

Institutional-level Contributors to Inequality:
The Existence and Impact of Gendered Wording within Job Advertisements

by

Danielle Gaucher

A thesis

presented to the University of Waterloo

in fulfillment of the

thesis requirement for the degree of

Doctor of Philosophy

in

Psychology

Waterloo, Ontario, Canada, 2010

© Danielle Gaucher 2010

Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

The present research demonstrates a novel institutional-level contributor--that is, gendered wording used in job recruitment materials--that serves to perpetuate the status quo, keeping women underrepresented in traditionally male-dominated occupations. Chapter 1 provides an overview of the literature on barriers to women's inclusion in traditionally male-dominated fields. Chapter 2 demonstrates the existence of subtle but systematic wording differences within a randomly sampled set of job advertisements. Results indicated that job advertisements for male-dominated areas employed greater "masculine" (e.g., challenge, analyze, lead) than "feminine" wording (e.g., support, understand, interpersonal; Studies 1 and 2). In Chapter 3, I tested the consequences of these wording differences across four experimental studies. When job ads were constructed to include more masculine than feminine wording, people perceived fewer women within these occupations (Study 3) and, importantly, women found these jobs less appealing (Studies 4-6). Men showed the opposite pattern, preferring jobs with masculinely-worded ads to the femininely-worded jobs (Study 4-5). Results confirmed that perceptions of belongingness (but not perceived skills) mediated the effect of gendered wording on job appeal (Studies 4 and 6). The system-justifying function of gendered wording and implications for gender parity and theoretical models of inequality are discussed in Chapter 4.

Acknowledgements

I am very thankful for Aaron Kay's guidance, insight, and support over the last five years. His encouragement and expertise has been invaluable to both this research paper and my intellectual growth.

Thank you also to my thesis readers, Steve Spencer and Richard Eibach, for their time reading and commenting on this dissertation. Also, thank you to Justin Friesen, a close collaborator on this line of research, and a friend who continues to inspire.

Finally, I would like to thank all of the Social Division professors, especially Joanne Wood, John Holmes, and Mark Zanna, for their advice and encouragement over the years.

I am grateful for the financial support from the Social Sciences and Humanities Research Council of Canada and the University of Waterloo.

Table of Contents

Author's Declaration	ii
Abstract	iii
Acknowledgements	iv
Table of Contents	v
List of Figures	vii
List of Tables.....	viii
Chapter 1: Introduction	1
Job Advertisements as Institutional-Level Contributors to Inequality.....	3
The Nature of Subtle Wording Differences in Job Advertisements.....	5
Gendered Wording as a Cue of Belongingness.....	7
Overview of the Present Research	8
Chapter 2: The Existence of Gendered Wording	9
Study 1: Wording Differences in a Public Sample of Online Job Ads	9
Method.....	9
Results.....	11
Study 2: Wording Differences in a University Sample of Co-op Job Ads	19
Method.....	20
Results.....	20
Discussion: Studies 1 and 2.....	28
Chapter 3: The Effect of Gendered Wording Differences on Individual-Level Appraisals	30
Study 3: Diversity Perceptions.....	30
Method.....	30
Results.....	32
Study 4: Job Appeal and Belongingness.....	33
Method.....	34
Results.....	35
Discussion of Study 4.....	38
Study 5: Job Appeal and General Skill	39
Method.....	40

Results.....	41
Discussion.....	42
Study 6: Belongingness versus Personal Skills.....	42
Method.....	43
Results.....	43
Chapter 4: General Discussion.....	46
Implications for Social-Psychological Theories of Inequality.....	47
Origins of Gendered Wording Effects	48
Future Directions and Limitations.....	52
Concluding Remarks	55
Appendix A: List of Masculine and Feminine Words Coded.....	56
Appendix B: Job Advertisements used in Studies 3-6	58
Appendix C: Dependent Measures used in Studies 3-6	61
References	62

List of Figures

Figure 1. Mean Percentage of Gendered Wording as a Function of Occupation in Study 1....12

Figure 2. Mean Percentage of Gendered Wording as a Function of Faculty in Study 2.....21

Figure 3. Job Appeal as a Function of Gendered Wording and Participant Sex.....36

Figure 4. Mediation Model tested in Study 6.....45

List of Tables

Table 1.	Composition of Coded Advertisements in Study 1.....	10
Table 2.	Presence of Specific Masculine Words in Job Ads Within Male-dominated Occupations.....	14
Table 3.	Presence of Specific Masculine Words in Job Ads Within Female-dominated Occupations.....	15
Table 4.	Presence of Specific Feminine Words in Job Ads within Female-dominated Occupations.....	17
Table 5.	Presence of Specific Feminine Words in Job Ads within Male-dominated Occupations.....	18
Table 6.	Presence of Specific Masculine Words in Job Ads within Male-dominated Faculties.....	22
Table 7.	Presence of Specific Masculine Words in Job Ads within Female-dominated Faculties	24
Table 8.	Presence of Specific Feminine Words in Job Ads within Female-dominated Faculties.....	26
Table 9.	Presence of Specific Feminine Words in Job Ads within Male-dominated Faculties.....	27
Table 10.	Perceived Gender Diversity within Occupations as a Function of Participant Sex.....	33
Table 11.	Belongingness as a Function of Participant Sex and Job Type.....	37

CHAPTER 1: INTRODUCTION

Despite widely touted egalitarian ideals, women in North America continue to be underrepresented in many areas of employment including high levels of business, the natural sciences, and engineering. In Canada, for example, fewer than 20% of engineering undergraduates and only 9% of registered professional engineers are women. Moreover, contrary to popular belief, the numbers of women entering Canadian undergraduate engineering programs has been in decline since 2000 (Engineers Canada, 2010). A similar picture emerges in the United States. Women comprise only 2.4% of Fortune 500 Chief Executive Officers (Catalyst, 2008a), 20% of full professors in the natural sciences (Catalyst, 2008b), and 11% of engineers (U.S. Department of Labor, 2007). Why do women continue to be underrepresented in these areas?

Individual-level factors that serve to keep women out of male-dominated areas are well-documented. Such factors manifest within individuals in the form of beliefs, attitudes, and other motivated tendencies. Injunctification--people's tendency to defend the status quo leading them to construe whatever currently is as natural, desirable, and the way that things ought to be (Kay & Zanna, 2009; Kay et al., 2009)--is an individual-level, system-justifying process that can account, at least in part, for women's continued underrepresentation in male-dominated areas. For example, female participants who learned about prevailing inequality (i.e., women's underrepresentation in the domains of business and politics) subsequently defended this inequality as desirable and natural – an effect that was most pronounced when system justification concerns were experimentally heightened (Kay et al., 2009).

Likewise, benevolent sexist beliefs (Glick & Fiske, 1996, 2001a, 2001b) and complementary (see Kay et al., 2007) or compensatory (see Kay, Czapliński, & Jost, 2009;

Kervyn, Yzerbyt, Judd, Nunes, 2009) stereotypes are especially well-suited to justify gender inequalities. Endorsing the warm-but-incompetent stereotype of housewives justifies women's domestic role and exclusion from the workplace (Cuddy, Fiske, & Glick, 2004; Fiske, Cuddy, Glick, & Xu, 2002). Similarly, the competent-but-cold stereotype of working women has been used as justification for keeping women out of (male-dominated) management positions (Fiske, Bersoff, Borgida, Deaux, & Heilman, 1991; Phelan, Moss-Racusin, & Rudman, 2008; Rudman, 1998; Rudman & Glick, 1999, 2001).

There is much less psychological research, however, documenting the institutional-level contributors to status-quo maintenance. *Institutional-level contributors* are those that manifest within the social structure itself (e.g., public policy, law). Such contributors are often -- though certainly not always -- so deeply embedded within the social structure that they are overlooked by society at large (Deutsch, 2006). But despite the difficulty of detecting these systematic or institutional factors, their effects on individual-level psychological processes (e.g., attitudes) can be profound (e.g., Sidanius, Liu, Shaw, & Pratto, 1994; Pratto & Esponzoza, 2001; Bem, 1994, pp. 73-79).

In the current research, I identify a novel institutional-level contributor--that is, gendered wording used in job recruitment materials--that serves to perpetuate the status quo, keeping women underrepresented in traditionally male-dominated occupations. Specifically, I investigate whether "masculine" themed words (such as "challenge," "lead," "independent") emerge within job advertisements in male-dominated areas and whether the mere presence of these "masculine" words dissuade women from applying to the area because they cue that women do not belong.

Job Advertisements as Institutional-Level Contributors to Inequality

Women's attrition in male-dominated fields, it has been proposed, spikes at specific points along the career path, such as between one's MSc/MA and Ph.D., or at hiring and promotion (Holmes & O'Connell, 2007; Tesch, Wood, Helwig, & Ann, 1995). In the geosciences, for example, 38% of Ph.D. graduates but only 26% of assistant professors are women (Holmes & O'Connell, 2007). It is plausible, then, that institutional-level barriers to women's participation in male-dominated domains occur most prominently at certain critical points. In the present research I focus on job recruitment as one of those critical points.

Over 30 years ago, Bem and Bem (1973) investigated how job advertisements that overtly specify a preference for male applicants discouraged women from applying. They found that explicit references to men as candidates for specific jobs and placing ads in sex-segregated newspaper columns discouraged men and women from applying to opposite-sex positions. In the first of two seminal studies, participants were presented with a series of job advertisements that were either sex-biased (i.e., made explicit reference to men as candidates for traditionally male dominated jobs such as "lineman" and women as candidates for traditionally female jobs such as "telephone service operator"), unbiased (i.e., made reference to both men and women as candidates), or sex-reversed (i.e., referred to women as ideal candidates for the typically male dominated jobs and men as ideal candidates for the traditionally female jobs). The results were clear: Women were more interested in male-dominated jobs when the advertisements were unbiased, making reference to both men and women as candidates, than when the advertisements only made reference to men (Bem & Bem, 1973). Women reported the greatest interest in the male-dominated jobs when the ads were sex-reversed, explicitly referring to women as ideal candidates.

In a second study, female participants were presented with job advertisements from a U.S. newspaper, and asked to rate their preference for each job. Half of the participants read job advertisements precisely as they appeared in the paper--sex segregated under “Jobs-male” and “Jobs-female” columns. The other half read identical ads but this time the ads were integrated and listed alphabetically with no sex labeling. Women preferred male-dominated jobs when they were presented in the integrated rather than sex-segregated columns. Notably, this finding emerged despite a disclaimer on both sets of ads citing that “...job seekers should assume that the advertiser will consider applicants of either sex in compliance with the laws against discrimination” (Bem & Bem, 1973, p. 15).

This type of bias in job advertisements, however, likely no longer exists. On the heels of United States Civil Rights legislation (Title VII, 1964) deeming this practice unconstitutional, and the advent of the Equal Employment Opportunity Commission, explicit sex-segregation of advertisements “abruptly” ended by 1973 (Pedriana & Abraham, 2006).¹ As a result, it is no longer the case that job advertisements deter men or women from applying to specific positions through explicit requests for “men” or “women” or use of pronouns such as “he” or “she.” To many, this suggested this problem was solved.

However, although such explicit references to men or women as ideal candidates have largely disappeared from the social landscape, it is possible that the gender of the ideal candidate

¹ In Canada, legislation governing sex discrimination is outlined in the Human Rights Act (1977) and Charter of Rights and Freedoms (1982). Perhaps most relevant to the issue of sex-segregated job advertisements is Chapter 33, Section 8, of the Human Rights Act which states that, “It is a discriminatory practice (a) to use or circulate any form of application for employment, or (b) in connection with employment or prospective employment, to publish any advertisement or to make any written or oral inquiry that expresses or implies any limitation, specification or preference based on a prohibited ground of discrimination.” Prohibited grounds of discrimination include race, national or ethnic origin, colour, religion, age, sex, sexual orientation, marital status, family status, disability and conviction for which a pardon has been granted.

is still conveyed, but more subtly, through wording in the advertisement that reflects broader cultural stereotypes about men and women. In other words, even in the absence of explicit gender-biased directives, *masculine and feminine themed words may be differentially present in advertisements for jobs that are typically occupied by males versus females, and the mere presence of this wording difference may be sufficient to exert important downstream consequences on individual-level appraisals of the relevant jobs.*

The Nature of Subtle Wording Differences in Job Advertisements

There is an established literature documenting widely-held gender stereotypes (e.g., Glick & Fiske, 1996) and differences in the way men and women use everyday language (e.g., Pennebaker, Mehl, & Niederhoffer, 2003). On the whole, women are perceived as more communal and interpersonally oriented than men, whereas traits associated with leadership are more readily ascribed to men than women (Eagly & Karau, 1991; Heilman, 1983; Rudman & Kilanski, 2000). Moreover, gender differences in the linguistic style of everyday speech are well documented (Carli, 1990; Lakoff, 1975). Women, for example, use a more communal style of speech than men (Brownlow, Rosamond, & Parker, 2003; Haas, 1979; Leaper & Aryes, 2007) and make more references to social and emotional words (Newman, Groom, Handleman, & Pennebaker, 2008). Language use can also differ based on the gender of whom one is writing about: an analysis of recommendation letters for university faculty jobs found that writers used more "standout words" (e.g., outstanding, unique) when describing male than female candidates, suggesting that language use can unintentionally reflect stereotypical gender roles (Schmader, Whitehead, & Wysocki, 2007).

