> certainly read the recommendation letters more carefully than they'd proofread their own request. The other department was the one in which I was then a graduate student.

- When I received an award from the MIT EECS department for the first version of this report, the award letter was addressed to "Mr. Ellen Spertus".

These examples show that some people expect scientists and science writers to be men to such a great degree that they blatantly misaddress female scientists.

Perhaps the most unusual story in this category is that of a woman who was elected to the National Academy of Sciences in the late seventies:

> The scroll that [geneticist] Vivian [Davidson] received from the Academy had her name engraved on it, and then went on to announce that Vivian Davidson was being honored for 'his' accomplishments, and that 'he' was now entitled, and 'he' could, and 'he' should. She was so amazed at all the 'he's that she sent a letter to the Academy inquiring whether the source of the problem might be that the engraver was British and had taken Vivian for a man's name, or was it perhaps that the printing process was lagging behind the process of election of women to the Academy. The letter she received back from the Academy secretary (a man) was an angry one informing her that she was the first person ever to complain, the scroll was an honor, its plate had been struck in 1868 by Abraham Lincoln, and it had a historic value the Academy was not about to tamper with.
>
> At the next Academy meeting in Washington, Vivian raised the matter of the scroll's wording with some of the other women scientists. Each one said she had never noticed the use of 'he' instead of 'she' on the scroll. 'That's probably true,' Vivian said sadly. 'They're so grateful to be allowed into the club, they wouldn't dream of making waves. In all likelihood they *haven't* noticed' [Gornick 1990, page 115].

Also of interest are the experiences of a male professor whose first name is also a woman's name:

> I think having that name has made me more sympathetic to problems women face, as in e-mail it is almost always assumed that I am a women. That means I get a rash of mash notes from the Math/CS students when they first learn e-mail and pick my name out of the user list.... It also means that I get a great response every time I post a computer problem to a usenet group. Since I haven't done the control condition where I have a male's name, I'll never know for sure, but the tone of so many responses are so solicitous that I have

to wonder (even followups to see if everything worked out okay). The worst case was in a scientific exchange through the mail where the other scientist was being exceedlingly patronizing. It was only when he came to [X] for a convention and tacked on his room and phone number and invited me for a drink that it dawned on me that he thought he was corresponding with a woman. For me I can laugh about these occurrences (as well as the female roommates I routinely get assigned at meetings), but it would certainly be different if it never went away.

3.2 Masculine Terms as Default

3.2.1 The Inequality of Masculine and Feminine Terms

Because male and female pronouns have different connotations, an individual is immediately categorized into a set and assumed to have certain characteristics as soon as their sex is known. The English language forces us to divide people by sex, and, because people have different assumptions depending on whether someone is male or female, preconceptions are applied to them. Were it not for these differences, asking someone's sex would have no greater import than asking how to properly pronounce a person's name, and suggesting that females need female role models would make no more sense than arguing that green-eyed people need green-eyed role models. While there is no reason that specifying the sex of an individual is necessarily bad, it is in a culture where people associate so many characteristics with sex.

When masculine and feminine versions of the same word exist, the connotations often greatly differ:

- A teacher writes of trying to describe one of her brightest students:

  > I found myself saying 'She's really a prince.' Appalled as I was at my own pro-masculine description, I just couldn't say that she was a *princess* because princess connotes someone who is fussy and spoiled and accustomed to living in the lap of luxury [Miller et al 1980, page 58].

- A female computer science student told me:

  > When I was at [X], I derived a good deal of satisfaction from watching my male friends describe my performance in [electrical engineering courses] — 'She's a .....goddess?'

Additionally, "woman" and "man" are not symmetrical:

- As observed in [Hofstadter 1986, page 155]:

> If I write, 'In the nineteenth century, the kings of nonsense were Edward Lear and Lewis Carroll', people will with no trouble get the message that those two men were the best of all nonsense writers at that time. But now consider what happens if I write, 'The queen of twentieth-century nonsense is Gertrude Stein'. The implication is unequivocal: Gertrude Stein is, among *female* writers of nonsense, the best. It leaves completely open her ranking relative to males. She might be way down the list! Now isn't this preposterous? Why is our language so asymmetric? This is hardly chivalry — it is utter condescension.

