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ABSTRACT. This study examines over 300 letters of recommendation for medical faculty at a large American medical school in the mid-1990s, using methods from corpus and discourse analysis, with the theoretical perspective of gender schema from cognitive psychology. Letters written for female applicants were found to differ systematically from those written for male applicants in the extremes of length, in the percentages lacking in basic features, in the percentages with doubt raisers (an extended category of negative language, often associated with *apparent commendation*), and in frequency of mention of status terms. Further, the most common semantically grouped possessive phrases referring to female and male applicants ('her teaching,' 'his research') reinforce gender schema that tend to portray women as teachers and students, and men as researchers and professionals.

KEY WORDS: *academic medicine, apparent commendation, discourse analysis, gender bias, letters of recommendation, methodology, possessives*

Gatekeeping practices, including educational requirements, job interviews, and letters of recommendation, all serve to control access to particular positions and the societal benefits that thereby accrue. At the same time gatekeeping practices are all potentially revealing, particularly in times of social change, as institutions replicate themselves and seek to control change. However, studying these practices is challenging, for the higher the social status of the institution, the less public the gatekeeping. We are reminded of Marguerite Yourcenar, the first woman elected to the French Academy since its founding in 1634, and her famous address in 1981 in which she noted that 'the Academy hadn't been particularly misogynist. Rather it had merely conformed to the practice of readily putting women on a pedestal, but not yet allowing them to be offered a seat' (Yourcenar, 1981: 2). Thus, we remember her words, but the gatekeeping

practice through which she was elected is shrouded in the privacy of the 39 male members of the time.

Not just access, but even interest in gatekeeping practices is limited by the way inequities in the advancement of women and minority groups are often hidden by media attention to the few exceptional women or minorities who do succeed in reaching positions of power. These few seem to repudiate allegations of inequity. But as several law cases have argued, people shouldn't have to prove exceptional, only equal to others who were promoted at the same time (Selvin, 1993). Statistics of hiring and promotions in professional institutions, along with studies like the one of the Swedish Medical Research Council's sexism and nepotism in awarding postdoctoral fellowships (Wenneras and Wold, 1997),¹ also call into question gatekeeping practices through which similar people are selected, year in and year out.

In this article we analyze a naturalistic set of all the letters of recommendation for successful applicants for faculty positions in a large American medical school for a three-year period in the mid-1990s. We were asked by a member of the Executive Committee for Hiring and Promotion of the medical school to see if the letters of recommendation written for female applicants were systematically different to those written for male applicants. The broader social context is that of professions in America in which women's greater access to educational opportunities in medicine, law, business, seminaries, and academia since the 1970s has not resulted in a commensurate movement of women into positions of power in these institutions and their related organizations (Valian, 1998).²

Specifically in academic medicine in the USA, the institutional context of this study, in the early 1990s women made up close to 20 percent of medical faculty, and their chances of receiving tenure were half that of male colleagues (Brownlee and Pezzullo, 1992). At that time, there were no female deans of medical schools and of 2000 departments, only 85 had female chairs (Brownlee and Pezzullo, 1992). By the mid-1990s, women accounted for 32 percent of the assistant professors, 21 percent of the associate professors, and 10 percent of the full professors (Association of American Medical Colleges, 1996), or 22 percent of medical faculty. What makes this more problematic is the greatly expanded pool for female medical academics. The percentage of females in medical school classes had risen from 8 percent in 1964 to 42 percent in 1994 (Association of American Medical Colleges, 1996: Table B1). And academic medicine as opposed to private medical practice was attractive to a significant number of female medical school graduates. Yet once in academic medicine, women were still taking significantly longer to advance than men.

Even those women who were able to rise in academic medicine reportedly worked under sex-related stress. The resignation in 1991 of Dr Frances Conley from Stanford Medical School, the only female neurosurgeon in her department, brought to public notice what she referred to as 'demeaning actions and words for twenty-five years' (Conley, 1998: 120). In the public discussion that ensued, 'medical professionals of both sexes agreed that academic medicine was a

particular hothouse of sexist attitudes because of the rigid educational hierarchy, the traditional inequality between doctors and nurses which sets the tone for other working relationships, and the many opportunities to make rude anatomical remarks' (Gross, 1991: 10). Female medical academics noted the daily slights that were so wearing. A study at Johns Hopkins University School of Medicine in 1990, found that only 38 percent of its female faculty felt welcomed members of the institution, in contrast to 74 percent of its male faculty; and 75 percent of female faculty felt that men had difficulty taking careers of women faculty seriously and accepting them as colleagues (Fried et al., 1996: Table 2).

American medical colleges are classic examples of male-dominated institutions. Because of the social prestige of medicine in the USA – in the context of academia, medical faculty as a group have the highest salaries – medical colleges have been able to remain more socially conservative in a time of social change. What this implies for letters of recommendation is that gender schema,³ that is, sets of largely non-conscious assumptions about sex differences in men and women (Valian, 1998), that so affect expectations and interpretations of interactions, may be more overt here. Amplifying this is the convention that letters of recommendation for medical faculty should be written by heads of department. Heads of departments in medical colleges are overwhelmingly older males whose own experience of medical training took place at times when women were largely nurses, patients, or stay-at-home wives.

In contrast to the data of much discourse analysis of racism or prejudice, where the Other is already a group whose agency is backgrounded or suppressed (van Leeuwen, 1996) and whose individuality has been reduced or is non-existent, here we begin with letters for individuals. Theoretically then, the letters for women, or foreigners or African Americans had we sufficient numbers, potentially show the process of reduction from individual to Other. In terms of our framework, the least persuasive letters for female applicants describe them in ways that ignore or downplay their professional accomplishments and individual qualities, reducing them to gender schema that see women as less capable and less professional in the demanding work of academic medicine.

From a meta-research point of view, we are thus examining a situation in which contrasts will most likely be greater and more obvious than in letters of recommendation for other areas of academia. Like Goffman (1981) in his study of radio talk, in which he built upon its restricted interactional setting – that of the radio announcer who lacks direct feedback – to then propose ways of looking at more complex face-to-face interaction, we too hope to propose ways of thinking and methods of research that could be applied to data with more subtle distinctions. Although the gender schema that affect both men and women throughout society tend to be unarticulated, examination of these letters of recommendation should provide another way of studying such schema where there is explicit language and meaningful contrasts, along with the better known statistics, hearings (Trix and Sankar, 1998), and law cases. Methodologically this study also wrestles with a situation in which what is not written is potentially

salient. Thus the 'glass' in the title refers both to the 'glass ceiling' that appears to be impeding women from advancing professionally, as well as 'glass' or invisible domains in the letters themselves.

Previous research on letters of recommendation

Studies of letters of recommendation have come largely from the fields of education (Morisett, 1935; Rayber, 1985), psychology (Cowan and Kasen, 1984; Hatcher, 1983), English (Eger, 1991), sociology (Bell et al., 1992), linguistics (Bouton, 1995; Precht, 1998; Watson, 1987), business (Tommasi et al., 1998), and medicine (DeLisa et al., 1994; Gayed, 1991; Greenburg et al., 1994; Johnson et al., 1998; O'Halloran et al., 1993). Besides these systematic studies, there are also numerous short articles in multiple fields that reflect anecdotally or give advice on writing letters of recommendation. In the systematic studies, the main concerns are reliability (Hatcher, 1983; Morisett, 1935; Tommasi et al., 1998), relative importance of letters of recommendation for screening candidates (DeLisa et al., 1994), deficiencies in letters of recommendation (O'Halloran et al., 1993), cross-cultural differences and evaluations (Bouton, 1995; Gayed, 1991; Precht, 1998), identification of features linked to positive and negative interpretations (Greenburg et al., 1994), and sex-linked features or patterns (Bell et al., 1992; Eger, 1991; Hatcher, 1983; Watson, 1987). The features most commonly studied are: length, naming practices and gender identification, negative language, and sex-linked descriptive terms.

An unusual study of particular relevance is that of Eger (1991) who took a psychological approach and profiled 12 male and 12 female writers of letters of recommendation according to the Myers Briggs personality assessment. He then gave each of the writers files on six applicants that contrasted in gender and personality for whom to write recommendations. Eger hypothesized that people would write better letters for people who were more like themselves in personality, ideology, and gender. This he indeed found to be true. This 'advocacy factor' as he called it, has relevance for this study in that letters of recommendation for medical faculty positions are overwhelmingly written by men.