Drawing from these literatures I reasoned that gendered wording, evident within broader cultural stereotypes and the linguistic styles of men and women, may emerge within job

advertisements. I predicted male-dominated occupations would contain a greater proportion of "masculine" words in their job ads than "feminine" words, whereas female-dominated occupations would likely contain a greater proportion of "feminine" than "masculine" words. Arguably most, if not all, words in the English language have gendered associations (that is, they could be associated with or classified as "masculine" or "feminine"). My focus in the current work, however, is on gendered wording that is limited to the communal-agentic distinction—words that have been identified in previous social-psychological literature as strongly associated with either masculine or feminine gender stereotypes. For example, a job advertisement from a male-dominated occupation might emphasize "providing leadership on new building projects," whereas an ad from a less male-dominated occupation might emphasize "Cooperating on new building projects, providing advice." Likewise, a company within a male-dominated occupation may be searching for someone to "Analyze real estate markets to determine appropriate selling prices for properties," whereas an ad in a less male-dominated occupation might emphasize "Understanding real estate markets to establish appropriate selling prices for properties" in their search. In both cases the job responsibilities are similar, but the phrasing uses a more or less masculine wording. Crucially, I also predicted that such differences in wording, if they do in fact exist, may exert important effects on individual-level judgments that facilitate the maintenance of inequality. Just as other subtle variations in language can have a causal effect on people's behavior and attitudes (e.g., Boroditsky, 2001; Fitzsimons & Kay, 2004; Hoffman & Tchir, 1990; Maass, 1999; Maass, Salvi, Arcuri, & Semin, 1989; Newcombe & Arnkoff, 1979; Reitsma-van Rooijen, Semin, & van Leeuwen, 2007), subtle variations in the gendered wording used in advertisements may affect people's perception of jobs, such that men and women will find jobs described in language consistent with their own gender as most appealing precisely

because it signals to people who belongs in the occupation. Specifically, I hypothesized that masculine wording likely signals that there are many men in the field and alerts women to the possibility that they do not belong, whereas feminine wording signals that there are relatively many women in the field, affirming women's belongingness.

Gendered Wording as a Cue of Belongingness

There is ample evidence to suggest that belongingness—feeling that one “fits” in with others within a particular domain—affects people's achievement motivation specifically, and engagement within a domain more generally, and that it can be signaled by cues in the environment. Walton and Cohen (2007) provide some of the most compelling evidence. They found that heightening Blacks' and Latinos' sense of belongingness in academia by normalizing their fears about not fitting in increased Blacks' and Latinos' engagement with school, improving their GPAs and reducing dropout rates to levels comparable to their White counterparts.

Other research has focused more specifically on the types of cues that signal safety (i.e., belongingness) for members of underrepresented groups (e.g., Cheryan, Plaut, Davis, & Steele, 2009; Davies, Spencer, Quinn, & Gerhardstein, 2002; Murphy, Steele, & Gross, 2007; Purdie-Vaughns, Steele, Davies, Ditlmann, & Crosby, 2008). Most relevant to the current research, Purdie-Vaughns and colleagues (2008) demonstrated that cues that signal devaluation of certain social identities (i.e., low minority representation in company newsletters combined with an explicit mention of a “color-blind” philosophy) leads to domain disengagement (i.e., less trust in and comfort with the company), suggesting that belongingness can greatly affect people's approach towards a particularly domain.

Certainly, other factors also influence people's propensity to approach a domain. For example, the skills required for the job and other practical considerations, such as geographical

location, factor into one's decision to apply. People are more likely to apply to jobs that they think they have the skills for, than ones they do not. But given the importance of belongingness for domain engagement specifically (Walton & Cohen, 2007) and psychological well-being more generally (Baumeister & Leary, 1995; Ryan & Deci, 2000), I expected anticipated feelings of belongingness (as cued by gendered wording) to predict job appeal independent of people's perception of their own skill for that job.

Overview of the Present Research

The current research has three main aims. The first goal, which is addressed in Chapter 2, is to empirically investigate whether gendered wording within real job advertisements exists. To investigate this I conducted two large-scale naturalistic studies and, using linguistic software content coded over 4000 job advertisements (Studies 1 and 2). In Chapter 3, I sought to determine the effects of gendered wording on individuals' appraisals of occupations. Across a series of studies, I experimentally manipulated the masculine and feminine wording of job advertisements and assessed the causal effects of gendered wording on perceptions of gender diversity, job appeal, and anticipated feelings of belongingness. I also sought to determine the precise mechanism accounting for gendered wording effects on job appeal: I hypothesized that women would find jobs with masculinely worded advertisements less appealing because masculine wording cues lower perceived gender diversity (Study 3) and signals to women that they do not belong in such occupations (Studies 4-6).

CHAPTER 2: THE EXISTENCE OF GENDERED WORDING

To investigate whether gendered wording differences in job advertisements exist, two large naturalistic studies were conducted. In Study 1, 493 randomly sampled online job advertisements from typically male- and female-dominated occupations were coded for the use of masculine and feminine words. I expected that ads within male-dominated areas would contain a greater proportion of masculine than feminine wording, compared to ads within female-dominated areas.

Study 1: Wording Differences in a Public Sample of Online Job Ads

Method

Eleven occupations were selected for coding that varied in their gender composition (U.S. Department of Labor, 2007). I selected occupations, a priori, by choosing occupations that were highly male- or female-dominated and represented in the online job search engine.² Male-dominated jobs were plumber (1% women), electrician (2%), mechanic (2%), engineer (11%), security guard (23%), and computer programmer (26%); female-dominated jobs were administrative assistant (97%), early childhood educator (94%), registered nurse (90%), bookkeeper (90%), and human resources professional (71%). All ads were sampled from the online job sites monster.ca and workopolis.com. Using the job titles as search terms, the first ads listed for each occupation were selected, to a maximum of 60 per occupation.³⁴ This resulted in

² For example, I was interested in coding job advertisements for Police Officers; however, this category of occupation was not represented in the online search engine, with ads only emerging on Police Department Websites.

³ Managerial positions were excluded. All ads from each occupation category were sampled from the same day. Due to differences in the number of ads posted during any given day, the number of ads collected for each occupation varied from 22 to 59.

⁴ The cut-off criterion was determined a priori. A maximum of 60 advertisements was determined a manageable number of advertisements to code.

493 ads (231 representing male-dominated occupations and 262 representing female-dominated occupations, Table 1).

Table 1

Composition of Coded Advertisements in Study 1

Occupation	# of advertisements in study (%)
Male-dominated	231 (47)
Plumber	36 (7)
Electrician	55 (11)
Mechanic	14 (3)
Engineer	59 (12)
Security Guard	22 (4)
Computer Programmer	45 (9)
Female-dominated	262 (53)
Human Resources Professional	45 (9)
Bookkeeper	55 (11)
Registered Nurse	57 (12)
Early Childhood Educator	50 (10)
Administrative Assistant	55 (11)

As a measure of gendered wording, lists of "masculine" and "feminine" words were created using published lists of agentic and communal words (e.g., individualistic, competitive, committed, supportive; Bartz & Lydon, 2004; Rudman & Kilianski, 2000) and masculine and feminine trait words (e.g., ambitious, assertive, compassionate, understanding; Bem, 1974;

Hoffman & Hurst, 1990; Schullo & Alperson, 1984; see Appendix A for a complete list of the words that were coded). This is consistent with previous research that has examined gender differences in language by coding for specific words (Newman et al., 2008). Using content analysis software (Pennebaker, Francis, & Booth, 2007), each ad received masculine and feminine scores, representing the percentage of total masculine and feminine words in each. A score of 1.5% on masculine wording, for example, indicated that 1.5% of the total words in that advertisement were from the list of masculine words. Masculine and feminine scores were correlated but only weakly, $r(493) = .10, p = .03$.

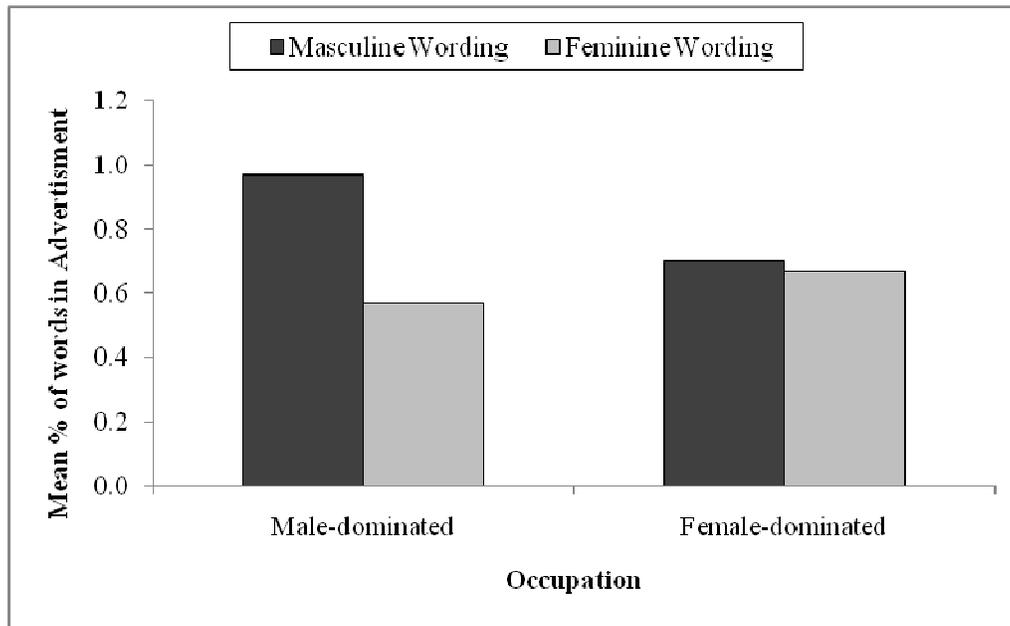
Results

Recall that I expected ads from male-dominated occupations to contain greater masculine than feminine words, compared to advertisements within female-dominated areas. To test for this, I conducted a 2 (Occupation: male-dominated vs. female-dominated) x 2 (Wording: masculine vs. feminine) mixed model ANOVA, with wording as the repeated measure. A main effect of wording emerged, $F(1, 491) = 24.51, p < .001, \eta^2 = .046$, indicating that ads contained more masculine words ($M = .83\%, SD = .70$) than feminine words ($M = .63\%, SD = .75$). The main effect of occupation was marginally significant, $F(1, 491) = 3.02, p = .08, \eta^2 = .008$, suggesting that there tended to be more coded words within ads for male-dominated jobs ($M = .77\%$) than for female-dominated jobs ($M = .69\%$).

Of greater interest, the predicted wording x job type interaction emerged, $F(1, 491) = 18.33, p < .001, \eta^2 = .034$, see Figure 1. Ads for male-dominated jobs contained more masculine than feminine words, $F(1, 230) = 34.91, p < .001, \eta^2 = .131$. This pattern of means was observed within each male-dominated job and was significant in five of the six jobs. In contrast, ads for female-dominated jobs showed no significant differences, $F(1, 261) < 1, \eta^2 = .001$. Also,

masculine words were more likely to emerge within ads for male-dominated jobs ($M = .97\%$, $SD = .81$) than ads for female-dominated jobs ($M = .70\%$, $SD = .55$). There was no difference in the presence of female words across male- and female-dominated occupations.

Figure 1. Mean % of Gendered Wording as a function of Occupation in Study 1



The above analysis confirmed the most straightforward prediction: job advertisements within male-dominated areas contain greater masculine wording than advertisements from female dominated areas. A more nuanced test of the hypothesis, however, is to examine whether differences in wording also vary continuously as a function of the number of men present in the occupation. Are greater numbers of men in any given occupation associated with more masculine and fewer feminine words? Indeed, this was the case. Across all ads, more men in an occupation (U.S. Department of Labor, 2007) was associated with a greater proportion of masculine words, $\beta = .17$, $t(492) = 3.74$, $p < .05$, and a marginally lower proportion of feminine words, $\beta = -.19$, $t(492) = -1.90$, $p = .06$.

Ancillary analyses. To determine precisely which words from the masculine and feminine lists were emerging within the job advertisements, the percentages for each word emerging within advertisements from each occupation were summed to create a total score reflecting the overall presence of any one word. Within the male-dominated occupations, the top ten masculine words emerging in the job advertisements were: lead*, analy*, compet*, independen*, individual*, challeng*, determin*, logic*, superior, and principle* (Table 2). Within the female-dominated occupations, the top ten masculine words emerging in the job advertisements were: lead*, compet*, individual*, independen*, challeng*, analy*, principle*, adapt*, active, and determin* (Table 3).