- One female computer science professor told me:

  > I got a recommendation from a college professor stating that I was 'one of the top female students' in his class (100 students, 10 women, the women were not all at the top of the class, and I *was*).... I'm sure he meant it as a compliment.

- Annie Edson Taylor is described as "the first *person* to go over Niagara Falls in a barrel", while Neil Armstrong is "the first *man* to walk on the moon".

Because masculine and feminine terms have such different connotations, the distinctions make females separate and *unequal.*

3.2.2 Intentional Use of Masculine Terms

Some men consider "being a man" to be high praise even to a woman, and expect her to be flattered at being called one. Here are some examples of women's reactions to being called a man, two from biographies (not of computer scientists) and one in response to my call for data:

- Henry Hazlitt said to Ayn [Rand] one day: 'I just talked with Lu Mises a few days ago. He called you "the most courageous man in America."' 'Did he say *man*?' asked Ayn. 'Yes,' he replied. Ayn was delighted.[3]

- [A] story — which as far as I know, is all it was, — once went the rounds of Israel to the effect that Ben-Gurion described me [Golda Meir] as the 'only man' in his cabinet. What amused me about it was that obviously he (or whoever invented the story) thought that this was the greatest possible compliment that could be paid to a woman. I very much doubt that any man would have been flattered if I had said about him that he was the only woman in the government![4]

[3]Branden, Barbara. *The Passion of Ayn Rand.* New York: Doubleday & Company, Inc., 1986, page 189.

[4]Meir, Golda. *My Life*, New York: Dell Publishing Co., 1976, page 108.

- [This incident] was ... entertaining. I and another undergraduate were head teaching fellows for a computer course and we were working our butts off. He had one final that he was pretty worried about, so I greeted him afterwards with a six pack. His remark, '[Jane], you're such a guy.' — A female graduate student.

In all cases, the original speaker thought he was giving the woman a high compliment. What stands out from these quotes is the different reactions: glee in one case, indignation and amusement in the others. Accepting such compliments is psychologically dangerous because it entails a woman's looking down upon her own sex. For example, Ayn Rand, the only female above to be proud of being "a man", is known for her misogyny, an unhealthy trait for a woman. The same phenomenon occurs among some women in male-dominated careers. One female computer science graduate student used the term "male-identified" to describe women who scorn other women and who aspire to be "one of the guys". Some examples of such statements are:

- A male computer professional wrote:

  > One way [bias is expressed] is the attitude of women themselves. A female programmer here found out that the company next door, run by women, installs PC systems in offices. Her comment was, 'That's pretty good for a couple of women.' Her words, not mine.

- A female computer science student, when one of two female students in a high school advanced placement physics class, said: "I judge how hard a class is by how few females are in it."

While the above comments are shocking, they should be no less shocking than a man's expecting a woman to be flattered by being called a man. In the context of a society which praises women for being "like a man," it is no wonder some women accept the role.[5] [Persing 1978] contains many examples of masculine terms in everyday use.

3.2.3 Unintentional Use of Masculine Terms

Other terms exist besides "being a man" and "one of the guys". A male high school teacher who recognized the sexism in "dividing the men from the boys," told the class that he intentionally replaced the terms with "wimps" and "studs," a usage he did not consider to have gender implications. Indeed, "stud" is now a popular way to compliment someone from work well done. What's ironic is that "stud" is an extremely male word. Its primary definition is a male animal used

[5] I have been able to find nothing in the literature about male identification of women in science, although the phenomenon is widespread. Most women seem to outgrow it and feel ashamed of their former misogyny, but the subject merits deeper study.

for breeding. It is absurd that some consider it a gender-free way to express admiration.[6] When a female professor expressed skepticism that anyone could think "stud" a neutral term, it was called to her attention that a few months earlier, she had told a roomful of female students that they would have to "gird their loins" and get to work. This also derives from male terms.

3.3 Gender-Neutral English

One area currently under debate is gender-neutral English. Above, I discussed the issue of how to discuss a specific unknown person, but it is another question how to discuss a generic person, i.e. with "he" or "he or she", etc. Related to this is whether to use terms like "chairman" and "man-hours" when one does not wish to exclude females.