Among studies of sex-linked features, Watson (1987) analyzed 80 letters of recommendation for graduate study in social sciences (40 letters written by males: half for males, half for females; 40 letters written by females: half for males, half for females). She found that the longest letters were written by female recommenders for female applicants, that men tended to use gender identifications with female applicants twice as often as females did for male applicants, that females used first names of females more frequently than males did, and that comments about appearance and condescending adjectives were used only for female applicants, whereas only men were praised for their sense of humor. We relate some of these to the findings for letters of recommendation for medical faculty. But in our study the contrast of female and male recommenders was not possible because such a relatively small proportion of the recommenders were

female. We wonder if the recommenders in Watson's study were of equal status as well.

Another study of sex-linked features, not systematic but nevertheless stimulating, is LaCroix's on gender bias in recommendations for admission to colleges (LaCroix, 1985). LaCroix noted frequent stringing together of stereotypical terms, like 'Betty is a polite, quiet, gentle, friendly, and cooperative member of her class' (LaCroix, 1985: 25). What is most important is not that these terms are negative in themselves, but that they take the place of more substantive comments about academic characteristics. Thus, there were 'knowledge gaps'. This we also found in letters of recommendation for medical faculty. But further, one of the most challenging features of letters of recommendation for medical faculty is the growing tendency not to state the negative, but merely to fail to state the positive. Perhaps fear of lawsuits encourages this. So readers need to be carefully attuned to what is not said. This is less problematic when the data are not numerous. But when there are over 300 letters, as in our study, seeking the unwritten requires other methods besides close reading.

As for the studies in medicine, they are primarily focused on the letters of recommendation used to select and place students in residency training programs. We found no previous studies on letters of recommendation for medical faculty. Nevertheless, of the many studies of letters for medical residency programs, the most relevant is that of Greenburg et al. (1994) for surgical residencies. It was based on 80 letters drawn from an applicant pool of over 300 applications for 6 places per year. The letters were evaluated into groups of acceptable, mediocre, and poor, and then different combinations sent out to surgeons across the country for their evaluations. Half of the letters were sent with their original letterheads, half without. Despite surgeons thinking that school of origin mattered, it did not turn out to be statistically significant. As for length, the top five letters were twice as long as the bottom five letters. The top letters also had three times the number of personal references as did the poorly ranked letters. The worst ranked letters either contained no information or ambiguous information. They lacked specificity. The researchers also found that two of the letters ranked as lowest in their group were written on behalf of students whose other letters were in the highest group, thereby confirming the need for multiple letters. Finally, the researchers noted that although the rankings largely coincided, there may be 'code phrases' or understandings that as of yet have not been specified but which affected rankings, especially between the acceptable and the mediocre-ranked letters. Interestingly, there was no mention of gender in the study.

Data and methodology

As noted, the data for this study are a naturalistic set of all the letters of recommendation for successful applicants for faculty positions at a large American medical school over a three-year period from 1992 to 1995. This amounted to 312 letters for applicants for 103 faculty positions, with sets of approximately

three letters per applicant. For legal reasons, only the letters of successful applicants were available for study. The positions applied for were both clinical and research, largely at the assistant professor level, but also including adjunct positions as well as eight associate professorships and one full professorship. Thus, another way to think about the data set is to see it as the potential pool for promotion, including those who will and will not be promoted. The medical specialties were a broad spectrum of 37 different ones, including surgery, oncology, neurology, internal medicine, obstetrics–gynecology, urology, radiology, pathology, psychiatry, pediatrics, family medicine, and anatomy. We attempted to group these specialties but in the end gave up. Apart from gross differences of pay and prestige between surgery, internal medicine, and basic science, physicians could not agree on the categories.

As for the gender of the applicants, 89 of the letters were for women, 222 of the letters were for men, and one letter was for a couple. That is, 29 percent of the letters were for women, whereas 71 percent of the letters were for men. (Unfortunately we cannot know the gender breakdown of total applicants, including the unsuccessful ones.) The overall percentages of men and women at the different ranks at this large medical school were similar to the national average, so we assume this gender contrast in hiring is not unusual. Specifically, at this medical school in 1995, 31 percent of the assistant professors were female, 19 percent of the associate professors were female, and 10 percent of the full professors were female. Overall, 23 percent of the medical faculty were female.

As for the recommenders, they were 85 percent male, 12 percent female, and 3 percent unknown (probably foreign names that could not be readily categorized by the office that blacked out the names). The high proportion of male recommenders reflects the convention of having heads of department, who are overwhelmingly male, write the letters. The institutions from which the recommenders hailed were university teaching hospitals and major urban hospitals across the USA, Canada, and overseas. We attempted to categorize these institutions out of concern for potential differences of familiarity and culture. We grouped the places of origin into four categories: United States – local (215 letters), United States – not local (79 letters), Canada, Britain, Australia, South Africa, Israel or CEASI (12 letters), and Europe but not Britain (5 letters). By ‘local’ we refer to the geographic region surrounding the medical school in question, comprised of areas of three adjoining states. We assumed that physicians in this proximity in the same specialties would know each other and their letters might differ from those who didn’t know each other. The CEASI group is a largely English and American-oriented group. The problem with this classification is that recommenders from different cultural backgrounds could be in any of these locations, and we could not know how long they had been in their current institutions.

Nevertheless, we did notice that letters from Europe tended to be shorter. Even letters from Canada were less hyperbolic than those from the USA. But we did not have enough letters to make more than general observations. Anecdotally, we

have been told that in Germany, for example, the stature of the recommender matters more than carefully constructed content. This may also have been true earlier in America when physicians knew all the main people in their fields and there were many fewer hospitals and medical schools. We were told by older physicians that in the 1940s, phone calls alone were often sufficient for providing recommendations. This suggests a more unitary and informal structure of decision-making, one fraught with potential misuse by today's standards.

The gatekeepers, that is, the people to whom the letters were addressed, were overwhelmingly male. Specifically, 96 percent of the gatekeepers were male, 4 percent female. Combined with the high percentage of male recommenders (85%), the letters can be seen as largely in-group discourse, written by male physicians to male physicians. In keeping with recent research on institutional discourse, this is discourse between professionals (Drew and Sorjonen, 1997); in social terms it is discourse between elites (van Dijk, 1993). The forms of address of the gatekeepers are also interesting. Most gatekeepers were addressed formally as 'Dear Dr Koop' (whatever last name). However, 40 were addressed, 'Dear Al' (whatever first name). The gatekeepers addressed by first name were all males, constituting 13 percent of the letters to male gatekeepers, and reinforcing the in-group nature of the letters.

After we had conducted the initial analysis of the letters, we took sets of nine letters that we had rated high, average, and deficient, and showed them to physicians of different specialties across the region. We asked the physicians to rank the letters and comment on them. Their rankings were in line with ours; a few also commented on subtexts that we had not noticed. For example, one physician noted after reading the closing paragraph of a letter we had all ranked high, that the recommender had also implied the candidate was good enough for the proposed institution but not for his own. Interviews with physicians reinforced our understanding of the strong hierarchical consciousness of the American medical profession.

We then analyzed the letters according to the traditional categories of length, naming practices, negative language, and sex-linked terms. Through interacting with the data we modified and expanded the category of negative language, tabulated differences in repetition of status terms across the letters, and added a category of letters lacking in basic features. Our most interesting new category is that of semantic realms following possessives.

We want to emphasize that the exigencies of the original audience for our research, that is, medical academics who are wedded to statistics as an essential tool of persuasive research, in combination with our adherence to naturalistic data, and the gender disparity of successful applicants in the field, led us to request large numbers of letters so that the percentages of letters for women could be statistically significant. The resulting corpus was so large that it initially required analysis at a broader level than many discourse studies. We feel that the combination of critical discourse analysis with methods for corpus analysis will increase the potential audience and effect of discourse research.

General findings

One of the simplest variables in ranking letters of recommendation is *length*. As the structure of these letters is fairly conventional with an introductory section wherein the recommender notes the relationship with the applicant, a body where academic traits and achievements are noted, and a closing section where the recommendation is made (Bouton, 1995: 221), a letter that is excessively brief may omit some of these expected elements. A secondary pattern, particularly in letters for promotion or higher rank entry, involves an expansion of the body to include evidence of productivity in research, effectiveness in teaching, and collegiality in service. Often the more detail in the letter, the more persuasive. A longer letter shows care on the part of the recommender at the very least. Whereas a very brief letter may be the result of laziness on the part of the recommender – the result of not knowing the applicant well and not taking the time to read the applicant's résumé – or it may be that there is nothing positive to say. Whatever the level of responsibility or writing skills of the recommender, the effects are interpreted as reflecting on the applicant.