Table 2

Presence of Specific Masculine Words in Job Ads Within Male-Dominated Occupations

	Com- puter Program -mer	Electri- cian	Engin- eer	Mech- anic	Plum- ber	Security Guard	Across All Ads
Lead*	8.36	17.98	23.65	2.03	5.94	4.04	62.00
Analy*	27.92	2.80	21.20	0.00	0.47	0.68	53.07
Compet*	3.66	4.61	6.48	4.51	6.28	2.92	28.46
Independen*	5.96	3.22	2.29	1.22	2.83	0.50	16.02
Individual*	2.20	3.47	4.84	0.59	1.66	2.77	15.53
Challeng*	4.42	2.94	2.94	0.00	1.74	1.61	13.65
Determin*	2.67	1.22	2.37	0.00	2.57	0.19	9.02
Logic*	2.63	0.87	0.63	0.00	0.00	0.00	4.13
Superior	0.27	1.29	1.42	0.00	0.00	0.74	3.74
Principle*	0.71	0.37	1.80	0.00	0.00	0.25	3.13
Objective	0.60	0.34	1.13	0.00	0.00	0.00	2.07
Assert*	0.00	0.14	0.00	0.00	0.00	1.92	2.06
Force*	0.00	0.00	0.20	0.00	0.13	1.35	1.68
Active	0.30	0.68	0.00	0.00	0.00	0.65	1.63
Domina*	0.00	0.00	0.27	0.00	0.00	0.37	0.64
Ambitio*	0.29	0.33	0.00	0.00	0.00	0.00	0.62
Autonom*	0.00	0.32	0.00	0.00	0.00	0.00	0.32
Masculine	0.00	0.29	0.00	0.00	0.00	0.00	0.29

Table 3

Presence of Specific Masculine Words in Job Ads Within Female-Dominated Occupations

	Admin- istrative Assistant	Book Keeper	Early Childhood Educator	Nurse	Human Resource Professional	Across All Ads
Lead*	8.61	15.83	1.13	13.36	13.13	52.06
Compet*	5.29	4.16	0.00	7.56	6.07	23.08
Individual*	6.23	5.34	1.65	4.44	3.48	21.14
Independen*	7.60	4.97	1.12	5.39	0.77	19.85
Challeng*	3.06	4.98	0.00	3.14	4.47	15.65
Analy*	2.83	5.99	0.33	0.64	3.31	13.10
Principle*	0.36	0.72	0.60	1.43	0.91	4.02
Adapt*	1.95	0.74	0.00	0.00	0.9	3.59
Active	0.44	0.26	0.00	1.87	0.91	3.48
Determin*	0.26	0.00	1.75	0.00	0.89	2.90
Superior	1.51	0.82	0.00	0.00	0.25	2.58
Confident	0.00	0.30	0.89	0.00	0.26	1.45
Intellect*	0.00	0.00	1.13	0.00	0.00	1.13
Force*	0.00	0.63	0.00	0.00	0.25	0.88
Objective	0.00	0.20	0.00	0.45	0.20	0.85
Autonom*	0.00	0.00	0.00	0.59	0.00	0.59
Opinion	0.32	0.00	0.00	0.00	0.00	0.32
Domina*	0.00	0.3	0.00	0.00	0.00	0.30
Ambitio*	0.00	0.29	0.00	0.00	0.00	0.29
Boast*	0.00	0.00	0.26	0.00	0.00	0.26

Courag*	0.00	0.00	0.00	0.00	0.20	0.20
Decide	0.14	0.00	0.00	0.00	0.00	0.14

Within the female-dominated occupations, the top ten feminine words emerging within job advertisements were: child*, support*, commit*, interpersonal*, understand*, depend*, connect*, sensitiv*, compassion*, and pleasant* (Table 4). Within the male-dominated occupations, the top ten feminine words emerging within job advertisements were: support*, understand*, commit*, interpersonal*, connect*, together*, depend*, trust*, loyal*, and sensitiv* (Table 5).

Table 4

Presence of Specific Feminine Words in Job Ads Within Female-Dominated Occupations

	Admin. Assistant	Book Keeper	Early Childhood Educator	Nurse	Human Resource Professional	Across All Ads
Child*	0.00	0.18	215.97	4.74	0.00	220.89
Support*	40.08	6.28	4.42	32.34	19.79	102.97
Commit*	3.35	2.57	1.28	11.77	2.24	21.21
Interpersonal*	3.22	2.66	1.09	9.10	4.29	20.36
Understand*	2.71	4.06	0.27	0.59	2.45	10.08
Depend*	1.14	1.67	0.57	1.83	0.77	5.98
Connect*	1.10	1.35	0.00	0.39	0.71	3.55
Sensitiv*	0.59	0.55	0.41	0.00	0.57	2.12
Compassion*	0.00	0.00	0.31	1.51	0.00	1.82
Pleasant*	0.70	0.55	0.00	0.00	0.43	1.68
Together*	0.00	0.00	0.33	1.03	0.30	1.66
Trust*	0.77	0.00	0.00	0.75	0.00	1.52
Empath*	0.00	0.00	0.27	0.66	0.00	0.93
Warm*	0.00	0.00	0.26	0.36	0.00	0.62
Cheer*	0.37	0.00	0.00	0.00	0.00	0.37
Interde- penden*	0.00	0.30	0.00	0.00	0.00	0.30

Table 5

Presence of Specific Feminine Words in Job Ads Within Male-Dominated Occupations

	Com- puter Program -mer	Electri- cian	Engin- eer	Mech- anic	Plum- ber	Security Guard	Across All Ads
Support*	20.83	7.66	31.28	2.15	4.79	1.99	68.70
Understand*	9.41	1.75	6.38	0.00	0.28	0.41	18.23
Commit*	2.02	2.98	3.33	2.78	4.14	2.66	17.91
Interpersonal*	1.98	2.27	3.42	1.07	1.21	1.34	11.29
Connect*	0.00	2.12	0.92	0.00	1.06	0.00	4.10
Together*	1.21	0.35	0.72	0.00	0.00	0.00	2.28
Depend*	0.00	0.17	0.33	0.00	1.03	0.69	2.22
Trust*	0.00	0.36	0.65	0.00	0.00	0.00	1.01
Loyal*	0.00	0.43	0.00	0.44	0.00	0.00	0.87
Sensitiv*	0.00	0.00	0.66	0.00	0.00	0.19	0.85
Warm*	0.00	0.00	0.00	0.00	0.00	0.50	0.50
Pleasant*	0.00	0.00	0.00	0.00	0.00	0.49	0.49
Nurtur*	0.00	0.00	0.34	0.00	0.00	0.00	0.34
Child*	0.00	0.00	0.00	0.00	0.00	0.33	0.33
Compassion*	0.00	0.00	0.00	0.00	0.25	0.00	0.25
Honest	0.00	0.12	0.00	0.00	0.00	0.00	0.12

Study 2: Wording Differences in a University Sample of Co-op Job Ads

Study 1 provided initial evidence for the existence of a novel institutional-level factor: gendered wording in job ads. In Studies 3-6, I experimentally assessed the effects of these types of wording biases. Before doing so, however, I sought to replicate the findings using a different sample to ensure that the wording differences that emerged were not based on something idiosyncratic about the particular 11 occupations selected in Study 1. To do this, I randomly sampled job advertisements for university students that were targeted at typically male- and female-dominated University faculties/departments (e.g., Engineering versus Arts, respectively) but that were from hundreds of different employers.

The University of Waterloo has the largest cooperative education program in Canada. Students in the "coop program" alternate between terms of on-campus coursework and off-campus work placements. Each term hundreds of companies advertise thousands of student jobs that students can access through a university website. I was granted access to the text of 3640 of these job advertisements targeted at six university faculties. In contrast to Study 1's online ads, which were organized by occupation title (e.g., engineer, plumber), the coop job ads were organized by university faculty (e.g., Engineering, Arts, Applied Health Sciences). Employers could choose to target their advertisements to students in Engineering, Arts, or another faculty. There is generally a correspondence between the faculty targeted and the domain of the job; for example, jobs targeted at students in the engineering faculty are almost always within the engineering field, but the job titles themselves within that faculty varied. By categorizing ads by faculty instead of specific job titles, it ensured that the wording effects were not particular to jobs titled "Engineer" or "Computer Programmer" but reflected a general trend within the engineering or computer science fields.

Again, I expected that ads targeted at students in male-dominated faculties (i.e., from more male-dominated fields) would contain more masculine than feminine wording.

Method

Job advertisements ($N = 3640$) were randomly selected from the on campus co-operative job posting site at the University of Waterloo.⁵ Given the university's emphasis on engineering, math, and computer science programs, there were more job ads targeted to typically male-dominated faculties ($N = 3116$) than targeted to typically female-dominated faculties ($N = 524$). I was given access to six faculties. The job advertisements targeted to typically male-dominated faculties were sampled from Engineering ($N = 1682$), Math/Computer Science ($N = 920$), Science ($N = 205$), Business/Economics ($N = 209$), and Accounting/Financial Management ($N = 100$). The job ads targeted to typically female-dominated faculties were from Applied Health Studies ($N = 205$), Arts ($N = 160$), and Environmental Studies ($N = 159$).⁶ As in Study 1, each ad was coded for the percentage of masculine and feminine words contained in the ad using Linguistic software (Pennebaker, Francis, & Booth, 2007). In this sample, masculine and feminine scores were again correlated but only weakly, $r(3640) = .05, p = .001$.

Results

To test for wording differences, a 2 (Faculty advertised: male-dominated vs. female-dominated) x 2 (Wording: masculine vs. feminine wording) mixed model ANOVA, with

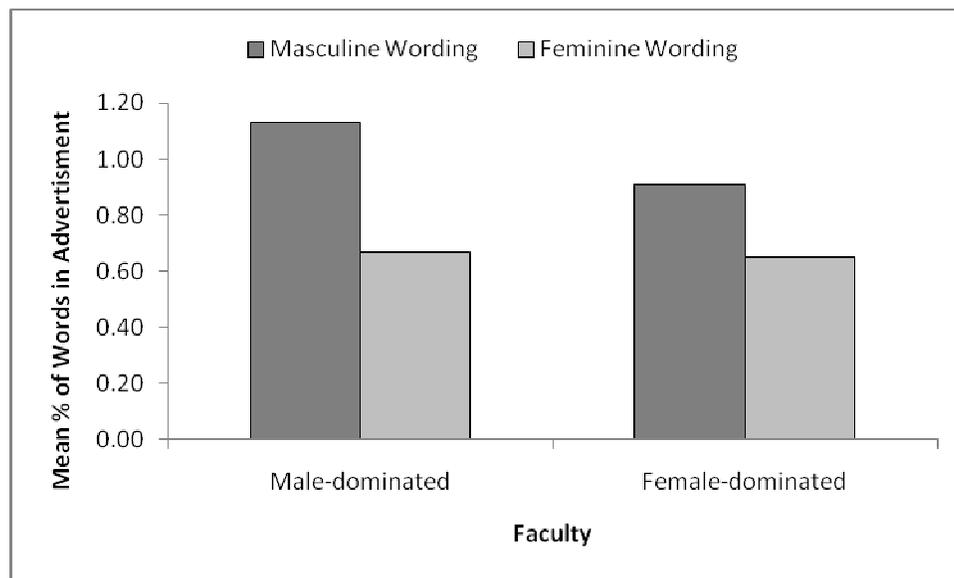
⁵ All advertisements were posted during the Fall 2009 school term. Original job advertisement text was provided in one file containing a total of 4980 advertisements. Each advertisement required transferring into its own file for coding, starting at the beginning of the file, until a total of 3640 advertisements had been processed and ready to run through the Linguistic Software Program. The original ads were listed in a random order.

⁶ Faculties/departments were determined as typically male- and female-dominated based on the gender composition of doctoral students enrolled. Male-dominated departments were those with less than 35% female doctoral students. Female-dominated departments were those with more than 50% female doctoral students (University of Waterloo Secretariat, 2002).

wording as the repeated measure was conducted. A main effect of wording emerged, $F(1, 3638) = 191.67, p < .001, \eta^2_p = .050$, indicating that ads, overall, contained more masculine words ($M = 1.02\%$) than feminine words ($M = .66\%$). A main effect of faculty also emerged, $F(1, 3638) = 18.76, p < .001, \eta^2_p = .005$, indicating there were more coded words within ads targeted at male-dominated faculties ($M = .90\%$) than ads targeted at female-dominated faculties ($M = .78\%$).

Of greater interest, once again the predicted wording x job type interaction emerged, $F(1, 3638) = 14.76, p < .001, \eta^2_p = .004$, see Figure 2.

Figure 2. Mean % of Gendered Wording as a function of Faculty in Study 2.



As expected, ads targeted at male-dominated faculties contained more masculine than feminine words, $F(1, 3115) = 531.68, p < .001, \eta^2_p = .146$. In contrast, although ads targeted at female-dominated faculties also contained more masculine than feminine wording, $F(1, 523) = 33.57, p < .001, \eta^2_p = .060$, the difference between the number of masculine and feminine words used in the ad was significantly smaller in the female- than male-dominated job ads (as indicated by the significant wording x job type interaction). Also, masculine words were more likely to emerge within ads for male-dominated faculties ($M = 1.12\%, SD = .89$) than ads for female-

dominated faculties ($M = .91\%$, $SD = .76$). There was no difference in the presence of female words across the occupations.

Ancillary analysis. To determine precisely which words from the masculine and feminine lists were emerging within the job advertisements, the percentages for each word emerging within advertisements from each faculty were summed. Within the male-dominated faculties, the top ten masculine words emerging within advertisements were: *analy**, *lead**, *challeng**, *individual**, *independen**, *compet**, *determin**, *principle**, *decision**, and *active* (Table 6). Within the female-dominated faculties, the top ten masculine words emerging within the advertisements were: *analy**, *independen**, *lead**, *individual**, *challeng**, *athlet**, *principle**, *determin**, *active*, and *decision** (Table 7).