3.3.1 Background

The most convincing argument that terms like "he" and "man" are not truly neutral comes not from abstract arguments but from empirical research:

> In 1972, two sociologists at Drake University, Joseph Schneider and Sally Hacker, decided to test the hypothesis that *man* is generally understood to embrace *woman*. Some three hundred college students were asked to select from magazines and newspapers a variety of pictures that would appropriately illustrate the different chapters of a sociology textbook being prepared for publication. Half the students were assigned chapter headings like "Social Man", "Industrial Man", and "Political Man". The other half was given different but corresponding headings like "Society", "Industrial Life", and "Political Behavior". Analysis of the pictures selected revealed that in the minds of students of both sexes use of the word *man* evoked, to a statistically significant degree, images of males only — filtering out recognition of women's participation in these major areas of life — whereas the corresponding headings without *man* evoked images of both males and females. In some instances the differences reached magnitudes of 30 to 40 per cent. The authors concluded, 'This is rather convincing evidence that when you use the word *man* generically, people do tend to think male, and tend not to think female ([Miller et al 1980, pages 19–20]).

Additionally, "a number of studies have shown that young people are influenced in their job preferences and their willingness to apply for advertised

[6] There is another whole issue as to what the corresponding female term would be and why none are flattering — i.e. one based on sexual prowess. Brood sow? Whore? Nymphomaniac? This is too far off the subject to explore here.

jobs by gender bias in the wording of the advertisements" ([Bem et al 1973] in [Frank et al 1983, page 90]).

Several sentences can be found that demonstrate that "man" is often unintentionally used to exclude women:

> David Moser once .... observed that in books you will find many sentences in this vein: 'Man has traditionally been a hunter, and he has kept his females close to the hearth, where they could tend his children.'.... So much for the sexual neutrality of the generic 'man'. I began to look for such anomalies, and soon ran across the following gem in a book on sexuality: 'It is unknown in what way Man used to make love, when he was a primitive savage millions of years ago' [Hofstadter 1986, page 145].

Consider also the 10^{th} commandment.[7]

3.3.2 Examples of Usage in Transition

In an approximately one month period of observation, I was able to find many examples of people waffling on the issues of gender nonspecific language at and around the MIT Artificial Intelligence (AI) Lab. I consider ambivalence more revealing than conforming to the old ways, because it shows that many individuals are trying to grapple with the issues but are unable to do so in a consistent manner. These examples are presented not because the behavior was egregious but to show the conflict within individuals:

- A conference was held in one of the most male-dominated areas of computer science. Nevertheless, a few women played prominent technical roles. Relevant incidents were:
  1. A male attendee asked a female speaker: "How many [pause] engineer-years did this take?" His pause was not sarcastic; he evidently decided mid-sentence to use a neutral term instead of "man-years". One guesses he would have used the latter term if asking the question of a male.
  2. A female was introduced as a "chairperson" but, like the other (male) chairpeople, wore a ribbon that said "chairman".
- During a talk, a professor showed a slide which said "he/she" for the generic computer architect, but said "he" when speaking.
- An announcement was sent to members of the AI Lab, containing "I am looking for a few brave men (or women) willing to help..."

[7] It is not entirely fair to put all the blame on the word "man". It is also easy to find sentences such as "People won't give up power. They'll give up anything else first — money, home, wife, children — but not power" [Miller et al 1980, pages 33-34].

- In a recent issue of a journal, a book reviewer referred to the prototypical researcher as "he", parenthetically adding "typically he is a he".[8]

As mentioned above, the trait all these examples share is ambivalence. Many people use neither the old way nor the new way but some mixture. On such melanges, Douglas Hofstadter writes:

> This is not progress, in my opinion. In fact, in some ways, it is retrograde motion, and damages the cause of nonsexist language. The problem is that these people are simultaneously showing that they recognize that "he" is *not* truly generic and yet continuing to use it as if it were. They are thereby, at one and the same time, increasing other people's recognition of the sham of considering "he" as a generic, and yet reinforcing the old convention of using it anyway. It's a bad bind [Hofstadter 1986, page 150].

3.3.3 Reversed-Expectation Writing

Several writers, in order to argue for non-sexist writing, have written essays with other biases than the traditional male/female ones, and the results are (intentionally) shocking. In this section, I describe three such forays.