By number of words, the average length of the letters was 246 words, with the average length of letters for female applicants being 227 words, whereas the average length of letters for male applicants was 253 words. To help visualize length, we standardized all the letters to have lines of 97 characters including spaces. Thus we were able to compare letters in terms of lines as well as numbers of words. As a convention we also included the salutation and closing as separate whole lines. We found great similarity in length of letters for female and male applicants in the mid-ranges of length of 11–20 lines or 111–202 words (45% of letters for women, 44% of letters for men), 21–30 lines or 212–303 words (25% of letters for women, 25% of letters for men), and 31–50 lines or 313–505 words (19% of letters for women, 15% of letters for men). However, at the extremes there were differences. At the high end, 8 percent of the letters for men were over 50 lines long, whereas only 2 percent of the letters for women were this long. The longest letter of our data was written by a female recommender, but unlike Watson's results, for a male applicant (116 lines, 1354 words). Whereas at the low end, 10 percent of the letters for women were 10 lines (111 words) or fewer, whereas 6 percent of the letters for men were this short. Short letters reflect to a certain extent the inclusion of letters for adjunct faculty, but they do not explain the gender discrepancy for there were over three times the number of successful male applicants for adjunct positions as successful females, and some letters for assistant professorships for women were equally scant.

In studying the shorter letters further, we found a whole new class of letters that we prefer to term *letters of minimal assurance* rather than letters of recommendation, as they were lacking in relevant features. The following is an example of such a letter:

TEXT 1. EXAMPLE OF *LETTER OF MINIMAL ASSURANCE*

Dear Dr Alfred Koop:

It gives me great pleasure in writing this recommendation letter for Dr Sarah Gray. I have known Sarah as a resident and as staff at Mrahonod Metropolitan Hospital. She is knowledgeable, pleasant, and easy to get along with. I have no hesitation in recommending her for a faculty position at Centvingcing.⁴ I will be happy to answer any further questions in this regard.

Charles Lewis, MD
Chairman, Department of Psychiatry

From our analysis of the letters, and supported by the literature (Johnson et al., 1998: 42), we expect letters of recommendation to include: commitment and relationship of recommender with the applicant, some specificity of focus and record of the applicant, and some evaluation or comparison of traits and accomplishments of the applicant. Notice that the above letter (Text 1) shows commitment and relationship of recommender with applicant, but no specificity of focus or record, and no evaluation of traits or accomplishments. Where at least one of these three areas was not represented, we considered the letters to be of *letters of minimal assurance* rather than letters of recommendation.

TEXT 2. EXAMPLE OF *LETTER OF MINIMAL ASSURANCE*

RE: Sarah Gray, MD

I am writing in support of Sarah Gray MD's application for the position of Associate Professor of Nephrology in your department. I have worked closely with Dr Gray both as her chairman and as a fellow faculty member doing pediatric nephrology for the past three years. She is a superb clinician and academician. I truly enjoyed working with her. Your gain is my loss. I believe that you will find that she will be a genuine adjunct to your faculty. If you require more specific information, please do not hesitate to notify me.

Sincerely,
Charles Lewis, MD
Professor & Chairman, Depart. of Nephrology

In the above letter (Text 2), the commitment and evaluative comments are present. What is problematic is specificity of focus and record of the applicant. Notice that it is the recommender who is the agent in 'doing pediatric nephrology', although the applicant has a backgrounded role in this as 'fellow faculty member.' The lack of specificity of the applicant's record is particularly egregious as the position is for Associate Professor. It appears that the recommender senses this, and therefore suggests that more specific information could be forthcoming, were it required.

In the corpus, we found systematic differences in the relative percentages of *letters of minimal assurance*. Fully 15 percent of the letters for female applicants fit into this category of letters of minimal assurance, whereas only 6 percent of the letters for male applicants fit into this mold (Figure 1). This is statistically significant with a *p*-value of .021.

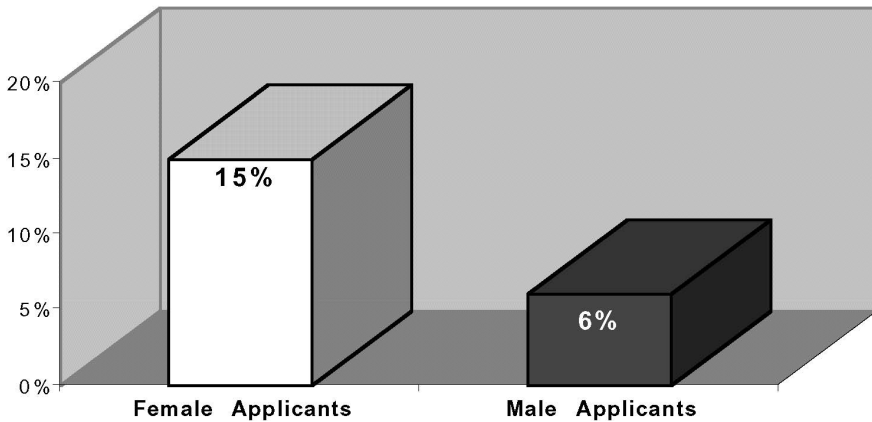


FIGURE 1. Percentage of letters of minimal assurance

Although such letters of minimal assurance were more common among the shortest letters, generally 70–100 words, length alone was not the defining feature. (As mentioned, the average length of all letters was 246 words.) For example, the following two letters are very short and yet include the relevant areas as described above.

TEXT 3. EXAMPLE OF SHORT LETTER OF RECOMMENDATION

RE: Appointment of Sarah Gray, MD:

I am pleased to recommend Dr Sarah Gray for faculty appointment as Clinical Assistant Professor. I have known Dr Gray for 8 years. *She worked* in research with me for 1 year and *did fellowship training* in our program for 2 years. She is a very good internist and endocrinologist. She is honest and reliable and of highest moral quality. She has good judgment in patient care and is very thoughtful and considerate towards those she is caring for. She is a good clinical teacher and should serve the department well in the capacity of instructing students and residents.

FROM: Charles Lewis, MD, Director, Endocrine and Hypertension Division

All the features of commitment of recommender, and specificity and evaluative comments regarding the applicant are present in this memo-type letter (Text 3). Note as well the second sentence where the applicant is portrayed as the agent: ‘she worked in research and did fellowship training.’ Such agency foregrounds the applicant as an active person in her own right.

TEXT 4. EXAMPLE OF SHORT LETTER OF RECOMMENDATION

Dear Dr Koop:

I am writing to support Dr Harvey’s appointment as Clinical Assistant Professor of Medicine. Dr Harvey did his Fellowship here and I got to know him well. I

consider him highly intelligent, highly motivated, and highly productive (*he wrote an extraordinary number of papers for a Fellow*). He has a thorough knowledge of medicine. He is excellent with patients and is exceptionally pleasant without a shred of egotism, and was highly admired, liked, and respected by his colleagues. I recommend him highly.

Sincerely,
Dr Charles Lewis, MD
Director, Cancer Center

Again, despite it being a short letter (Text 4), the features of commitment of recommender, some specificity of record, and evaluative comments of the applicant are all present. As with the previous short letter of recommendation, notice again that within the parentheses of the third sentence, the applicant is the agent: 'he wrote an extraordinary number of papers'. This productivity stands in interesting contrast to the applicant's being 'without a shred of egotism', the latter not a common trait of male academic physicians.

Another area that has been studied in research on letters of recommendation is *naming practices*. In its simplest form, we did not find differences in this area between letters written for male and female applicants. In general, the first sentence of a letter referred to the applicant in full name or in Dr +last name, as did the sentence in the closing with the recommendation. In the body of the letter, the applicant was referred to variously as Dr +last name, or full name, or first name only. But the percentages of all these uses were similar across the data.

Another sort of naming practice which did show difference was the use of gender terms. As would be expected in the use of gender terms (woman, lady, mother, wife; man, gentleman, father), those for females were more marked.