Table 6

Presence of Specific Masculine Words in Job Ads within Male-Dominated Faculties

	Engin- neering	Math	Science	Business	Accoun- ting	Across All Job Ads
Analy*	559.44	409.56	117.23	109.52	67.91	1263.66
Lead*	347.77	209.48	28.85	40.50	19.42	646.02
Challeng*	186.55	98.45	8.09	28.78	6.26	328.13
Individual*	127.45	109.96	11.07	22.04	9.55	280.07
Independen*	144.67	81.68	12.06	27.28	9.61	275.30
Compet*	97.30	61.42	9.98	19.39	8.17	196.26
Determin*	74.16	27.81	7.98	5.46	6.46	121.90
Principle*	60.82	17.22	3.12	3.57	3.32	88.05
Decision*	29.61	23.83	4.35	7.20	2.46	67.45

Table 6

Presence of Specific Masculine Words in Job Ads within Male-Dominated Faculties

	Engin- neering	Math	Science	Business	Accoun- ting	Across All Job Ads
Active	26.36	16.17	4.28	3.25	0.23	50.29
Logic*	27.55	7.83	0.22	.75	.70	37.05
Superior	15.41	12.71	1.11	4.97	2.72	39.92
Force*	19.46	7.75	0.17	0.85	0.22	28.45
Autonom*	11.77	5.93	0.84	0.99	0.00	19.53
Ambitio*	8.24	5.34	0.77	1.50	0.26	16.11
Objective	9.36	2.90	1.58	1.26	0.00	15.10
Confident	3.73	1.80	0.00	0.42	0.47	6.42
Intellect*	2.92	2.06	0.89	0.15	0.00	6.02
Opinion	1.42	2.61	0.15	0.88	0.26	5.31
Aggress*	2.00	0.37	0.93	0.48	0.00	3.78
Athlet*	1.38	2.34	0.00	0.00	0.00	3.72
Domina*	1.79	1.33	0.00	0.00	0.00	3.12
Assert*	0.66	1.17	0.22	0.61	0.24	2.84
Adventurous	0.46	2.06	0.00	0.00	0.00	2.49
Decide	0.41	0.24	0.00	0.20	0.00	0.85
Decisive	0.57	0.00	0.08	0.00	0.00	0.65
Boast*	0.63	0.00	0.00	0.00	0.00	0.63
Hierach*	0.16	0.41	0.00	0.00	0.00	0.57

Table 6

Presence of Specific Masculine Words in Job Ads within Male-Dominated Faculties

	Engin- neering	Math	Science	Business	Accoun- ting	Across All Job Ads
Courag*	0.47	0.00	0.00	0.00	0.00	0.47

Table 7

Presence of Specific Masculine Words in Job Ads within Female-Dominated Faculties

	Applied Health Studies	Arts	Environmental Studies	Across All Job Ads
Analy*	45.02	34.62	68.37	148.01
Independen*	30.87	16.95	15.58	63.40
Lead*	27.73	23.10	10.16	60.99
Individual*	31.18	10.51	15.06	56.75
Challeng*	19.30	11.62	8.58	39.50
Compet*	30.87	16.95	15.58	63.40
Athlet*	18.61	7.40	0.00	26.01
Principle*	7.25	2.10	5.76	15.11
Determin*	6.06	3.23	4.13	13.42
Active	7.39	1.69	2.85	11.93
Decision*	4.19	1.16	3.70	9.05
Superior	1.83	2.32	1.49	5.64
Adapt*	1.04	2.21	0.56	3.81

Table 7

Presence of Specific Masculine Words in Job Ads within Female-Dominated Faculties

	Applied Health Studies	Arts	Environmental Studies	Across All Job Ads
Force*	2.49	0.89	0.00	3.38
Confident	1.45	1.03	0.85	3.33
Objective	1.22	0.17	1.35	2.74
Autonom*	0.62	1.88	0.00	2.50
Opinion	1.38	0.00	0.34	1.72
Assert*	0.00	1.41	0.00	1.41
Ambitio*	0.44	0.37	0.00	0.81
Courag*	0.51	0.00	0.00	0.51
Adventurous	0.34	0.00	0.00	0.34
Intellect*	0.00	0.29	0.00	0.29
Logic*	0.00	0.24	0.00	0.24

Within the female-dominated areas, the top ten feminine words emerging within advertisements were: support*, understand*, interpersonal*, commit*, child*, depend*, together*, cooperat*, kind, and sensitiv* (Table 8). Within the male-dominated areas, the top ten feminine words emerging within advertisements were: support*, understand*, interpersonal*, commit*, depend*, connect*, together*, trust*, cooperate*, tender* (Table 9).

Table 8

Presence of Specific Feminine Words in Job Ads within Female-Dominated Faculties

	Applied Health Studies	Arts	Environmental Studies	Across All Job Ads
Support*	54.71	38.55	54.66	147.92
Understand*	19.55	11.98	13.33	44.86
Interpersonal*	13.76	12.72	14.37	40.85
Commit*	11.04	13.42	11.65	36.11
Child*	23.61	1.49	2.98	28.08
Depend*	8.08	3.50	3.03	14.61
Together*	8.61	1.21	2.75	12.57
Cooperat*	5.15	1.93	1.09	8.17
Kind	6.40	0.72	0.00	7.12
Sensitiv*	1.79	1.25	1.12	4.16
Connect*	1.28	1.29	1.23	3.80
Trust*	0.80	0.91	0.60	2.31
Compassion*	1.09	0.00	0.00	1.09
Warm*	0.13	0.91	0.00	1.04
Nurtur*	0.00	0.57	0.24	0.81
Honest	0.56	0.00	0.00	0.56
Quiet*	0.00	0.44	0.00	0.44
Modest*	0.00	0.00	0.41	0.41

Table 8

Presence of Specific Feminine Words in Job Ads within Female-Dominated Faculties

	Applied Health Studies	Arts	Environmental Studies	Across All Job Ads
Pleasant*	0.13	0.15	0.00	0.28
Considerate	0.00	0.00	0.24	0.24
Empath*	0.00	0.17	0.00	0.17

Table 9

Presence of Specific Feminine Words in Job Ads within Male-Dominated Faculties

	Engin- neering	Math	Science	Business	Accoun- ting	Across All Job Ads
Support*	485.81	394.59	42.57	86.08	36.37	1045.42
Understand*	199.30	111.87	20.85	13.44	14.31	359.77
Interpersonal*	115.94	64.33	9.50	16.92	11.51	218.2
Commit*	79.18	78.37	6.52	13.13	4.23	181.43
Depend*	44.89	17.05	13.59	6.50	1.07	83.10
Connect*	26.18	14.47	0.79	2.36	3.62	47.42
Together*	15.86	14.87	2.54	4.19	2.13	39.59
Trust*	14.16	7.79	3.07	0.79	5.06	30.87
Cooperat*	8.05	5.66	0.43	0.93	1.89	16.96
Tender*	16.00	0.00	0.00	0.00	0.00	16.00
Child*	4.72	3.58	3.99	0.45	0.00	12.74

Sensitiv*	3.28	2.07	3.48	0.93	0.00	9.76
Kind	3.05	3.68	0.15	0.33	0.00	7.21
Nurtur*	0.47	2.15	0.48	0.36	0.00	3.46
Interdependen*	1.23	1.55	0.00	0.30	0.00	3.08
Modest*	1.86	0.69	0.00	0.23	0.00	2.78
Yield*	1.63	0.57	0.00	0.00	0.16	2.36
Loyal*	1.19	1.05	0.00	0.00	0.00	2.24
Pleasant*	1.13	0.44	0.00	0.43	0.00	2.00
Empath*	0.79	0.36	0.00	0.29	0.00	1.44
Compassion*	0.36	0.00	0.00	0.00	0.98	1.34
Honest	0.33	0.42	0.00	0.19	0.23	1.17
Warm*	0.20	0.27	0.62	0.00	0.00	1.09
Polite	0.00	0.00	0.40	0.33	0.00	0.73
Feminine	0.25	0.00	0.00	0.00	0.00	0.25
Quiet*	0.00	0.00	0.20	0.00	0.00	0.20

Discussion: Studies 1 and 2

The evidence from Studies 1-2 suggests that male-dominated occupations contain more stereotypically masculine than feminine words, compared to female-dominated occupations. But do these types of differences exert meaningful consequences on job appraisals? Does the inclusion of more masculine stereotype-linked words make a given job less appealing to a female candidate? Four laboratory experiments (Studies 3-6) tested the causal effects of gendered

wording on perceptions of gender diversity, anticipated feelings of belongingness, and ultimately, job appeal.

CHAPTER 3: THE EFFECT OF GENDERED WORDING DIFFERENCES ON INDIVIDUAL-LEVEL APPRAISALS

Study 3: Diversity Perceptions

In Study 3 participants read a series of job ads manipulated to be masculinely or femininely worded and then estimated the number of women they perceived within the various occupations. I created advertisements for male-dominated (engineer, plumber) and female-dominated (registered nurse, administrative assistant) occupations, as well as two neutral jobs (real estate agent, retail sales manager). The neutral jobs allowed for testing of gendered wording effects within occupations not as strongly associated with either gender stereotype; approximately equal numbers of women and men work in real estate and retail sales (U.S. Department of Labor, 2007). Unsurprisingly, regardless of an ad's wording, people will likely perceive fewer women within some occupations (e.g., engineering) than other occupations (e.g., nursing). I hypothesized, however, that gendered wording will have an additional effect, independent from the type of job, such that people would perceive fewer women within jobs that were masculinely worded.

Method

Forty-three Canadian-born introductory psychology students participated online (28 women, 15 men; 65% White, 21% Asian, 5% Indian, and 9% other/not listed) in exchange for course credit.

Using a within-subjects design, each participant read six job ads. Two were from each job type (male dominated, female dominated, neutral). Within each job type, one ad used more feminine wording and the other used more masculine wording. To create the ads, we used common phrases from the ads sampled in Study 1 to create a generic ad for each job (70-115

words). Each included a company description, job description, and qualifications. Wording was manipulated by selectively substituting masculine and feminine words from the lists used in Studies 1 and 2. This resulted in two versions of each ad, one masculinely-worded and one femininely-worded.⁷ For example, the masculinely-worded ad for a registered nurse stated, "We are *determined* to deliver *superior* medical treatment tailored to each *individual* patient," whereas the femininely-worded ad stated, "We are *committed* to providing top quality health care that is *sympathetic* to the needs of our patients." [Italics added]. Advertisements are included in Appendix B.

To control for any idiosyncrasies of specific jobs (e.g., a general preference for engineering over plumbing) that might be confounded with wording, we counterbalanced across individual occupations. For half of the participants, the masculinely-worded ads were plumber, retail sales manager, and registered nurse (with the three remaining ads femininely-worded). For the other half of the participants, the masculinely-worded ads were engineer, real estate agent, and administrative assistant (with the three remaining ads femininely-worded). Presentation order was also counterbalanced.

After each ad, participants completed two items assessing their perception of the number of women within each job that they read. Specifically, participants were asked, "How many women..." (a) "...work in this company?" and (b) "...work in the position being advertised?" on a Likert scale ranging from 0 (*0% women*) to 20 (*100% women*), each point labeled in 5% increments.

⁷ As a manipulation check, each ad was coded using Study 1 and 2's procedure, confirming that the six masculinely-worded ads had more masculine ($M = 8.40\%$, $SD = 1.75$) than feminine words ($M = 0.00\%$, $SD = 0.00$), $t(5) = 12.41$, $p < .05$, and the six femininely-worded ads had more feminine ($M = 6.86\%$, $SD = 1.67$) than masculine words ($M = 0.15\%$, $SD = .36$), $t(5) = 8.45$, $p < .05$.

Furthermore, after each advertisement participants were asked which factors had affected their perceptions of that advertisement; not one participant mentioned wording.

Results

To test whether masculine and feminine wording actually affects participants' perceptions of the number of women within each occupation, I conducted a 3 (Job type: male-dominated vs. neutral vs. female-dominated) x 2 (Wording: masculine vs. feminine) x 2 (Participant gender: male vs. female) repeated measure ANOVA, with job type and wording as repeated measures, and gender as a between subject factor. First, I report the effects not associated with the wording predictions. A main effect of job type emerged, $F(2, 80) = 199.32, p < .001, \eta^2 = .592$, indicating, as expected, traditionally male-dominated occupations were estimated to have fewer women ($M = 4.20, 20\%$) than neutral ($M = 11.92, 57\%$), $t(80) = 16.12, p < .001$, and female-dominated occupations ($M = 12.40, 59\%$), $t(80) = 16.50, p < .001$. Estimates of neutral and female-dominated occupations did not differ from one another. This main effect, however, was qualified by a significant occupation x gender interaction, $F(2, 80) = 5.00, p < .05, \eta^2 = .015$, (Table 10), reflecting the tendency for women to estimate greater numbers of women in neutral occupations than men.

Table 10

Perceived Gender Diversity within Occupations as a Function of Participant Sex

	Male-dominated occupations	Neutral occupations	Female-dominated occupations
Female participants	4.46 (21%) _a	13.20 (63%) _b	12.26 (58%) _b
Male participants	3.93 (19%) _a	10.64 (51%) _b	12.54 (60%) _c

n.b., Means reflect the 21-point 0-20 scale seen by participants; numbers in parentheses have been converted to a 0-100% scale for ease of interpretation. Within rows, different subscripts indicate means differ, $p < .05$, by least significant difference test.

Of most relevance, the predicted wording main effect also emerged, $F(1, 40) = 10.40$, $p = .02$, $\eta^2 = .013$. People perceived a greater number of women within the occupations advertised using feminine wording ($M = 10.10$, 48%, $SE = .33$) than occupations advertised using masculine wording ($M = 8.94$, 43%, $SE = .24$). Wording did not interact with gender or job type, $ps > .10$. Participants perceived a greater number of women within job ads that were more femininely than masculinely worded, regardless of participant gender or whether that occupation was traditionally male- or female-dominated.

