improving the IT culture of communication and improve its accessibility for diverse linguistic styles.

The first strategy builds on Fraser's discussion of how to create a role for subaltern groups in a public sphere. It makes sense to accept that there will likely always be a dominant culture and discursive style in any public sphere, which in this case is what Spender calls the "malestream" style. This leaves us to formulate an objective and plan for female-style operators by viewing them as a "subaltern counterpublic," as Fraser calls them. Rather than see this as a victimized status, we could take a constructive approach to this position and use it to develop discussion spaces wherein we work on a full range of issues in the female-oriented conversational style so that people can be heard in their own voice. This would likely involve some formal intervention and awareness-raising to orchestrate the existing grass-roots groups who are already promoting such discussion, and the necessarily more extensive organized fora. Once an issue has been worked over in this forum, the alternate-style speakers should be in a better position to shift into the next phase which involves interaction with actors in the dominant stream of discourse. This should be an ongoing dialectic which will allow both groups to learn and grow.

Having established ways of participating in one's own voice, it would also be beneficial to raise awareness of the liberating notion of multiple-identities raised by Turkle and based on Jungian principles (1995:59). This theory suggests that it is both healthy and educational to have and to experiment with different aspects of "self," all of which are parts of the individual and not necessarily incongruous. If people can have this theory in mind when they are talking in the IT world, they should be less resistant to working with the alternative style when needed and less frustrated with the fact that they, whether male or female, may not always be able to operate in their preferred style.

A third solution, which applies to all the proposals, is to increase the preva-
lence of educational discourse on the issues discussed here. As Fraser ex-
plains, by showing users that their forum is not culture-neutral, one opens the
door for discussing the issues of subaltern groups like females in the public
sphere where they were previously considered "private" concerns (1994:88).
Educating users about the benefits for all of accepting diversity, be it in gen-
dered linguistic styles, soft and hard mastery or world views, will give all par-
ticipants the information they need to make informed decisions each time they
contribute to IT communications. This education could be provided in school
courses, but could also feasibly be disseminated by service-providers and the
boards of various usegroups to new users/members

Should one attempt to "integrate personal responsibility into the virtual
world," one is then caught between Hobbesian and Rousseauesque views of
human behaviour. If one takes a Hobbesian view, it is tempting to recommend
surveillance techniques as ways of intimidating people into more responsible
behaviour. One example would be allowing open access to the archives of use-
groups and MUD's to journalists, reporters, even employers who could then
review a person's conduct there. Such proposals, however, would lead to a sig-
nificant reduction in the creative, experimental potential of communications
on-line and would probably drastically alter the way the medium is currently
being used. Not to mention that hackers would inevitably find ways around
this. Further, it does not move us towards the real goal of improving IT cul-
ture, but rather just constrains it from getting worse.

The sociolinguistic perspective taken here, using the CRS model, may enable
females to understand why they may initially be less comfortable in the IT
world, but also to see how to deal with this issue. Both females and males can use
this model to understand their own styles and the impact that their rituals have on
a conversation and on how they are perceived. Establishing social policies and
grass-roots efforts to accomplish the solutions listed above will result in a better
communication tool for all users, and will increase the accessibility of the field
to female-style communicators. If we think of the Internet and its related
world of information technology as cultural products, we should consider
them contingent, emergent and permanently unfinished. With this perspective,
we avoid focussing on how its current form inhibits females, and instead en-
deavour to empower them so that they may be involved in this dynamic field
and may use their own conversational rituals to enhance it for everyone.

Notes

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the editorial work of Dr. Andrew Lyons and Dr. Harriet Lyons.

2. Causal explanations for this difference in female and male world views are complex and still being debated. An excellent treatment of the issues is found in Ortner and Whitehead 1981.

3. "Surf" is a colloquialism used to describe the variety of actions and tasks one can perform while exploring the on-line Internet environment including electronic mail (e-mail), posting/ sending messages to electronic "conferences" or bulletin board services and searching for information (useful or random) on a subject or person.

4. Innovators are distinct from Inventors in that the former are concerned with the successful commercial *applications* of the inventions of the latter.

5. The articles on men and women are as follows: Berkun 1995; Glenn 1995; Kelly 1995a, 1995b; McCorduck 1994; Seabrook 1994; Snider 1994; Tough 1995.

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