TEXT 5. EXAMPLES OF USE OF GENDER TERMS IN DIFFERENT LETTERS

Dr Gray is a thorough, hardworking, extremely intelligent and insightful *woman*. She is an extremely intelligent young *lady* with an admirable work ethic.
On a personal level Sarah is, in my opinion, the quintessence of the contemporary *lady* physician who very ably combines dedication, intelligence, idealism, compassion and responsibility without compromise.
I believe Dr Harvey to be a *man* of great personal integrity.
Overall, we have found William a highly intelligent and hard working young *man*. He is entirely dedicated to patient care, personable, a *gentleman* in every sense of the word.

The above examples of use of gender terms (Text 5) all come from different letters, generally in the last third of the letter. Note the pairing of 'intelligent' or 'intelligence' with the female gender terms, as if this were remarkable, as well as the clichéd phrases with the male gender terms, 'a man of great personal integrity', and 'a gentleman in every sense of the word'. Of the letters for female applicants, 10 percent included such references, all but one by male recommenders, whereas only 5 percent of the letters for male applicants included use of such

gender terms. Other researchers have interpreted such usage to mean that the writer sees the applicant first in terms of gender and secondarily in terms of position (Watson, 1987: 27).

But we would like to add a fuller context for the unusual 'quintessence of the contemporary lady physician' phrase. Most female physicians would not like to be referred to as 'lady physicians', but we believe this reflects a recommender from an older generation. Further, we see the recommender of this letter effectively supporting the appointment of the applicant, with a subtext of indirect criticism of many contemporary physicians who lack the qualities of this 'lady physician'. The letter is the third longest for a woman, 44 lines or 504 words, made up of six paragraphs. In the first five paragraphs, the female applicant is referred to as Dr Gray. She is also described as 'Staff Physician', with her record of post-residency training and work (paragraph 1), 'an individual dedicated to her work' who has mastered multiple difficult procedures (paragraph 2), 'a refreshing type of person' in that she tends to underrate herself but who actually operates at a sophisticated level of problem solving and expertise (paragraph 3), 'the quintessence of the contemporary lady physician' who is held in high esteem by those who work with her at all levels (paragraph 4), and 'a former trainee' to whom the recommender gives unqualified endorsement for advancement (paragraph 5). In the sixth and final paragraph the applicant is referred to by her first name, and surprisingly also as 'my surrogate' (paragraph 6). For a male recommender to see a female applicant as 'his surrogate' crosses gender lines and is truly worthy of note and hope.

The other naming practice that showed distinctiveness was use of titles such as 'Chief Resident' or 'Head of pediatric cardiology'. Only 3 percent of female applicants' letters referred to them with a particular title other than 'Dr', whereas 12 percent of male applicants' letters included such titles. The problem here is knowing if more women had titles and they were not used, as was the case in two of the three letters of all the sets of letters that included use of a woman's title, or if indeed there was a higher percentage of men who had achieved the prominence to be accorded such titles.

A third area that has been discussed, especially in the non-systematic articles on letters of recommendation, is *negative language*. In letters of recommendation, negative comments stand out like sore thumbs. Some recommenders feel they will be more credible if they also include negative points, but the result is usually that the negative comments are more memorable. In coding the 312 letters, we came to theorize that negative language was part of a larger set of elements that potentially raised doubt in the mind of the evaluator. Similarly, another study noted signs of 'hesitancy' on the part of the recommender and faint praise (Greenburg et al., 1994: 197). We defined these *doubt raisers* as including negative language, along with hedges, potentially negative comments, unexplained comments, faint praise, and irrelevancies. In general, *doubt raisers* were found in the middle section of letters.

TEXT 6. EXAMPLES OF CATEGORIES OF *DOUBT RAISERS**negative language*

While Sarah has not done a lot of bench type research, She has a somewhat challenging personality.

Although his publications are not numerous as you know, While not the best student I have had,

hedges

It appears that her health and personal life are stable.

He appears to be a highly motivated colleague,

potentially negative

As an independent worker she requires only a minimum amount of supervision.

Bright, enthusiastic, he responds well to feedback.

unexplained

Now that she has chosen to leave the laboratory.

faint praise

She worked hard on projects that she accepted.

I have every confidence that Bill will become better than average. He is void of mood swings and temper tantrums.

irrelevancy

She is quite close to my wife.

He is very active in church.

Irrelevancies are not innately negative, but the overall effect can raise doubt for it appears that the recommender could find nothing more substantive to say about the applicant.

Again, with respect to the category of *doubt raisers*, there were systematic differences between letters written for male and female applicants. Specifically, whereas 24 percent of the letters written for female applicants had at least one *doubt raiser*, only 12 percent of the letters written for male applicants had at least one *doubt raiser* (Figure 2). This is statistically significant with a *p*-value of .01.

Further, some letters have more than one *doubt raiser*. Of the letters for female applicants with *doubt raisers*, there is an average of 1.7 per letter. Of the letters for male applicants with *doubt raisers*, there is an average of 1.3 per letter. Such multiple *doubt raisers* can build on each other.

For example, the following letter frames the applicant early on with an irrelevancy, namely that the applicant is 'quite close to my wife and they frequently seek each other's company.' The interpretation could develop that the recommender wrote the letter of recommendation because his wife insisted he do so. Whatever, it gives the applicant a decidedly less than professional alignment. This worsens with the second *doubt raiser*, namely the applicant's unexplained choice to leave the laboratory. Laboratory research has higher status than clinical work and so there needs to be either some positive comment on the laboratory work the applicant did previously, or an explanation of why she is focusing on clinical work, or no mention of the change.

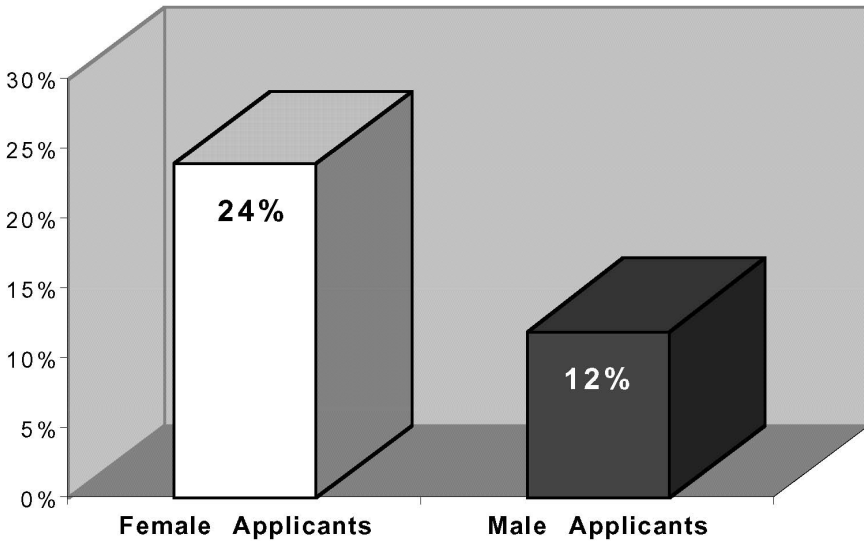


FIGURE 2. Percentage of letters with doubt raisers (*negative language, hedges, potentially negative, unexplained, faint praise, irrelevancies*)

TEXT 7. LETTER WITH MULTIPLE DOUBT RAISERS

Dear Alfred:

It is a pleasure to write a letter in support of Sarah Gray MD, one of our urologists who is leaving St Louis and would join your program. I have known Sarah for approximately 4 years, becoming socially friendly with her and her husband, particularly over the past year and a half. *Sarah is quite close to my wife, and they frequently seek each other's company out.* Obviously, Sarah is a very committed physician who has very good clinical skills, ambition, and a desire to participate actively in the care of children with urologic problems. I get a sense that she is looking to develop a clinical program *now that she has chosen to leave the laboratory* and concentrate exclusively on clinical medicine.

Although I can't specifically comment on Dr Gray's clinical skills in detail, I have been impressed with her care of patients that we are mutually involved with. I believe she is a concerned and interested clinician who offers excellent care, *tries hard to communicate* with the patients and with the physicians. *She is more academic than most clinical physicians* and this should be a resource as she becomes involved in her own programs.

Although *we will miss Sarah* we are sure she will be a great asset to your program and, therefore, *we wish her well.*

If there are further questions which I can answer regarding Dr Gray please do not hesitate to call.