Study 4: Job Appeal and Belongingness

In Studies 1 and 2 we found that male dominated jobs tend to employ more masculine wording in their recruitment materials. Study 3 demonstrated that these wording differences may not be entirely innocuous: masculine wording led people to predict that there are relatively fewer women within the relevant occupation. In Study 4, I investigated another consequence of gendered wording, one that is more crucial in order for these institutional-level biases to actually

maintain inequality: that of job appeal. I hypothesized that masculine wording may actually reduce women's interest in a job; because it signals to them that they may not belong. To test this, I used the same experimental materials as in Study 3. This time, however, rather than assessing people's perception of the number of women in a given occupation; I assessed job appeal and anticipated belongingness.

Method

One hundred and two English-fluent introductory psychology students participated online for course credit. Six were excluded (4 failed to specify their gender, 2 were outliers) leaving 96 participants (63 women, 33 men; 45% White, 31% Asian, 10% Indian, and 13% other/not listed).

Using the same job ads and within-subjects design as Study 3, each participant read six job ads. As in Study 3, presentation order was counterbalanced. There was no effect of order.

After each ad, participants completed six items assessing job appeal (e.g., “This job is appealing,” see Appendix C) and four items assessing anticipated belongingness (e.g., “I could fit in well at this company,”) on a Likert scale ranging from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*) (as for the job appeal composite ranged from .90 to .94 for each ad; as for the belongingness composite ranged from .80 to .86 for each ad). Last, after reading all the ads, participants ranked them from most appealing to least appealing. Finally, as in Study 3, after each advertisement participants were asked which factors had affected their perceptions of that advertisement; not one participant mentioned wording.

I predicted a gender x language interaction, in which women judge femininely-worded jobs more appealing than masculinely-worded jobs and men show the opposite pattern. I also tested whether gendered wording effects on job appeal may be driven, at least in part, by expected belongingness.

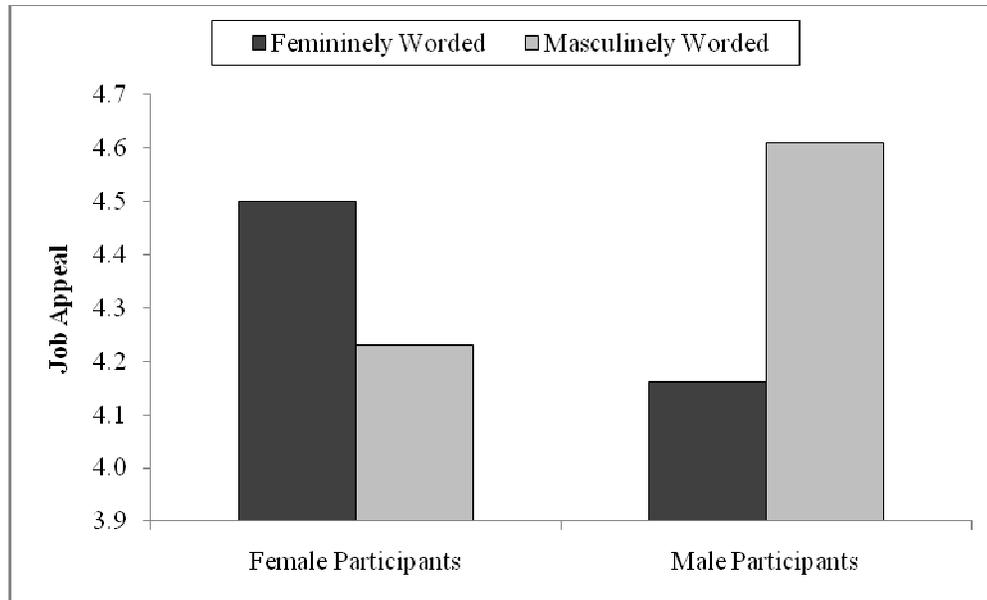
Results

Subsequent analyses used a 3 (Job type: male-dominated vs. neutral vs. female-dominated) x 2 (Wording: masculine vs. feminine) x 2 (Participant gender: male vs. female) mixed-measure ANOVA, with job type and wording as repeated measures, and gender between-subjects.

Job appeal – Likert ratings. First I report analyses that are not central to my main hypotheses. A main effect of job type emerged, $F(2, 188) = 4.57, p = .01, \eta^2_p = .046$. In general male-dominated occupations were less appealing ($M = 4.13; SE = .11$) than either neutral ($M = 4.49; SE = .11$), $t(188) = 2.59, p = .02$, or female-dominated occupations ($M = 4.49; SE = .10$), $t(188) = 2.68, p = .009$. Appeal ratings of the neutral- and female-dominated occupations did not differ from one another, $t < 1$. No other main effects emerged.

Of primary importance, the predicted wording x gender interaction emerged, $F(1, 94) = 9.70, p = .002, \eta^2_p = .094$, see Figure 3. Women found occupations that were masculinely worded less appealing ($M = 4.16; SE = .11$) than femininely worded occupations ($M = 4.5; SE = .12$), $F(1, 62) = 6.74, p = .01, \eta^2_p = .098$. Men showed the opposite pattern, $F(1, 32) = 3.58, p = .07, \eta^2_p = .10$, though it was marginally significant. Did the effect of wording vary between job types (traditionally male vs. female)? The absence of a three-way interaction ($F < 1$) suggests no; regardless of whether the occupations were traditionally more male- or female-dominated, participants found jobs most attractive when there was a match between their gender and the gendered wording used in the advertisement.

Figure 3. Job Appeal as a function of Gendered Wording and Participant Sex.



Job appeal -- relative rankings. Rankings were coded so that higher rankings indicated more appeal. A main effect of job type emerged⁸, $F(2, 180) = 9.45, p < .05, \eta^2_p = .095$. Participants ranked male-dominated occupations as less appealing ($M = 3.01; SE = .10$) than neutral ($M = 3.73; SE = .12$), $t(180) = 3.93, p < .05$, and female-dominated occupations ($M = 3.76; SE = .12$), $t(180) = 4.10, p < .05$. This effect was qualified by a significant occupation type x gender interaction, $F(2, 180) = 7.21, p < .05, \eta^2_p = .074$, indicating that women ranked male-dominated jobs ($M = 2.58; SE = .11$) lower than neutral jobs ($M = 3.97; SE = .14$), $t(118) = 6.40, p < .05$, and female-dominated jobs ($M = 3.95$), $t(118) = 6.73, p < .05$. Men ranked all three job types equally, all $ts < 1$.

Importantly, the predicted wording x gender interaction again emerged, $F(1, 90) = 8.68, p = .004, \eta^2_p = .09$. Women ranked femininely-worded jobs more favorably than masculinely-

⁸ For the relative rankings, 4 additional participants were excluded because they ranked the same job multiple times (e.g., as both first and third).

worded jobs, $F(1, 59) = 7.74, p = .007, \eta^2_p = .12$. For men there was the opposite trend, though it was not significant, $F(1, 31) = 2.43, p = .13, \eta^2_p = .073$.

Belongingness. First I report analyses not central to our main hypotheses. A main effect of job type emerged, $F(2, 188) = 4.84, p = .009, \eta^2_p = .049$, but this was qualified by a marginally significant job type x gender interaction, $F(2, 188) = 2.86, p = .06, \eta^2_p = .029$, displayed in Table 7.

Table 11

<i>Belongingness as a Function of Participant Sex and Job Type</i>			
	Male-dominated occupations	Neutral occupations	Female-dominated occupations
Female participants	3.79 _a	4.24 _b	4.41 _b
Male participants	4.10 _b	3.95 _b	4.28 _b

n.b., Within rows, different subscripts indicate means differ, $p < .05$, by least significant difference test.

Most relevant to the main hypothesis, the predicted wording x gender interaction emerged, $F(1, 94) = 6.16, p = .02, \eta^2_p = .061$. Women reported greater anticipated belongingness within occupations that were femininely- than masculinely-worded ($M_s = 4.31$ and 3.98 ; $SE_s = .11$ and $.10$, respectively), $F(1, 62) = 6.35, p = .01, \eta^2_p = .093$. For men, there was no effect of gendered wording.

Women found femininely-worded advertisements more appealing than masculinely-worded advertisements. Next we tested whether this difference in belongingness drove the observed differences in appeal. Because this is a within-subjects design, difference scores were calculated for participants' (a) job appeal (Likert ratings) and (b) anticipated belongingness by

subtracting the mean rating for femininely-worded advertisements from the mean rating for masculinely-worded advertisements (following Judd, Kenny, & McClelland, 2001). Therefore, for both difference scores a higher value indicated a preference (i.e., more appeal or more belongingness) for masculinely-worded jobs over femininely-worded jobs.

We tested mediation using Structural Equation Modeling (AMOS 16.0) and the procedures outlined in MacKinnon, Lockwood, and Williams (2004) and Shrout and Bolger (2002). Using 5000 bootstrapped samples, we calculated path estimates and bias-corrected 95% confidence intervals of the indirect effect of gender on job appeal via belongingness. Gender (dummy-coded: female = 1 and male = 0) predicted the anticipated belongingness difference score ($\beta = -.25, p = .01$), so that women anticipated less belongingness within the jobs advertised using masculine wording. This reduction in perceived belongingness predicted less job appeal ($\beta = .72, p < .001$) and was a significant indirect effect ($\beta = -.18, CI_{95} = -.04 \text{ to } -.32, p = .02$). Because the 95% confidence interval of the indirect effect did not include 0, we can be confident ($\alpha = .05$) that the women found masculinely-worded advertisements less appealing, at least in part, because of the corresponding decrease in anticipated belongingness.⁹

Discussion of Study 4

Beyond affecting people's perception of gender diversity within an occupation (Study 3), subtle variations in wording were sufficient to affect the appeal of jobs and anticipated belongingness in specific occupations. In Study 4, women were deterred from masculinely-worded jobs, finding them less appealing, compared to the same types of jobs advertised using

⁹ Mediation was also significant when tested using the Baron and Kenny (1982) procedure. A Sobel test indicated a significant indirect effect of gender on job appeal via anticipated belongingness, $z = -2.45, p = .01$

feminine wording. These effects occurred both when the jobs were evaluated independently (in the case of the job appeal Likert measure) and, more strongly, when participants explicitly compared them to one another (the job appeal ranking measure). Generally, we found the opposite pattern for men, such that they were more attracted to masculinely-worded jobs. Strikingly, the type of job participants read about (i.e., engineer, real estate broker, nurse) did not interact with wording. Across all types of jobs, participants ranked jobs most highly when they were written using wording that matched their gender.

In addition, women anticipated less belongingness in jobs that were masculinely worded, and these changes in anticipated belongingness mediated the effects on appeal. Thus this study provides evidence for the hypothesis that masculine wording is unappealing to women precisely because it conveys that they may not belong in that job.

Study 5: Job Appeal and General Skill

Studies 3 and 4 demonstrated the effects of gendered wording on job appeal and the role of gender diversity and anticipated belongingness in driving those effects. Belongingness, however, may not be the sole driver of gendered wording effects, despite its great import (Baumeister & Leary, 1995; Ryan & Deci, 2000; Walton & Cohen, 2007). One could argue that the manipulation of gendered wording changed the qualifications that people think are necessary for the job and that these differences in qualifications/skills, in turn, affected the appeal of the various occupations. Masculine wording, for example, may cue that different skills or training are required for the job, and this assessment subsequently makes the job less appealing. This alternative account would suggest that the effects of gendered wording on job appeal are not necessarily driven by psychological variables (such as anticipated belongingness) that are ultimately irrelevant to a job's objective tasks, as we have proposed here, but are instead due to

logical assessments of whether one's personal skills match the job's requirements. Thus, in the following study I test the role that perceived skills play in gendered wording effects. Here participants read the series of ads used in Studies 3 and 4. After each ad participants were asked how much skill was required for each job. Again, job appeal was assessed, but this time at the very end of the survey rather than after each individual ad.

Method

Seventy-three participants (36 women, 37 men; 55% White, 22% Asian, 12% Indian, and 11% other/not listed) were recruited from a public venue on campus ($N = 44$) and participated in exchange for a chocolate bar or participated online in exchange for course credit ($N = 29$). There were no effects of method of participation, all $ps > .11$.

Using the same job ads and within-subjects design as Studies 3 and 4, each participant read six job ads. Again, presentation order was counterbalanced. After each ad, participants completed four items assessing job skills and qualifications. Items were as follows: "How much training do you think this job requires?" on a scale ranging from 1 (*No training needed*) to 7 (*Many years of training required*); "How much skill do you think this job requires?," on a scale ranging from 1 (*No skill: anyone can do it*) to 7 (*Exceptional skill: few people can do it*); "How easy or difficult would it be for most people to perform this job?" on a scale ranging from 1 (*Very easy*) to 7 (*Exceptionally Difficult*); and "How valued in society is this job?" on a scale ranging from 1 (*Not valued at all: one of the least important jobs*) to 7 (*Exceptionally valued: one of the most important jobs*). Items were averaged to form a reliable composite of skills required (α ranged from .70 to .94 for each ad). Last, after reading all of the ads, participants were presented with a list of all ads that they had read and asked to rate them from 3 (most appealing) to -3 (least appealing). Finally, after each advertisement participants were asked

whether any other factors had affected their perceptions of that advertisement; again no one mentioned wording.