- Douglas Hofstadter has written an essay ostensibly arguing for traditional usages but from an imaginary standpoint with different terms for whites and blacks analogous to those for men and women in our culture. For instance, "white" is used for "whites and blacks" (as "men" is used for "men and women"), and blacks have different honorifics and pronouns. Here is an excerpt of his (long) essay:

  > Most of the clamor, as you certainly know by now, revolves around the age-old usage of the noun "white" and words built from it, such as *chairwhite*, *mailwhite*,... The negrists claim that using the word "white", either on its own or as a component, to talk about *all* the members of the human species is somehow degrading to blacks and reinforces racism. Therefore the libbers propose that we substitute "person" everywhere where "white" now occurs. Sensitive speakers of our secretary tongue of course find this preposterous. There is great beauty to a phrase such as "All whites are created equal." Our forebosses who framed the Declaration of Independence well understood the poetry of our language. Think how ugly it would be to say "All persons are created equal", or "All whites and blacks are created equal".... [Hofstadter 1986, page 159]

[8] Mackworth, Alan K. "Book Reviews and Response". *Artificial Intelligence*, **38** (1989) 239–251.

- Bobbye Sorrels Persing, in [Persing 1978], has written a powerful essay of an office scene with the male and female roles reversed. Not only are male workers called "boy" and "sir chairwoman" (corresponding to "girl" and "madame chairman"), they are treated and talked about as men stereotypically treat women who work for them [Persing 1978, pages 1–5].
- A recent example exists in the computer world. In *MacTech Quarterly* (now *MacTech Journal*), "she" is used instead of "he" as the generic pronoun. An editorial justified the policy and announced that it would be used henceforth by the magazine [MTQ 1989A].

Further examples of reversing expectations appear in Section 5.1.3.

3.3.4 Reactions to Nontraditional Language

It is telling to look at the reaction to *MacTech Quarterly*'s policy, printed in the issue following the editorial announcement [MTQ 1989B]. A follow-up article wrote that responses poured in, "impassioned on both sides". Some readers canceled their subscriptions, while others pledged to buy as much as possible from the parent organization. One of the most interesting positive letters was from a female novice programmer who wrote:

> [A]s a woman who is a bit intimidated by her love of math and computers, I deeply appreciate being able to open the MacTech Quarterly and have the articles addressed to me, personally, a woman.

Negative letters condemned the (male) editor for abusing his editorial position. One particularly angry writer repeatedly called into question the editor's manhood:

> Ms. Hines,
>
> You seem to be suffering from severe gender confusion. As a private matter, that's fine. Everyone has their foibles. But when it becomes editorial policy it's offensive in the extreme....
>
> When I feel like listening to emasculated male apologists I can always turn on Donahue. He's easy to turn off and I don't have to pay for broadcasting his silly ideas. So unless you will be adopting a more well-thought-out policy, cancel my subscription and send my refund. And I will suggest MTQ adopt the subtitle, "A Magazine for High Tech Women and Eunuchs".
>
> If you've got even a dim memory of when you had balls, you'll print this.

(Note too the use of "balls", i.e. something women do not possess, as a metaphor for fortitude.) The letter illustrates that a man is sometimes considered to be a sell-out for taking a feminist position. (While some men praised the editor for his decision, apparently all of the harshest critics were male.) In addition to the above *ad hominem* letter, there were more carefully-reasoned objections:

1. Because of its long usage as the neutral pronoun, the sex of "he" is much less blatant than that of "she".

2. Using the less grammatical "they" for the singular neutral pronoun is a reasonable choice, particularly as it appears to have been used centuries ago for this purpose.[9]

3. Most of the readers of the magazine are male.

Even in the most carefully-reasoned negative letter, however, the writer expressed his intention not to renew his subscription.[10] This is clearly a point on which people have strong opinions.

In response to my call for information, a man wrote:

> I'm the co-author of the [X] Guide;... One of the decisions that I made was to remove all the sexist language, e.g. "when the user types *his* command" sort of stuff. It wasn't that hard to do, and I figured that it was appropriate.
>
> A couple of the reviewers ... noticed this — I suppose my prose wasn't quite as seamless as I thought it was — and commented on it. They both suggested putting the male gender pronouns back in since "most of the users are men, anyway". I didn't take this suggestion; but what struck me was that these folks actually noticed the *lack* of male pronouns.