Yours sincerely,
Charles Lewis, MD
Professor of Pediatrics,
Chief, Division of Urology

Notice as well the hedges on the part of the recommender, such as, the applicant 'tries hard to communicate with the patients and the physicians.' Is she not also a physician? And with the fourth italicized comment, 'she is more academic than most clinical physicians,' one wonders in what respect? In the next statement, 'we will miss Sarah,' which 'we' is being referred to – the hospital staff or the recommender and his wife? Overall, the commitment on the part of the recommender is not convincing. Why does the recommender not know for sure why she has left the laboratory? And notice that the applicant has no agency other than having chosen to leave the laboratory and concentrate on clinical medicine. The early framing in social rather than professional terms, added to the following hedges and wishy-washy phrasing, make this more a polite acknowledgement of departure – 'we wish her well' – than a recommendation of ability and professional accomplishment.

Another sort of letter with multiple *doubt raisers* has them escalating toward the end of the letter. The longest letter for a woman, nine paragraphs of 80 lines, totaling 849 words, has such an escalation in the last three paragraphs of the letter. Before that, the structure of the letter is a common one of evaluation of teaching, research, administrative record, national contribution, and service. There are occasional *doubt raisers* in these, but they are well blanketed in solid positive comments of ability and performance. In teaching, the applicant 'received an outstanding record with medical and pulmonary medicine students.' In research, the applicant 'worked hard on projects that she accepted, and showed a good ability both as a primary investigator and, more often, as a collaborator' – two examples of faint praise in that the first implies she may not have done all projects expected of her, and the second downgrades her, as being a primary investigator is expected of an associate professor. As an administrator, the applicant 'performed very well', 'served as chair of the appointments committee', and 'established a pediatric pulmonary service'. The one *doubt raiser* here was that 'She has a somewhat challenging personality, but I felt she was appropriate in her manner of confronting issues.' For a woman to have such a personality stands out for it goes against gender schema; even for a man it would not be good. Perhaps the recommender could have written that 'as an administrator she confronts issues directly', and only positive associations would have accrued. At the national level, 'she served as chair of several committees', 'was active in a national study group', and 'is well known and respected'. In the local hospital, she took her fair share of rotations. So far this is still a strong letter.

But the last three paragraphs change the image. I include the seventh paragraph in entirety, with specifics altered to maintain anonymity.

TEXT 8. PARAGRAPH OF INAPPROPRIATE *DOUBT RAISERS*

[six paragraphs precede]

Sarah's *personal life* was in *turmoil* during the time I worked with her, and in view of the difficulties she was experiencing in that arena, her performance was

especially impressive. Her last years in my laboratory were impacted by *serious health problems* that have fortunately gone away – she had really debilitating problems with a herniated disk that apparently was a paraneoplastic phenomenon that went away once an early carcinoma of the left ovary was identified and removed.

[two paragraphs follow]

Similar to van Dijk's *apparent denial* and *apparent concession* moves in racist discourse (van Dijk et al., 1997: 170), this is a move of *apparent commendation*.⁵ That is, 'her performance was especially impressive, considering problems of which I have special knowledge'. The recommender then lists the problems in detail and to the detriment of the applicant. This is also wholly inappropriate and even unethical, for the problems are private information. Further, in the recommender's description of the applicant's health problems, she has become a patient, not a potential associate professor of pulmonary medicine. This recalls 19th century gender schema in which women were considered too emotionally and physically fragile to possibly become physicians.

The final paragraph (Text 9) is not redeeming. It brings *apparent commendation* to a high art. Here the recommender reveals that previously the applicant did not receive promotion to associate professor at his university, Northsouthern University, although he supported her then too. This might be inferred from her curriculum vitae, but to state it in the final paragraph is to frame the final recommendation with negative associations. The second sentence is also gratuitous – 'While she has not been able to accomplish a lot in academic pulmonary medicine during the past few years due to career changes and other personal issues, she has continued to grow and mature.' This commendation positions her in terms usually reserved for children. And the final blow, 'her great gift for teaching' is diminished by the qualifier, that it is 'especially in small groups and one on one'. This sort of teaching is often seen as less demanding than the large lecture and grand rounds, more suited to women's 'more private sphere'.

TEXT 9. FINAL PARAGRAPH OF *DOUBT RAISERS*

[eight paragraphs precede]

I strongly supported Sarah's application for an *Associate Professor appointment at Northsouthern University*, and feel that at the present time she is even more qualified for that level. *While she has not been able to accomplish a lot in academic pulmonary medicine during the past few years due to career changes and other personal issues*, she has continued to grow and mature, and am sure she would be an even stronger and more effective member of your department than she was in St. Louis. Her great gift for teaching, *especially in small groups and one on one*, is something that I know you will come to appreciate. I recommend her without reservation for this proposed appointment.

Even the final sentence in the recommendation, 'I recommend her without reservation for this proposed appointment,' rings hollow, for the last third of the letter, including this final paragraph, would readily foster multiple reservations.

We are heartened that the applicant was hired despite this, but we do not know at what rank. And note, this letter will remain in the applicant's file throughout her stay at the university.

Earlier studies had also looked at *stereotypical terms* associated with particular groups. We came up with a list of descriptors and nouns that were differentially associated with male or female applicants. For the men, the adjective 'successful' (in 7% of letters for men; in 3% of letters for women) and the nouns 'accomplishment' and 'achievement' (in 13% of the letters for men; in 3% of the letters for women) stood out. Not surprisingly, for female applicants 'compassionate' and 'relates well to patients and staff at all levels' stood out (in 16% of the letters for women, in 4% of the letters for men). Notice how well these terms accord with gender schemas that see men as successful and women as nurturing.

TEXT 10. EXAMPLES OF STEREOTYPIC ADJECTIVES IN DIFFERENT LETTERS

- Dr (William) Harvey has been very *successful* in obtaining grants from both the NIH (National Institute of Health) and industry and has developed an excellent clinical trials group for the study and treatment of AIDS. His substantial record of publication in reputable journals, during those developing years, certainly attests to his overall research capabilities and *accomplishments*.
- Dr (Sarah) Gray is a caring, *compassionate* physician who has excellent interpersonal relationships with patients and their families as well as nursing and medical staff.

In further studying the letters for female applicants, we developed a list of adjectives that we term '*grindstone adjectives*', as in putting one's shoulder to the grindstone. These include: 'hardworking', 'conscientious', 'dependable', 'meticulous', 'thorough', 'diligent', 'dedicated', and 'careful'.

TEXT 11. GRINDSTONE ADJECTIVES IN DIFFERENT LETTERS

- She is an extremely *conscientious and meticulous* researcher who devotes her time to laboratory work and the training of graduate students in laboratory technique.
- She is a superb experimentalist – very well organized, *thorough and careful* in her approach to research.
- I have found William to be *hard-working, thorough, and conscientious* in providing all aspects of patient care.

Again, there is nothing wrong with these qualities. We include the second example of the 'superb experimentalist', from the strongest letter for a female applicant, to show that grindstone adjectives, when well contextualized, can be most impressive. This is not their usual role however. Of the letters for female applicants, 34 percent included grindstone adjectives, whereas 23 percent of the letters for male applicants included them. There is an insidious gender schema that associates effort with women, and ability with men in professional areas.

According to this schema, women are hard-working because they must compensate for lack of ability (Valian, 1998: 170).

Findings related to repetition

Continuing the analysis of descriptors, we developed a list of 'standout adjectives', namely 'excellent', 'superb', 'outstanding', 'unique', 'exceptional', and 'unparalleled'. In tabulating the percentages of letters for female applicants and male applicants that included these terms, we found them to be similar (63% for women and 58% for men). And yet the letters for men read differently. Our gut reaction after reading many of these letters was that the men had been praised more highly with these terms than had the women. Thus we were led to consider frequency. That is, instead of coding mere occurrence of at least one of these terms in a letter, we coded for multiple occurrences. Here we found that the letters for women that had at least one of these terms had an average of 1.5 terms, whereas the letters for men that included at least one had an average of 2.0 such terms. That is, there was repetition of standout adjectives within men's letters to a greater extent. Below are examples of the greatest numbers of standout adjectives in letters for female and male applicants of similar level and focus.