Results

Subsequent analyses used a 3 (Job Type: male vs. neutral vs. female) x 2 (Wording: masculine vs. feminine) x 2 (Participant gender: male vs. female) mixed-measure ANOVA, with occupation and wording as repeated measures, and gender as between-subject.

Skills required. Only a main effect of job type emerged, $F(2, 142) = 148.61, p = .001, \eta^2_p = .667$. People perceived male-dominated occupations ($M = 4.64; SE = .06$) as requiring more skill than female-dominated ($M = 4.29; SE = .07$), $t(142) = 4.94, p < .001$, and neutral occupations ($M = 3.89; SE = .07$), $t(142) = 15.02, p < .001$. Estimates of skill also differed between female-dominated and neutral occupations, $t(142) = 11.83, p < .001$. No effects of wording emerged, all p 's $> .22$.¹⁰

Job appeal. First we report results that are not central to our main hypothesis. A main effect of job type emerged, $F(2,140) = 6.55, p = .002, \eta^2_p = .09$. This main effect was qualified by an job type x gender interaction, $F(2,140) = 3.15, p = .05, \eta^2_p = .04$. Women rated female-dominated occupations ($M = .63; SE = .17$) as more appealing than either male-dominated ($M = -.14; SE = .22$), $t(140) = 3.17, p = .003$, or neutral occupations ($M = -.194; SE = .24$), $t(140) = 3.04, p = .004$. Men showed the opposite pattern, rating male-dominated occupations ($M = .56; SE = .19$) as more appealing than the neutral occupations ($M = -.28; SE = .25$), $t(140) = 2.56, p = .02$. For men, however, there was no significant difference in appeal ratings for male versus female dominated occupations, $t < 1$.

¹⁰ Analysis on 4-item skill measure was re-run, excluding the item, "How valued in society is this job?." Comparable results emerged. Again there was only a main effect of job type, $F(2, 142) = 125.84, p < .001$, and no effects of ad wording, all p 's $> .10$.

Most critically, the predicted wording x gender interaction on job appeal emerged, $F(1, 70) = 5.17, p = .03, \eta^2_p = .07$. Women rated femininely worded occupations ($M = .31; SE = .19$) as more appealing than masculinely worded occupations ($M = -.11; SE = .17$), $t(70) = 2.13, p = .04$. For men, there was no effect of wording on job appeal, $t = 1$.

Discussion

Replicating Study 4, in Study 5 women found masculinely worded occupations less appealing than femininely worded occupations. There was no effect of gendered wording on job appeal for the men in this sample. Notably, gendered wording did not affect people's perception of the skill required for the job. It is possible, however, that gendered wording does not affect responses to generalized skill items such as "How much skill do you think is required for the job?," but could affect specific judgments about one's own ability to succeed in the occupation. Thus in Study 6, items assessing whether people thought that they have the ability and skills to perform each job (assuming they met the education and experience requirements) were added, ensuring that anticipated belongingness remains a significant contributor even when controlling for perceived skill.

Study 6: Belongingness versus Personal Skills

Study 6 assessed the effects of gendered wording on gender diversity, belongingness, personal skills, and job appeal using a between-subjects, rather than the within-subjects design, used in Studies 3 and 4. Given my primary interest in how gendered wording affects women's perceptions of jobs, I recruited all female participants in the current study. Here, female participants read just one of two advertisements, for a real estate agent that was either masculinely or femininely worded. Next, they responded to items assessing gender diversity, belongingness, personal skill, and job appeal. The real estate agent ad was selected because it

was a job from a neutral area—one without strong gender stereotypes that might overwhelm any gendered wording effects. I expected women to rate the real estate job as less appealing when it was masculinely than femininely worded.

Method

One hundred and eighteen Canadian-born introductory psychology students participated online in exchange for course credit. Participants were all female (65% White, 15% Asian, 8% Indian, and 12% other/not listed).

Each participant read one of two real estate agent ads previously used in Studies 3-5. One version of the ad used more feminine wording and the other used more masculine wording (see Appendix B). Participants then completed our dependent measures. First was the index of gender diversity. Items were the same as those used in Study 3 (i.e., "How many women..."; (a) "...work in this company?" and (b) "...work in the position being advertised?" on a Likert scale ranging from 0 (0% women) to 20 (100% women), each point labeled in 5% increments), ($r = .44, p < .001$). Next, participants were asked items assessing their personal skill for the job (e.g., "I could perform well at this job,") ($\alpha = .81$), belongingness (e.g., "I could fit in well at this company,") ($\alpha = .76$), and job appeal (e.g., "This job is appealing,") ($\alpha = .85$) on a Likert scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*). The belongingness and appeal items were the same as those used in Study 5 (Appendix C).

Results

All of the subsequent analyses used an ANOVA with wording (feminine vs. masculine) as a between-subjects factor. As expected, women perceived fewer women within the masculinely than femininely worded real estate ads ($M_s = 14.27$ and 15.27 ; $SD_s = 1.28$ and 1.31 , respectively), $F(1,117) = 17.83, p < .001$. Critically, women rated the real estate agent job as less

appealing when it was masculinely than femininely worded ($M_s = 3.86$ and 4.34 ; $SD_s = 1.22$ and 1.67 , respectively), $F(1,117) = 5.15$, $p = .02$, and reported less belongingness when it was masculinely than femininely worded ($M_s = 3.71$ and 4.09 ; $SD_s = 1.04$ and $.89$), $F(1,117) = 4.42$, $p = .04$. Wording of the ad did not affect women's perceived level of personal skill required for the job, $F < 1$.

To test whether feelings of anticipated belongingness mediate the effect of gendered wording on job appeal a series of regressions with wording dummy coded (0 = femininely worded; 1 = masculinely worded) were run. Comparable to the analyses above, wording predicted job appeal, $\beta = -.21$, $t(117) = -2.27$, $p = .03$, and belongingness, $\beta = -.19$, $t(117) = -2.10$, $p = .04$. When wording and belongingness were both entered into the regression to predict job appeal, however, belongingness remained a strong predictor of appeal, $\beta = .66$, $t(116) = 9.41$, $p < .001$, whereas wording was reduced to non significance, $\beta = -.08$, $t < 1$. A Sobel test confirmed that belongingness explained the association between wording and job appeal, Sobel $z = 2.05$, $p = .04$.

To test whether belongingness predicts women's interest in the job independent of their perceived level of skill, we ran the same model as above only this time we controlled for skills in all steps of the mediation model. Results are presented in Figure 4.

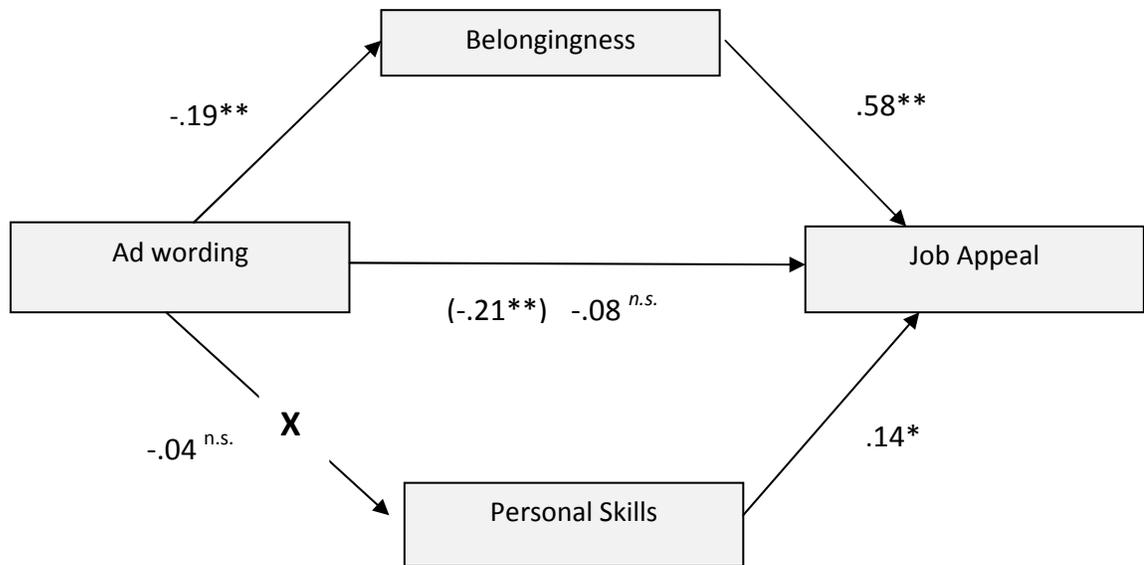


Figure 4. Ad wording was coded as 1 = masculine wording and 0 = feminine wording. ** are significant at the $p < .05$, * is marginally significant at the $p < .08$.

Belongingness explained the associated between wording and job appeal independent of women’s perceived skills for the job, $\beta = .58$, $t(115) = 7.37$, $p < .001$. In contrast, the mediating effect of skills was nonsignificant. Importantly, the perceived skill measure was marginally associated with job appeal, indicating that it was an adequately reliable measure. That is, women who reported that they had the personal skills needed for the job did find it more appealing, but their ratings of personal skills were not affected by gendered wording.

CHAPTER 4: GENERAL DISCUSSION

The results of these studies demonstrate the power of a novel institutional-level factor--gendered wording in job advertisements--to perpetuate the status quo, keeping women underrepresented in male-dominated fields. Study 1, a large-scale naturalistic study, demonstrated that ads for male-dominated jobs contained more masculine than feminine wording. Study 2 replicated this wording effect in a different context: ads posted within male-dominated faculties contained more masculine than feminine wording. Ads posted in female-dominated faculties also contained more masculine than feminine wording but, for the female-dominated areas, the wording in the ads was significantly more balanced.

Gendered wording is not innocuous. In Studies 3-6 I systematically manipulated the gendered wording of ads and observed the downstream consequences. Jobs advertised using masculine wording were seen as less gender diverse, and women found these jobs less appealing, compared to jobs advertised using feminine wording. This effect occurred, at least in part, because women anticipated less belongingness in the positions advertised using the masculinely-worded descriptions. Perhaps the best illustration is Study 6; here, belongingness mediated the association between gendered wording and job appeal. Neither people's perception of the skills required for the job more generally (Study 5) nor their appraisals of personal ability specifically (Study 6) were affected by gendered wording. Generally, we found the opposite pattern for men, such that they were more attracted to masculinely-worded jobs. The type of job participants read about (i.e., engineer, real estate broker, nurse) did not interact with the manipulations. Regardless of the type of job, participants ranked jobs most highly when they included words that matched their gender. Furthermore, not a single participant in post-experimental debriefings suggested

their responses were influenced by the wording of the advertisements or the extent to which advertisements included words that conformed to gender stereotypes.

Implications for Social-Psychological Theories of Inequality

This research documents the existence of a novel structural mechanism that reflects and reaffirms inequality, manifesting subtly through the language employed in job ads – and thus offers unique support for previous theory (e.g. System Justification Theory (SJT): Jost & Banaji, 1994; Social Dominance Theory (SDT): Sidanius & Pratto 1999). It is important not to underestimate the importance of such structural-level mechanisms. While individuals can attempt to address social inequality through voting and other lobbying practices, institutions wield much more influence over how society is structured (e.g., Pratto & Walker, 2004). As Haley and Sidanius (2005, p. 189) note:

...social hierarchies are in large part created, preserved, and recreated by social institutions, or organizations. While lone individuals can help to strengthen these hierarchies (e.g. by voting in favor of laws that disproportionately handicap low-status groups) or to attenuate them (e.g. by voting in favor of laws that instead help to level the playing field), institutions should be able to impact hierarchies to a far greater degree.

Also noteworthy is the subtlety with which structural contributors to inequality are woven into the system. The *mere presence* of masculine words such as "challenge," "lead," "boast," and "active" in ads made jobs appear less gender diverse (Study 3) and less appealing to women (Studies 4-6), even though these words comprised a minute fraction of the total words in the advertisements. Importantly, the subtlety of gendered wording makes it a particularly pernicious and potent contributor to inequality. Whereas gendered pronouns and other explicit references to the gender of a candidate can be detected by readers, gendered wording, in the way that we have studied it here, is masked. Not one participant reported picking up on gendered language when they were asked at the end of the studies what aspects of the advertisements affected their

opinions about the job. Instead, participants generally attributed their decisions to broad attitudes towards the types of careers being advertised. Although these attitudes certainly played a role in their responses, given that participants were randomly assigned to experimental condition, wording manipulations also mattered. Consistently finding certain jobs slightly more unappealing over time, without being aware of the external reasons why, may actually cause some women to believe that they are uninterested, for intrinsic reasons, in particular types of jobs. This may ultimately lead them away from occupations that they may otherwise have approached, including occupations that often afford people a high level of social status and pay.

Origins of Gendered Wording Effects

Both SJT and SDT converge on the idea that institutional-level factors that contribute to the maintenance of inequality exist. They depart, however, on their primary reasoning for *why* such contributors arise. While not necessarily in contradiction, the two approaches *focus* on or emphasize different psychological processes. Whereas SDT emphasizes processes aimed at creating and maintaining hierarchy, SJT focuses on people's general defense of status quo, regardless of what the status quo is. Given that the status quo for women is one of inequality in male-dominated occupations, it is likely that both processes contribute to the types of gendered wording effects documented here. Although not the focus of the current research, below I speculate how each process might contribute to the development of gendered wording in ads (Studies 1 and 2).