3.3.5 Summary

Many people are not sure whether to use traditional or neutral terms. The large number of mixed examples implies that people do not just disagree with each other, but that individuals are unsure how best to express themselves. Additionally, many defenders of male terms do not appeal to tradition or claim that the term is neutral, but they say that the generic person would probably be male. Thus, an empirical rather than theoretical criterion is used, suggesting that the pronoun would change if enough females entered the computer world.

3.4 Summary

The language used in the academic and industrial world, as in much of society, is biased toward male terms. A girl must have a strong vision to see herself in a career considered masculine, and a woman must have strong character not to

[9] See, for example, [Frank et al 1983, page 88] or [Miller et al 1980, pages 121–123].

[10] Of course, these observations are based on the letters the editor chose to print.

be affected by all the masculine assumptions about her. Still, there are some things to be thankful for. As Grace Murray Hopper has pointed out, when the computer industry began, many women worked with computers, so job titles, like "programmer" and "analyst", were gender neutral. That is one barrier less to fight. Additionally, the ambivalence about whether to use gender neutral English and the empirical, as opposed to principled, arguments used by many to support the old way, suggest that changes may be made for the better.

Chapter 4

Problems with Solutions

She never knew whether it was her turn or not, the game was in such confusion — Lewis Carroll, *Alice in Wonderland.*

Unfortunately, many attempts to encourage women in male-dominated fields at least partially backfire. Specifically, special treatment can imply, in a number of ways, that women cannot compete with men. Also, programs implemented to ensure equal opportunity often get misrepresented as having lower standards for select groups. Additionally, consciousness-raising can lead to hypersensitivity and false accusations, which then causes falsely-accused males to be skeptical of women's claims.

4.1 The Perception of Lowered Qualifications

One of the biggest misrepresentations of recent times is that affirmative action is synonymous with lowered standards for favored groups.[1] While some affirmative action programs do involve a deliberate lowering of test scores required for entrance, many programs do not. The goal of many affirmative action programs is to ensure that all applicants are considered in an unbiased manner.

4.1.1 The Need for Affirmative Action

As discussed in Section 1.2.1, women are often judged as less qualified than men when their performance is identical. For example, in one controlled study, department chairs were given nearly identical curricula vitae of supposed male and female applicants and asked to recommend their faculty rank. They chose assistant professor if they thought the applicant was a woman and associate professor if they thought it was a man [Fidell 1975]. The following examples show how these contradictions are rationalized:

[1] I made this mistake in the first version of this report.

- A man is described as 'serving on two departmental committees and *even* on one institutional committee,' while a woman with the identical experience is noted as 'serving on two departmental committees but *only* on one institutional committee [Sandler 1986, page 6].

- A woman who has published only three articles is denied tenure. ('Yes, the articles are high-quality, but she should have published more than that in 5 years.') Later, a man in the same department is awarded tenure. ('Well, he's a slow starter, but he shows a lot of promise.') [Lattin 1984, page 227].

These studies contradict the assumption that, without affirmative action, all decisions are purely merit-based. In fact, few would dispute that "before affirmative action programs were developed, women were routinely turned down for many faculty and most administrative positions, regardless of their credentials" [Lattin 1984, page 228]. For example, "Gerty Cori, the first American woman Nobel Prize winner (for medicine or physiology in 1947) ... was not promoted to full professor until the year she won the prize" [Hunt 1991]. See also [Gornick 1990] and [Selvin 1991, page 28]. Clearly, something is wrong with the way people make decisions, and they must bend over backwards to make sure they consider each candidate equally.

College admissions were also frequently discriminatory before affirmative action:

> The admissions policy of the University of North Carolina, for example, was openly discriminatory [until the early seventies]: 'Admission of women on the freshman level will be restricted to those who are especially well qualified'.... The American Council on Education reported that freshmen who entered four-year colleges in 1968 had widely divergent high school grades: more than 40 percent of the girls had averages of B+ or better but only 18 percent of the boys could boast the same.
>
> The attitude of some male alumni certainly indicates that they would find nothing at all strange in having disparate admission standards: In congressional testimony in 1970, Ann Sutherland Harris reported the following: 'At Yale, when the new women undergraduates protested the quota on women and made the modest demand for fifty more women undergraduates the coming year at an alumni dinner, an alumnus was cheered when he said: "We're all for women, but we can't deny a Yale education to a man."' And when Harris was questioned by Congressman William D. Hathaway of Maine on school admissions policies, the same bias become apparent: 'Mr. Hathaway: If you take the college administration and they have so many kids that they can take into school and they know that 90 percent of the men, for example, in our society have to get a job,

> and, say, only 50 percent of the women are going to get it, and they have a limited number they will take in, aren't they warranted in taking nine out of ten men and fewer girls?' [Abramson 1975, page 74]

With attitudes like this, clearly some sort of program is needed.