TEXT 12. GROUPINGS OF STANDOUT ADJECTIVES IN LETTERS

letter for female: (entry level)	Sarah was an <i>outstanding</i> resident she is an <i>outstanding</i> young woman she is an <i>excellent</i> psychiatrist
letter for female: (mid level clinical)	her <i>superb</i> performance as a teacher she did a <i>superb</i> job of establishing an outreach component she had <i>excellent</i> relations with clinicians
letter for male: (entry level)	William has an <i>excellent</i> publication record, which includes publications in <i>excellent</i> journals including <i>Science</i> William is an <i>excellent</i> writer he has an <i>excellent</i> background and understanding he will make an <i>excellent</i> teacher he will prove himself an <i>excellent</i> researcher and teacher
letter for male: (mid level clinical)	Dr Harvey is an <i>outstanding</i> clinician and teacher his background includes <i>outstanding</i> training experience his dedication to patient care and <i>outstanding</i> teaching attributes one of the <i>finest</i> clinicians I have known Dr Harvey is obviously a <i>superb</i> teacher Dr Harvey is an <i>outstanding</i> internist and cardiologist

Notice the repetition of the same standout adjectives in the above groupings as well.

Repetition in language is an intriguing feature. In written language it has been studied most in the context of poetry, and can be seen as a simple form of parallelism. In the last years of his life Jacobson was fascinated with parallelism in all

forms of language. Linguists who work with oral language have long accorded repetition respect, from Hymes' work on repetitions and contrasts as a definition of structure, to Bollinger's on prepatterned expressions. (See Tannen, 1989: 36–97, for a thorough summary of discourse work on repetition.) More recently, Ferrara (1994) worked on repetition in psychotherapeutic discourse, including echoing, mirroring, and repeating. All studies note the function of repetition as a cohesive device, and rhetoricians note its persuasive value. However, we had not originally considered repetition as a feature for analysis for letters of recommendation, under the assumption that repetition would tend to 'bleed' meaning, that is, multiple uses would drain particular words of their power. This did not turn out to be the case.

For example, in any academic environment the term 'research' is highly charged. Advancement often hinges on getting research published in appropriate journals, or today on securing large research grants that pay the university generous overhead amounts. Again we found that roughly the same percentage of letters for women (48%) as for men (50%) mentioned 'research' at least once. Tabulating *multiple mentions of 'research'* within letters produced another picture however.

Within letters, 35 percent of those for women that mentioned 'research' at least once, mentioned it multiple times. In contrast, 62 percent of the letters for men that mentioned 'research' at least once, mentioned it multiple times. The range of numbers of repetitions varied too, from 2 repetitions to 7 at most in letters for women, whereas among letters for men, many had 4 repetitions, with others ranging as high as 11 repetitions.

There was also an interesting difference in the way in which 'research' was portrayed in the letters. Some focused on the particular research of the applicant, some on general abilities of the applicant in research design, whereas others discoursed on the contribution of the applicant to the research environment of the laboratory or department. Ideally, an applicant would have letters that presented all these perspectives. The following excerpts exemplify general research abilities and contribution to the research environment. They are drawn from a letter for a female researcher who had among the strongest letters for females in the corpus. Notice as well the point about establishing her own research program – an essential ability for a serious researcher.

TEXT 13. STATUS TERM 'RESEARCH' IN TWO PERSPECTIVES

[one paragraph precedes]

Sarah is an extremely diligent and productive scientist. She is a superb experimentalist – very well organized, thorough and careful in her approach to *research*. She knows what questions to ask and how to design sound experiments to answer them. She is perhaps unusual in being so attentive to the fine details of her *research*, while at the same time very much attuned to the broader aspects of her work and its medical implications. During her time in Livingood's group, she has become

increasingly independent, and has been working on her own independently funded project for several years. At this point, she is clearly ready to establish her own *research* program.

... She also writes well, and has authored several review articles in addition to her numerous *research* publications. As part of Livingood's large *research* group, Sarah has been a good team player who is sincerely interested in helping others in the group to succeed. Her thoughtfulness and caring for others certainly added greatly to the atmosphere of the lab while I was there.

... I am certain that Sarah will be an extremely productive and valuable member of a university or medical school *research* department, and I highly recommend her to you.

A concern with research described as contribution to the broader research environment is that it may become a form of service, well appreciated but rarely grounds for promotion.

As with the status term 'research', there was also a contrast in the numbers of multiple text lines that contained *scientific terminology* between letters for women and letters for men. (We defined scientific terminology as words and phrases that go beyond reference to well-known organs and which are not found in standard dictionaries.) Scientific terminology can be another way of referring to research, but at the same time it is a broader category as it can be used to refer to clinical work or even teaching. In letters of recommendation it can be seen as a collusive feature, for the recommender knows that the evaluator, unlike the rest of society, understands such language.

A quarter of the letters for women used some form of scientific terminology, whereas a third of the men's letters used it. In terms of repetition of text units, that is lines of a letter with scientific terminology, here for the women's letters it was 1.9 text lines per letter, whereas for the men it was 3.3 lines per letter. Some would not call this repetition in that it is not necessarily exact words or phrases repeated. Pragmatically, however, use of scientific terminology functions both as a sign of knowledge of detail on the part of the recommender, as well as support for the significance of the applicant's work in that it warrants extended description in this restricted form.

Finally, another new category, keyed by repetition, evolved from experimental playing with concordance programs and their results. Not surprisingly, we found that 'her' and 'his' were high on the list of often-used words in the letters of recommendation. And we found that the overall usage of *possessive phrases referring to the applicant*, both pronominal and nominal as in 'his career', 'William's career'; 'her teaching', 'Sarah's teaching', was similar for letters for men and for women at 1.6 occurrences for every 10 lines of text. Further, there is a sense in which the presuppositional phrase, 'his research', is more closely associated with him than 'the research he conducts'. As we worked with the objects of these possessives, interesting patterns began to emerge.

But first, in surveying such third-person possessive phrases referring to the applicants, we felt the need to limit the data in two ways. First, we wanted equal

numbers of letters, so given that there were 89 letters for females, we took a random 89 letters for males in the database. Second, we wanted similar numbers of higher status letters. We defined these as of similar rank. Therefore, the letters for the full professor, who is male, were excluded, as were letters for associate rank beyond the numbers of such letters for female applicants. Then, after making lists of exact possessive phrases with their objects, we grouped these into semantic categories. Because the 89 letters for female applicants were about 5/6 or 84 percent as long as the random 89 letters for male applicants, we focus more on differential rank-ordering of semantic categories within genders than on contrasts in numbers of examples across genders, although we note these as well on the left side of Figures 3 and 4.

The most common semantic categories of objects of possessive phrases for female applicants were: 'her training', 'her teaching', and 'her application' (for the position). In contrast, for male applicants the most common semantic categories of objects of possessive phrases were: 'his research', 'his skills and abilities', and 'his career'. By this measure, the women are portrayed more as students and teachers, whereas the men are portrayed more as researchers and professionals. At a conference in Rhode Island when I (FT) presented this, a woman rose from her seat and said loudly, 'Yes'. It turned out she was a physician; through her efforts we were able to gain access to a second set of letters of recommendation for future study.

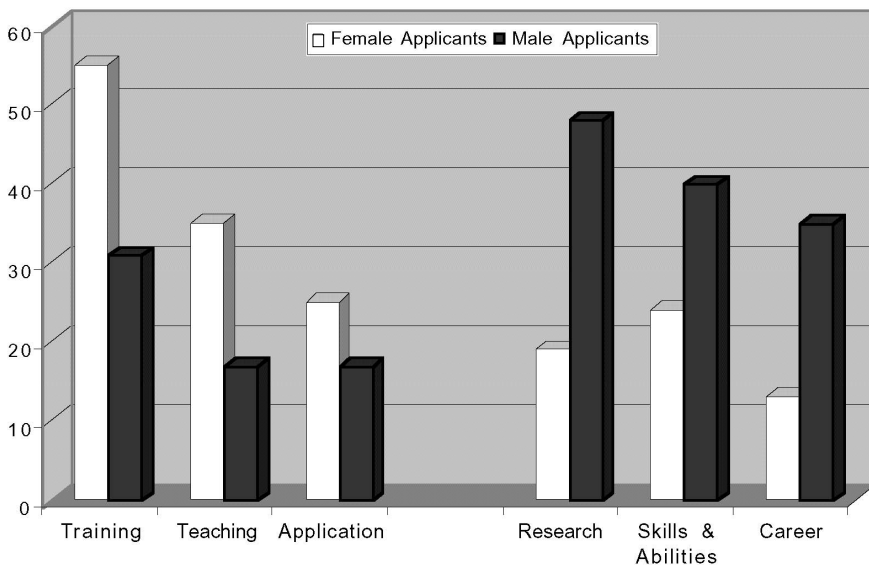


FIGURE 3. *Semantic realms following possessives. Rank-ordered within gender sets from equal numbers of letters 'her training'; 'his research'*