SDT states that "...human societies tend to organize as group-based social hierarchies in which at least one group enjoys greater social status and power than other groups," (Pratto, Sidanius, & Levin, 2006, p. 272) and proposes that all people support hierarchy-enhancing myths, although subordinate groups to a lesser extent. From an SDT perspective then, language

used in job ads exists to maintain and perpetuate gender hierarchy. Pushing such theorizing a step further, SDT may also suggest that people higher in SD orientation and those currently in the dominant position (i.e., men) may be more likely to write ads (or encourage others to write ads, or reward ads written) in such a way as to affirm the current hierarchy than would those low in SD orientation or in subordinate positions.

SJT, however, proposes that people--regardless of their position in the social hierarchy--act in ways that maintain the status quo. From this perspective, gendered wording differences emerging in ads are a reflection of the status quo and the current numbers of men or women already within these occupations. In this way, the current social landscape acts as a foundation that seeps out into their construction of the advertisement – regardless of the dominance motivations of the ad writer or those supervising the ad writer.¹¹ Previous SJT work has demonstrated that heightening people's motivation to justify their socio-political systems makes people more likely to engage in system justifying tendencies (Jost, Kivetz, Rubini, Mosso, & Guermendi, 2005; Kay et al., 2009; Kay, Jost, & Young, 2005; Lau, Kay, & Spencer, 2008; Ullrich & Cohrs, 2007). Similarly, if SJT motivations are underlying the existence of gendered wording then manipulations that increase system justification motivations should cause people to write ads that are more strongly reflective of the status quo. Moreover, manipulating people's perceptions of the status quo (i.e., providing them with information that there are relatively few or many women in a particular occupation) should also affect the types of advertisements that they write, especially under conditions of high SJ motivation.

¹¹ Schmader, Whitehead, and Wysocki (2007) examined how the language used in recommendation letters varied as a function of the *applicant's* gender. However, they had too few female letter-writers to address whether language also varied as a function of the *writer's* gender.

Thus far, I discussed two motivations that may produce gendered wording in job advertisements. Certainly gendered wording may be produced by other psychological mechanisms that may or may not be driven by broader SD or SJ motivations. For example, ad writers may simply have in mind a prototypical image of the ideal employee when they are writing the ads, and this prototype is influenced by whatever gender dominates the field. Once a particular prototype is brought to mind, associations with the prototype (i.e., men), for instance, may “spill out” into the writing of the ad. Alternatively, a linguistic culture may develop within a field depending on which gender dominates the field, and this linguistic culture may influence how the ads are written. Another possibility is that gendered wording in ads might result, in part, from the gender of the authors of the ads (e.g., men write engineering ads; women write nursing ads). Gender differences in men’s and women’s everyday linguistic style (e.g., Newman, Groom, Handelman, & Pennebaker, 2008) may be reflected in the written ads, such that females write ads using more feminine styles of language and men write ads using more masculine styles of language. Although, this latter possibility seems unlikely given that many ad writers are females within Human Resource departments.

To be clear, I think it is unlikely that gendered wording is deliberately infused in ads. Unlike the ads of the 1960s where employers were specifically seeking men, today many companies have explicit directives, and genuine goals, to gender diversify their workplaces. Thus, I suspect that most, if not all, gendered wording emerges through cognitive and motivational biases that operate outside of people’s awareness. Direct investigations of the processes underlying the origins of gendered wording is not only of theoretical importance, but also has applied implications; such work can highlight where to focus an intervention to eliminate the presence of gendered wording, if that is what one hopes to do.

The origins of gendered wording in real job advertisements brings up another important issue: Are gendered wording differences in job advertisements revealing gender “bias,” or do wording differences serve a functional purpose reflecting true task differences between the male- and female-dominated occupations. Social Role Theory (SRT; Eagly, 1987) posits that gender stereotypes arise from actual differences in role based behavior. For example, raising children requires nurturance and empathy whereas working outside the home requires more agentic traits. Engaging in the role of homemaker and breadwinner, respectively, women and men came to be associated with such traits. Moreover, as a result of these “original” gender roles, it is theorized that people enter occupational areas typically associated with their traditional gender role (i.e. women in nursing, or men firefighting). Following this logic, it is possible that gendered words in job ads are not arbitrarily associated with roles because of which sex predominates as the current work suggests, but that agentic and communal traits are actually required of roles that men and women happen to be “assigned” to; and that agency and communality may be integral to different jobs. One could argue then that jobs may be advertised using different words regardless of the sex of the typical job-holder.

Future work should investigate whether sex-ratio differences, unconfounded with task, lead to gendered wording differences in ads. For example, matching male- and female-dominated occupations on tasks, or controlling for job task similarity (using indices such as the US Bureau of Labor Statistics Standard Occupational Codes), could tease apart whether gendered wording is emerging because of true task differences between occupations or whether the ratio of men to women is driving the emergence of gendered wording. Also, an archival study of how gendered wording within a particular occupational domain has changed over the years as more men enter the occupation may be another fruitful direction. If the gender ratio of

the occupation predicts masculine wording within the job ads--with tasks kept constant--then it would provide more evidence for the idea that gendered wording is not simply reflecting task differences between the jobs, but perhaps arises from a rationalization process whereby people describe male-dominated occupations using more masculine themed words to help explain the predominance of men in the occupation (see Hoffman & Hurst, 1990 for a similar argument).

Nonetheless, regardless of whether gendered wording differences are functional (reflecting true task differences between male- and female- dominated jobs) or biased, it does not change the empirical fact that male-dominated jobs tend to be described using stereotypically masculine words, and that the mere presence of masculine wording dissuades women's interest in masculinely worded occupations. Thus, even though the "biased" nature of gendered wording within real job advertisements may still be up for debate, the consequence of such wording is not. Employers are seeking the "ideal" candidate. Unfortunately gendered wording is biased because masculinely worded job advertisements pull for male applicants; only half of the qualified applicant pool.

Future Directions and Limitations

Identifying precisely how institutional-level factors of the type that I am interested in here affect the appeal of certain jobs is essential for understanding why women continue to be underrepresented in traditionally male-dominated fields and for designing initiatives that will increase gender diversity. More broadly, it may also inform other groups within other domains (such as universities) that would like to diversify their membership. For example, the wording of some recruitment materials, such as university mission statements, may tacitly appeal to people of different socio-economic status (SES). More specifically, individualism-collectivism -- the degree to which a culture facilitates the needs of, and values an autonomous and unique self over

the group -- may be one salient dimension that may differentially impact university appeal to those with high and low SES. In line with Oyserman and Markus' (1998) proposition that individualism is a characteristic of "North American and European, but particularly white, urban, middle-class..." (p. 113) cultures, words associated with individualism (such as "individual" and "uniqueness") may be more likely to emerge within the mission statements of high status or private universities, than within the mission statements of lower status or public universities. Just as gendered wording differentially affects men's and women's appeal of particular occupations, highly individualistic wording within the mission statements of high-status private universities may subtly cue that members of lower SES groups do not belong and discourage them from applying, apart from other tangible reasons. Thus our focus on the use of language to perpetuate the status quo has theoretical significance for a host of other domains, not only issues of gender and occupations. Future work would do well to explore how language inadvertently serves to maintain existing social arrangements across a number of domains.

There are a few limitations of the current work that are worth noting. Students from a major Canadian University, though from a broad range of academic majors, were participants in Studies 3-6. Although in one sense university students are relevant participants insofar as they do not currently have a job and are all anticipating applying for one in the near future. One may wonder whether the current findings would generalize to other demographic groups or, more importantly, to "active" job applicants. Active job applicants, for instance, may be more highly committed, or motivated, to get a job in a particular occupation than our university sample. On the one hand, a high level of motivation and commitment could make people more attentive to wording cues, in an effort to find the "perfect" job. On the other hand, strong motivation and commitment to a specific occupation could cause people to apply indiscriminately to jobs in an

attempt to ensure that they get at least some job in the field, thus reducing the strength of gendered wording on people's appeal judgments. Elucidating such moderators of gendered wording effects is a fruitful future direction.

It is also important to note the nature of our dependent variable. Job appeal was assessed with a six-item measure, showing good reliability across studies. This measure was reliable for both men and women, and can be taken as face valid index of the extent to which a job is appealing. Nonetheless, future work would do well to include a true behavioral measure.

Last, throughout this paper, I have suggested that the *mere presence* of gendered wording affects a job's appeal—regardless of the location of the wording within the advertisement. This does not, however, preclude the possibility that the location of gendered wording emerges in a systematic way within ads. It is possible that gendered wording is more often used in company descriptions than qualifications section of an ad, or vice versa (although the latter possibility is unlikely given the nature of the words emerging within the ads of Studies 1 and 2). Or perhaps gendered words have their most potent effects when they emerge in the first few sentences of the ad rather than near the end. The ratio of masculine to feminine words present in an advertisement may also be important. In the current work ads were constructed so that gendered wording was orthogonal (i.e., ads were either high on masculine words and low on feminine words, or vice versa), the effect of more balanced wording (i.e., ads that are high or low on both masculine and feminine wording) remains to be investigated. These types of issues are not only interesting from a theoretical point of view (i.e., illuminating the specificity and potency of priming effects), but also are essential for making informed policy decisions.

Concluding Remarks

Social inequality can be maintained and perpetuated in many ways. Individuals and groups hold ideologies, belief systems, and stereotypes that justify relative disadvantage, even in instances in which that disadvantage is arrived at unfairly or haphazardly (Napier, Mandisodza, Andersen, & Jost, 2006). But individuals need not always be the driving force. Inequalities can also be reinforced via institutional-level factors – ones that influence individual judgments and preferences in such ways that serve to preserve the status quo. Although these institutional-level features may be less salient or seemingly direct than particular justifying ideologies, they are likely just as important in stagnating social change (Haley & Sidanius, 2005). The current research highlights one such institutional-level feature and demonstrates its potential impact on judgments relevant to the maintenance of inequality. In doing so, it provides useful advances for our understanding of gender inequality in the workforce. But beyond that, I hope it highlights the power of looking to features of the social structure--especially those that may easily go unnoticed--in helping social psychologists uncover the ways in which social inequality is created, reinforced, and ultimately maintained.

Appendix A: List of Masculine and Feminine Words Coded

Masculine Words

Active
Adapt*
Adventurous
Aggress*
Ambitio*
Analy*
Assert*
Athlet*
Autonom*
Boast*
Challeng*
Compet*
Confident
Courag*
Decide
Decisive
Decision*
Determin*
Domina*
Force*
Greedy
Headstrong
Hierach*
Hostil*
Implusive
Independen*
Individual*
Intellect*
Lead*
Logic*
Masculine
Objective
Opinion
Outspoken
Persist
Principle*
Reckless
Stubbourn
Superior
Self-confiden*

Feminine Words

Affectionate
Child*
Cheer*
Commit*
Communal
Compassion*
Connect*
Considerate
Cooperat*
Depend*
Emotiona*
Empath*
Feminine
Flatterable
Gentle
Honest
Interpersonal*
Interdependen*
Kind
Kinship
Loyal*
Modest*
Nag
Nurtur*
Pleasant*
Polite
Quiet*
Respon*
Sensitiv*
Submissive
Support*
Sympath*
Tender*
Together*
Trust*
Understand*
Warm*
Whin*
Yield*

Self-sufficien*
Self-relian*

Appendix B: Job Advertisements used in Studies 3-6

Engineer Feminine

Company Description

- We are a community of engineers who have effective relationships with many satisfied clients.
- We are committed to understanding the engineering sector intimately.

Qualifications

- Proficient oral and written communication skills.
- Collaborates well, in a team environment.
- Sensitive to clients' needs, can develop warm client relationships.
- Bachelor of Engineering degree or higher from recognized university.
- Registered as a Professional Engineer.

Responsibilities

- Provide general support to project teams in a manner complimentary to the company.
- Help clients with construction activities.
- Create quality engineering designs.

Plumber Feminine

Company Description

- We are a committed provider of dependable plumbing solutions.
- We have many loyal clients, and deliver honest, personal service.

Qualifications

- Dependable, with demonstrated commitment to client service.
- Can interpret blueprints and schematics.
- Licensed/certified plumber from recognized community college or related program.
- Previous experience an asset.

Responsibilities

- Service our clients' plumbing systems.
- Respond to plumbing problems and find innovative repair solutions.
- Collaborate on new building projects, providing plumbing advice.

Engineer Masculine

Company Description

- We are a dominant engineering firm that boasts many leading clients.
- We are determined to stand apart from the competition.

Qualifications

- Strong communication and influencing skills.
- Ability to perform individually in a competitive environment.
- Superior ability to satisfy customers and manage company's association with them.
- Bachelor of Engineering degree or higher from recognized university.
- Registered as a Professional Engineer.

Responsibilities

- Direct project groups to manage project progress and ensure accurate task control.
- Determine compliance with client's objectives.
- Create quality engineering designs.

Plumber Masculine

Company Description

- We are determined company that delivers superior plumbing.
- We are proud of our success, and boast an impressive record.

Qualifications

- Self-reliant, with demonstrated ability to perform tasks independently.
- Ability to analyze blueprints and schematics.
- Licensed/certified plumber from recognized community college or related program.
- Previous experience an asset.

Responsibilities

- Maintain customers' plumbing systems.
- Analyze problems logically and troubleshoot to determine needed repairs.
- Deliver plumbing expertise on new building projects.