4.1.2 Distrust of Qualifications

As mentioned earlier, many people consciously or unconsciously have lower expectations of women. This is exacerbated by affirmative action. If it is suspected (even falsely) that women can get jobs or university positions with lower qualifications, people will be suspicious of their skills. Walter Williams, a black economist opposed to affirmative action, writes about this phenomenon:

> Today's quota policies raise real doubts in the eyes of many whites who wonder whether some blacks have *earned* their status, or whether they had it handed to them. Like sickle cell anemia, this 'How do you know?' problem has become a sort of black man's disease.
>
> It's not exclusively a black man's disease, however. Women and others who have been given special treatment also are victimized by it. Recently, I had the occasion to take a short commuter flight. Upon boarding the aircraft, I saw a woman sitting in the right hand side of the pilot's compartment. There I was, faced with the 'How do you know' problem, with pretty high stakes in the balance.[2]

The recent press coverage of Supreme Court nominee Clarence Thomas shows how unreasonable people can be about quota programs. Newspaper after newspaper reported that, because Holy Cross College and Yale Law School had aggressive minority quotas when Thomas was admitted, he necessarily "benefitted from minority preference admissions policies".[3] The implicit assumption is that, if a quota system was in effect, *none* of the admitted blacks were qualified. While some of the blacks may have been unqualified, it would be ridiculous to assert that none were, and, specifically, that Thomas was unqualified. Additionally, as just discussed, Yale's pre-quota admissions did not even purport to be purely merit based.

[2] Williams, Walter E. *All it Takes is Guts: A Minority View.* Washington, D.C.: Regnery Gateway, 1987, page 44.

[3] Barrett, Paul M. and Stephen Wermiel, "Judge Thomas, Billed as Conservative, May Prove Unpredictable," *The Wall Street Journal*, July 19, 1991, page A1. The same fallacy appeared in *The New York Times* and *The Chicago Tribune*.

4.1.3 Low Self-Confidence

When women suspect (even falsely) that they have gained something through affirmative action, their self-confidence often suffers. One female MIT student wrote:

> As a freshman I was told I got into MIT because I was female. When I was a sophomore, people told me I would get into 6-A [the industry co-op program] easier because I was female. When I applied for permanent jobs, I was told companies would hire me just because I was female [Anu 1990].

As noted in [Anu 1990], hearing such statements repeatedly can harm a woman's self-esteem and cause her to question her ability.

No feminist I have spoken with has favored admitting less-qualified women to university positions. It is easy to see that, in addition to breeding the distrust described above, admitting unqualified women would, in general, be harmful to the people one wants to help: If a woman is admitted to a school for which she is not qualified, she will probably be less happy and successful than if she attends an institute for which she is qualified.

4.1.4 Uncritical Faith in Test Scores

Another point of confusion in the affirmative action debate is how much weight to put on objective test scores.[4] While many people assume that someone with lower SAT, LSAT, etc., scores is less qualified, this is not necessarily the case:

> The SAT is marketed as a predictor of first-year college grades. Yet women, who earn higher first-year grades than men, score lower on the SAT math and verbal section....
>
> Moreover, women perform as well as, if not better than, men on New York State's Regents exams for algebra, geometry and trigonometry. Yet women consistently score lower than men on the SAT math section. The manufacturers have no explanation why women score lower than men on the SAT verbal section. It is well known that females perform better than males in high school English classes [Horner et al 1990].

For example, statistical analysis done at MIT shows that although male undergraduates have higher average board scores than female undergraduates, women graduate at a higher rate than men and receive grades that are just as high, even when adjusted for major.

[4] I've always found it ridiculous that the person with the highest recorded IQ claims to be the smartest person in the world.