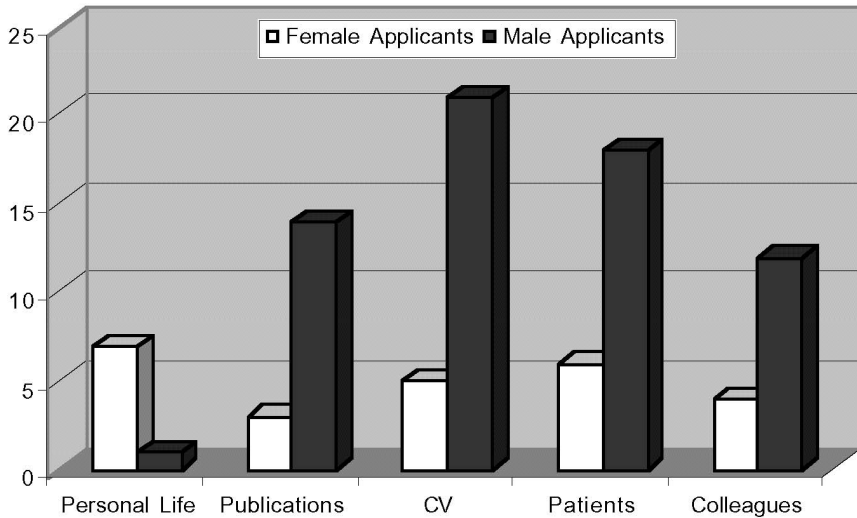


FIGURE 4. *Distinctive semantic realms following possessives. Greatest contrasts across genders in equal number of letters 'her personal life'; 'his publications'*

There is also another contrast that we were able to develop using the possessive phrases grouped by semantic realm. Here we sought the semantic realms that were most different by gender, keeping in mind that the women's letters were 84 percent the length of the men's.

Because the letters for men are 16 percent longer, there should be more references to 'personal life' than there are to women's, were this not a gendered realm. The number of references to 'his publications' appears enough greater to suggest that this is definitely more characteristic of letters for men. Could the much higher relative number of references to 'his CV' (curriculum vitae or résumé) suggest that the recommenders actually looked at the male applicants' CVs more? The greater number of references to 'his patients' is intriguing. Perhaps reference to women's 'interpersonal relations' and 'clinical skills' encompasses patients as well. The specificity here, however, is more compelling for males. Finally, the greater number of adjusted mentions of 'his colleagues' is something we want to research further. A generalization could be that the men are portrayed more as professional colleagues, whereas the women are seen more as students and teachers. When thinking of the potential for future advancement this is disquieting.

Examples of letters of female and male medical faculty by research directors

As a way of summarizing some of the many facets of this research, consider the following letters, both for clinical positions written by recommenders who were research directors of the applicants.

TEXT 14. EXAMPLE OF LETTER OF RECOMMENDATION FOR MALE APPLICANT

Dear Dr Koop:

William Harvey MD, has been a Postdoctoral Scholar in Pediatric Orthopedic Oncology at Northsouthern School of Medicine. During his time at our institution Bill actively *participated* in our research and educational activities. During his last year at Northsouthern he also *trained* in Pediatric Orthopedic Surgery.

Dr Harvey's research activities focused on the use of three dimensional contrast CT scanning for the assessment and quantification of blood flow and metabolism in solid bone tumors in the long bones of pediatric patients. An early study established a correlation between patterns of blood flow and tumor metabolism and the long term outcome of patients with solid tumors of long bones, while a second study . . . [+9 lines]

Some of this work has already been published in first rate orthopedic journals while other parts are currently under review by journals.

Bill's accomplishments are important for they demonstrate and underscore the clinical significance of altered patterns of blood flow and tumor metabolism for patient mortality and morbidity as well as for defining their implications for the management of patients with expected very poor prognosis for limb salvage. *His accomplishments* have been recognized locally by having been awarded two consecutive grants by the Greater Affiliate of the American Society for Orthopedic Surgeons. We believe it is also fair to state that *his accomplishments* have received, at least to some degree, national recognition as evidenced by several job offers.

Overall, we have found Bill to be a highly intelligent and hard working young man. He *communicates and collaborates* well with his peers and supervisors. On a more personal side, it saddened us to see him leave our institution yet we were not able to retain him for lack of funds. We believe that Bill is a promising, highly productive and creative young researcher who undoubtedly will become an independent and innovative investigator. Therefore, it is with considerable enthusiasm that we support unequivocally the proposed appointment to Assistant Professor of Pediatric Orthopedic Surgery and Oncology.

Sincerely,
Charles Lewis, MD
Chief, Dept. of Pediatric Oncology

In the above letter for William Harvey (Text 13), notice that what is not necessarily a title is listed as such, 'Postdoctoral Scholar in Pediatric Orthopedic Oncology', and mention is made of the rank for which he is applying, 'Assistant Professor'. The body of the letter is chock full of specifics of focus and record, including 13 lines of description of his research, some of which we omitted because of space considerations. In the third paragraph note the three repetitions of 'his accomplishments'. He is portrayed as agent in: 'Bill actively participated', 'he also trained', 'He communicates and collaborates well'. It could also be argued that 'Dr Harvey's research work focused on', and 'an early study established', show sociological agency if not linguistic agency (van Leeuwen, 1996: 32). The only negative refers to the recommender's own institution's inability to retain him.

TEXT 15. EXAMPLE OF LETTER OF RECOMMENDATION FOR FEMALE APPLICANT

Dear Alfred:

I am writing to you a letter of recommendation for *my good friend*, Dr Sarah Gray MD. As you probably know, I've known Sarah for about 7 years. I watched her career development while working at Northsouthern University, her presentations and prize winning events at the Academy of Pediatrics while a resident at Northsouthern and then her fellowship year with myself and Dr Dolittle in St. Louis some years ago.

Without any doubt, I am struck with Sarah's integrity. She is *totally intolerant of shoddy research work* and any work which has a hint of padding or error. Additionally, while working with her in St. Louis, I was able to watch her surgical skills. I felt she had been very well trained surgically in St. Louis but she has a *slight touch of lack of confidence* at times which I feel Sam Livingood is well aware of and will carefully work with Sarah regarding any matters like that during her clinical practice at Centvingtcing.

I feel the addition of Sarah to the faculty of Centvingtcing University and particularly to the Department of Cardiology of Children's Hospital to be a tremendous plus for that center. Her research work over the last few years has been 'top drawer' and virtually unchallengeable. I can only predict a great future for *this lady* and I am delighted that she has returned to further her career.

If you have any further questions about Sarah I'd be happy to discuss it with you.

Sincerely yours,
Charles Lewis, MD
Chief, Division of Cardiology

In the letter for Sarah Gray, notice the ambiguities of 'my friend', and 'she is totally intolerant of shoddy research'. And there is a singular lack of specificity in regard to her research. What is her research on? There is also paternalism and negative language in her 'slight touch of lack of confidence'. This can be seen as a way of bonding of recommender with the gatekeeper that works to the detriment of the applicant. The gendered naming is awkward – 'I can only predict a great future for this lady.' Why not 'for this cardiologist?' And unlike Bill, Sarah has a previous title, 'Head of Pediatric Cardiology', that is not mentioned in this letter, nor is there mention that she is applying for an Associate Professorship. Nowhere in this letter is she presented as the agent of her work.

Discussion

Which of the two above applicants is portrayed as more desirable as a colleague? Which is more likely to be promoted in the future? Which gives the better first impression? Recall that such letters of recommendation often arrive before the candidate steps in the door. And these letters stay in the file of the new faculty member. Further, if these letters are at all representative, it is not surprising that women receive fewer grants and advance at a much slower rate than men in

academic medicine. These letters and the findings of this research provoke many questions.

Briefly, in our extensive data we found that letters of recommendation for medical faculty differ in length in that a higher percentage of letters for women are very short (10% fewer than 10 lines), whereas a higher percentage of letters for men are very long (8% over 50 lines). Letters for female applicants are lacking in basic features to a statistically significant greater degree, and letters for women include *doubt raisers* at a statistically significant higher rate that is double the rate for males. We also found that there is a greater frequency of reference to terms of praise and the status category of 'research' in the letters of recommendation for men, as opposed to the letters for women. Finally, we found that when the possessive phrases relating to the applicant are grouped semantically, as a group the women's refer most to 'her teaching', 'her training', and 'her application'; whereas those for men as a group refer most to 'his research', 'his skills and abilities', and 'his career'.

Do these findings accurately reflect the applicants? Are the women less prepared? Have they done less research? Is medical training so stressful for women (Bowman and Allen, 1990) that they stay 'below the radar' to try to avoid harassment by teachers and fellow students (Tannen, 1994: 258), and competition with fellow students, and thus have fewer accomplishments and titles to be reported? Or are the female applicants of this data hired by the medical school precisely because they do not threaten the largely male gatekeepers?

Or do these findings reflect more the assumptions and prejudices of the largely male recommenders who are not used to women in potentially comparable high status positions? Do the largely male recommenders have little invested in the female applicants and therefore fail to exert themselves to write more complete letters?

Or as research in social and cognitive psychology has shown, have the recommenders merely fallen back on common societal gender schema in which women are not expected to have extensive accomplishments or even abilities in competitive professional work. That is, recommenders have unknowingly used selective categorization and perception, also known as stereotyping, in choosing what features to include in their profiles of the female applicants. Research in social psychology has found that such reliance on gender schema is more likely the more hierarchical the organization (Fiske, 1987: 43), and certainly American medical colleges are highly hierarchical. Such reliance on gender schema instead of individual description is also more likely, according to research, when a group is a minority in the institution (Valian, 1998: 141). In such a situation, members of the group are perceived first as a minority – here as women – and only secondarily as their profession – academic physicians and researchers. Finally, research in cognitive psychology has also found that when people cannot devote full attention to a task, they tend to rely more on gender schema (Valian, 1998: 308). In our interviews with academic physicians as well as in published accounts, it is clear that academic physicians have multiple, competing, and often unpredictable demands on their time.

Or is there something skewing our findings? The great advantage of working with naturalistic data – all the letters of successful applicants for three years – is that none were excluded for unknown reasons. Indeed, we have a picture of hiring for this institution for this period. And we assuredly have a picture that resonates with several members of the Committee for Hiring and Promotion. But a constraint is that certain practices, like hiring more men in research positions, are not controlled for. It is even difficult to know for sure which positions are research and which are clinical from the letters. For good clinicians also do research, particularly in their training time, and as the Head of Personnel told us, there are 24 faculty classifications of positions and recommenders often do not note them correctly. But even in singling out what appear to be research positions with no clinical component, the median length of letter for females was 289 words, whereas the median length for males was 336 words.

In a future study we would like to study letters of equal numbers of clinical and research applicants at equal ranks. The problem here, however, is that with current hiring trends the likelihood of finding letters of recommendation for female applicants for full professor positions is slight. Even with assistant and associate professor positions, it will take several years to accumulate letters for similar numbers of successful female research applicants as can be collected for successful male research applicants in one year.

The main contribution of this study is systematic methods for analyzing letters of recommendation, particularly for identifying categories that may not be mentioned in a letter but whose absence or infrequency is telling. Here knowledge of the context of a field, of what is of high status, in this case 'research', is an obvious first step, for language needs to be understood as constructed in communities of practice (Eckert and McConnell-Ginet, 1992: 487). Consideration of frequency of reference to such terms can be seen as a form of persuasiveness. Indeed, much research on letters of recommendation has neglected the vital feature of persuasion. Further, the category of *letters of minimal assurance*, that is, letters lacking in mention of basic features, is a new category in research of letters of recommendation. The expansion of 'negative language' to the broader category of *doubt raisers*, that include negative language, hedges, potentially negative, unexplained, faint praise, and irrelevancies, gives greater precision to the field. The use of *doubt raisers in apparent commendation* links this research to Critical Discourse Analysis of racist and prejudicial texts. Finally, the grouping of semantic categories of objects in possessive phrases referring to applicants, *semantic purses* of a group, is a contribution to the field. It provides a broader composite image of groups of applicants, as well as differences between groups. Comparing lists of such categories allows a signal way of noting absence or infrequent reference to a category for one group, that may be identified by its presence and frequency in letters for another group.

In conclusion, the response to the question from the member of the Executive Committee for Hiring and Promotion that triggered this research is that the letters for successful female applicants were indeed systematically different from

those for successful male applicants. Affirmative action programs⁶ need to be cognizant of this research and incorporate its findings in their workshops. On a personal level, we hope this study stimulates recommenders to edit their own letters for unwarranted signs of gender schema and omissions of essential topics. We also encourage applicants to provide recommenders with readily usable descriptions of their research. More generally, we hope that this study stimulates future systematic studies of gatekeeping practices, particularly those that realize that gatekeeping does not stop at the door, but continues throughout professional life.

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NOTES

1. This study of the peer-review process of Sweden's Medical Research Council, one of the main funding agencies for biomedical research in Sweden, is remarkable in several ways. It was conducted in Sweden, ranked by the United Nations as the leading country in the world with respect to equal opportunities for men and women, and it is the first analysis based on actual peer-review scores, although the researchers had to go to court to obtain them. Its findings show that female applicants had to be 2.5 times more productive in terms of comparable publications to be accorded the same scientific competence score as male applicants. Applicants affiliated with the peer-review committee also received higher scientific competence scores than those of the same gender with equal productivity. (The particular peer review was of 114 applicants: 52 women and 62 men, of whom 20 were awarded postdoctoral fellowships: 4 women and 16 men.) The study 'strongly suggested that peer reviewers cannot judge scientific merit independent of gender' (Wenneras and Wold, 1997: 341).
2. We gratefully acknowledge Amy Sheldon for calling our attention to this important work, *Why So Slow? The Advancement of Women*, by cognitive psychologist, Virginia Valian.
3. Gender schemas (by convention not schemata) are defined by Valian (1998: 2) as 'a set of implicit, or nonconscious hypotheses about sex differences that play a central role in shaping men's and women's professional lives . . . (they) affect our expectations of men and women, our evaluations of their work, and their performance as professionals.' Valian sees stereotypes as one sort of such schema, but prefers the term 'schema' as being more inclusive, and less necessarily negative, acknowledging that it is a natural human activity to make hypotheses in making sense of the world. She sees gender schema as similar to a belief that the earth is flat; its naturalness does not guarantee its truthfulness. Only thinking the earth is flat will not make it so, whereas the cultural elaboration of gender schemas can lead to the creation of real sex differences (Valian, 1998: 118). Three processes work to entrench gender schemas in our minds: their

responsiveness to physical differences, our tendency to reason from extremes, and our tendency to see the sexes as dichotomous and gender traits as mutually exclusive (Valian, 1998: 119). Where Stokoe and Smithson (2001: 239) argued that conversational analysts tend to ignore culture and common-sense knowledge, we would add that this also involves ignoring gender schemas.

4. To preserve anonymity, the medical school to which the applicants were applying is referred to as 'Centvingtcing University' as there were 125 medical schools in the US at that time. Similarly, all letters were addressed to Dr Alfred Koop, a made-up name recalling the former Surgeon General; all female applicants are referred to as Sarah Gray, the first woman to graduate in surgery from the University of Edinburgh and, a great-great-aunt of Frances Trix; and all male applicants are referred to William Harvey, who first published on the circulation of the blood in 1628. The hospitals are called 'Mrahonod', that is 'do no harm' spelled backwards; the applicants all come from 'Northsouthern University'; all trained in St Louis, a centrally located American city; and all male recommenders are named 'Charles Lewis'. We have also altered medical specialties to guard anonymity.
5. The special knowledge of the problems of the applicant could be seen to raise the credibility of the recommender. Another, more obvious example of 'apparent commendation' was found in a letter for an African American male applicant. 'He was a very good student, although not the best I saw in my 29 years there.' Here it is the experience of the recommender, not the ability of the student that is actually touted. Thus 'apparent commendation' builds on van Dijk's conceptualization, in that 'semantic moves of apparent denial or concession may be used in a combined strategy of positive self-presentation and negative presentation of the Other' (1993: 35).
6. An affirmative action program for female faculty in medical schools, conducted at Johns Hopkins University in the early 1990s (Fried et al., 1996), worked almost exclusively with women, setting up monthly meetings so they would know better what was expected for promotion, and addressed mentoring, but neglected to involve men in understanding how gender schema would affect evaluators in reasoning and judging (Valian, 1999: 320).

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