Appendix B (continued)

Retail Sales Manager Feminine

Company Description

- Our hope is to be the best employer in clothing retail by providing a pleasant and rewarding employment experience.
- We nurture and support our employees, expecting that they will become committed to their chosen career.

Qualifications

- Full-time, flexible availability.
- Cheerful, with excellent communication skills.
- Capable of working with minimal supervision.

Responsibilities

- Can motivate others to reach their potential as employees.
- You will be the head of our fast-paced store, with further opportunities for career development.
- You'll develop interpersonal skills and understanding of business.
- Be a role model for your store, representing our exclusive brand.

Retail Sales Manager Masculine

Company Description

- Our ambition is to be the best employer in clothing retail by delivering a rewarding employment experience.
- We will challenge our employees to be proud of their chosen career.

Qualifications

- Full-time, variable availability.
- Strong communication skills.
- Ability to work independently.

Responsibilities

- Can challenge others to reach their potential as employees.
- You will be the boss of our fast-paced store, with further opportunities career advancement.
- You'll develop leadership skills and learn business principles.
- Be a leader in your store, representing our exclusive brand.

Real Estate Agent Feminine

Company Description

- Join our sales community! Even if you have no previous experience, we will help nurture and develop your sales talents.
- We support our employees with an excellent compensation package.

Qualifications

- As the ideal candidate, you will have a pleasant attitude, dependable judgment, and be attentive to details.
- Excellent communicator.
- Bilingualism is an asset.
- Previous background in real estate an asset, but not required.

Responsibilities

- Connect with potential clients; being sensitive to their needs, introduce them to properties.
- Serve as the connection between your client and each property's seller.
- Understand real estate markets to establish appropriate selling prices for properties.

Real Estate Agent Masculine

Company Description

- Take our sales challenge! Even if you have no previous experience, we will facilitate the acquisition of your sales abilities.
- We boast a competitive compensation package.

Qualifications

- The superior candidate will have a self-confident attitude, decisive judgment, and be detail-oriented.
- Strong communicator.
- Bilingualism is an asset.
- Previous background in real estate an asset, but not required.

Responsibilities

- Recruit potential buyers; determine their interests and lead them to properties.
- Negotiate for your buyer with each property's seller.
- Analyze real estate markets to determine appropriate selling prices for properties.

Nurse Feminine

Company Description

- Our hospital serves a community of approximately 100,000 people.
- We are committed to provide top quality health care that considers the best needs of our patients.

Qualifications

- Demonstrated ability to respond appropriately emergencies.
- Caring and compassionate professional with a passion for the profession.
- Dependable and willing to work shift work.
- Bachelor of Nursing from recognized university.
- Current license with College of Nurses in Ontario as a Registered Nurse.

Responsibilities

- As part of a team, provide health care services to the wide variety of community members who come for care.
- Consider patient symptoms in order to select appropriate treatment and support.
- Collaborate with other care providers, but also able to work independently.

Administrative Assistant Feminine

Company Description

- We are a corporate team dedicated to supporting our financial clients.
- Our company is devoted to providing a great work/life balance and compensation package.

Qualifications

- Experience in providing administrative support services to a team of senior management and understand office organization.
- Polite; sensitive to needs of other employees and clients.
- Dependable and responsible.
- Capable computer skills.

Responsibilities

- Support office team and assist with departmental procedures so that work progresses more efficiently.
- Connect and develop relationships with a variety of clients (e.g., other businesses).
- Coordinate incoming and outgoing shipments.

Nurse Masculine

Company Description

- The hospital is located within a city of approximately 100,000 people.
- We are determined to deliver superior medical treatment tailored to each individual patient.

Qualifications

- Demonstrated ability to act decisively in emergencies.
- Principled and self-reliant professional with dedication to the profession.
- Able to work shift work.
- Bachelor of Nursing from recognized university.
- Current license with College of Nurses in Ontario as a Registered Nurse.

Responsibilities

- In keeping with the hospital's hierarchy, administer medical interventions to the wide variety of individuals who require treatment.
- Analyze patient symptoms to determine appropriate interventions.
- Be self-reliant and able work independently, but also able to work on a team.

Administrative Assistant Masculine

Company Description

- Our organization works to offer every possible advantage to our banking customers.
- The company boasts impressive salaries, allowing our employees with financial independence.

Qualifications

- Ability to deal with multiple senior staff in a demanding environment and navigate office hierarchy.
- Civil personality; aware of other workers' and customers' requirements.
- Independent and self-reliant.
- Strong computer skills.

Responsibilities

- Organize and monitor office tasks and processes so that work progresses more efficiently.
- Able to interface with external parties (e.g., other businesses).
- Control incoming and outgoing shipments.

Appendix C: Dependent Measures used in Studies 3-6

Job appeal

- This job is appealing.
- I think I could enjoy this job.
- This is not a job I would want. (R)
- This company would be a good employer.
- This job looks interesting.
- This company seems like a great place to work.

Belongingness

- I could fit in well at this company.
- My values and this company's values are similar.
- I'm similar to the people who work in this career.
- The type of people who would apply for this job are very different from me. (R)

Skills

- I could perform well at this job.
 - If I had this job I would definitely succeed at it.
 - If I had this job there is a good chance I would fail at it. (R)
-

References

- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497-529.
- Bartz, J. A., & Lydon, J. E. (2004). Close relationships and the working self-concept: Implicit and explicit effects of priming attachment on agency and communion. *Personality and Social Psychology Bulletin, 30*, 1389-1401.
- Bem, S. (1993). *The Lens of Gender: Transforming the Debate on Sexual Inequality*. New Haven: Yale University Press.
- Bem, S. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology, 42*, 155-162.
- Bem, S. J., & Bem, D. J. (1973) Does sex-biased job advertising "aid and abet" sex discrimination? *Journal of Applied Social Psychology, 3*, 6-18.
- Boroditsky, L. (2001). Does language shape thought? Mandarin and English speakers' conceptions of time. *Cognitive Psychology, 43*, 1-22.
- Brownlow, S., Rosamond, J. A., & Parker, J. A. (2003). Gender-linked behavior in television interviews. *Sex Roles, 49*, 121-132.
- Carli, L. L. (1990). Gender, language, and influence. *Journal of Personality and Social Psychology, 59*, 941-951.
- Catalyst (2008a). *U.S. women in business*. Retrieved October 28, 2008, from <http://www.catalyst.org/publication/132/us-women-in-business>.
- Catalyst (2008b). *Women in the sciences*. Retrieved October 28, 2008, from http://www.catalyst.org/file/205/qt_women_in_sciences.pdf.

- Cheryan, S., Plaut, V. C., Davis, P. G., & Steele, C. M. (2009). Ambient belonging: How stereotypical cues impact gender participation in computer science. *Journal of Personality and Social Psychology, 97*, 1045-1060.
- Cuddy, A. J. C., Fiske, S. T., & Glick, P. (2004). When professionals become mothers, warmth doesn't cut the ice. *Journal of Social Issues, 60*, 701-718.
- Davies, P. G., Spencer, S. J., Quinn, D. M., & Gerhardstein, R. (2002). Consuming images: How television commercials that elicit stereotype threat can restrain women academically and professionally. *Personality and Social Psychology Bulletin, 28*, 1615-1628.
- Deutsch, M. (2006). A framework for thinking about oppression and its change. *Social Justice Research, 19*, 7-41.
- Eagly, A. H., & Karau, S. J. (1991). Gender and the emergence of leaders: A meta-analysis. *Journal of Personality and Social Psychology, 60*, 685-710.
- Engineers Canada, (2010). *Women in Engineering*. Retrieved March 30, 2010, from http://www.engineerscanada.ca/e/pr_women.cfm.
- Fitzsimons, G. M., & Kay, A. C. (2004). Language and interpersonal cognition: Causal effects of variations in pronoun usage on perceptions of closeness. *Personality and Social Psychology Bulletin, 30*, 547-557.
- Fiske, S. T., Bersoff, D. N., Borgida, E., Deaux, K., & Heilman, M. E. (1991). Social science research on trial: Use of sex stereotyping research in Price Waterhouse v. Hopkins. *American Psychologist, 46*, 1049-1060.
- Fiske, S. T., Xu, J., Cuddy, A. C., & Glick, P. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology, 82*, 878-902.

- Glick, P., & Fiske, S. T. (1996). The ambivalent sexism inventory: Differentiating hostile and benevolent sexism. *Journal of Personality and Social Psychology, 70*, 491-512.
- Glick, P., & Fiske, S. T. (2001a). An ambivalent alliance: Hostile and benevolent sexism as complementary justifications for gender inequality. *American Psychologist, 56*, 109-118.
- Glick, P., & Fiske, S. T. (2001b). Ambivalent stereotypes as legitimizing ideologies: Differentiating paternalistic and envious prejudice. In J. T. Jost & B. Major (Eds.), *The psychology of legitimacy: Emerging perspectives on ideology, justice, and intergroup relations* (pp. 278-306). New York, NY, US: Cambridge University Press.
- Haas, A. (1979). Male and female spoken language differences: Stereotypes and evidence. *Psychological Bulletin, 86*, 616-626.
- Haley, H., & Sidanius, J. (2005). Person-organization congruence and the maintenance of group-based social hierarchy: A Social Dominance perspective. *Group Processes and Intergroup Relations, 8*, 187-203.
- Heilman, M. E. (1983). Sex bias in work settings: The Lack of Fit model. *Research in Organizational Behavior, 5*, 269-298.
- Holmes, M., & O'Connell, S. (2007). Leaks in the pipeline. *Nature, 446*, 346.
- Hoffman, C., & Hurst, N. (1990). Gender stereotypes: Perception or rationalization? *Journal of Personality and Social Psychology, 58*, 197-208.
- Hoffman, C., & Tschir, M. A. (1990). Interpersonal verbs and dispositional adjectives: The psychology of causality embodied in language. *Journal of Personality and Social Psychology, 58*, 765-778.
- Jost, J. T., & Banaji, M. R. (1994). The role of stereotyping in system-justification and the production of false consciousness. *British Journal of Social Psychology, 33*, 1-27.

- Jost, J. T., Kivetz, Y., Rubini, M., Guermandi, G., & Mosso, C. (2005). System-justifying functions of complementary regional and ethnic stereotypes: Cross-national evidence. *Social Justice Research, 18*, 305-333.
- Judd, C. M., Kenny, D. A., & McClelland, G. H. (2001). Estimating and testing mediation and moderation in within-subject designs. *Psychological Methods, 6*, 115-134.
- Kay, A. C., Czapliński, S., & Jost, J. T. (2009). Left-right ideological differences in system justification following exposure to complementary versus noncomplementary stereotype exemplars. *European Journal of Social Psychology, 39*, 290-298.
- Kay, A. C., Gaucher, D., Peach, J. M., Laurin, K., Friesen, J., Zanna, M. P., & Spencer, S. J. (2009). The power of the status quo: Direct evidence for a motivation to see the way things are as the way they should be. *Journal of Personality and Social Psychology, 97*, 421-434.
- Kay, A. C., Jost, J. T., Mandisodza, A. N., Sherman, S. J., Petrocelli, J. V., Johnson, A. L. (2007). Panglossian ideology in the service of system justification: How complementary stereotypes help us to rationalize inequality. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 39, pp. 305-358). San Diego, CA, US: Elsevier.
- Kay, A. C., Jost, J. T., & Young, S. (2005). Victim derogation and victim enhancement as alternate routes to system justification. *Psychological Science, 16*, 240-246.
- Kay, A. C., & Zanna, M. P. (2009). A contextual analysis of the system justification motive and its societal consequences. In J. T. Jost, A. C. Kay & H. Thorisdottir (Eds.), *Social and psychological bases of ideology and system justification* (pp. 158-181). New York, NY, US: Oxford University Press.

- Kervyn, N., Yzerbyt, V. Y., Judd, C. M., Nunes, A. (2009). A question of compensation: The social life of the fundamental dimensions of social perception. *Journal of Personality and Social Psychology, 96*, 828-842.
- Lakoff, R. T. (1975). *Language and women's place*. New York: Harper Colophon Books.
- Lau, G. P., Kay, A. C., & Spencer, S. J. (2008). Loving those who justify inequality: The effects of system threat on attraction to women who embody benevolent sexist ideals. *Psychological Science, 19*, 20-21.
- Leaper, C., & Ayres, M. M. (2007). A meta-analytic review of gender variations in adults' language use: Talkativeness, affiliative speech, and assertive speech. *Personality and Social Psychology Review, 11*, 328-363.
- Maass, A. (1999). Linguistic intergroup bias: Stereotype perpetuation through language. In M. P. Zanna, M. P. (Ed.), *Advances in experimental social psychology* (Vol. 31, pp. 79-121). San Diego, CA: Academic Press.
- Maass, A., Salvi, D., Arcuri, L., & Semin, G. (1989). Language use in intergroup contexts: The linguistic intergroup bias. *Journal of Personality and Social Psychology, 57*, 981-993.
- MacKinnon, D., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the product and resampling methods. *Multivariate Behavioral Research, 39*, 99-128.
- Murphy, M.C., Steele, C. M., & Gross, J. J. (2007). How situational cues affect women in math, science, and engineering. *Psychological Science, 18*, 879-885.
- Napier, J. L., Mandisodza, A. N., Andersen, S. M., & Jost, J. T. (2006). System justification in responding to the poor and displaced in the aftermath of Hurricane Katrina. *Analyses of Social Issues and Public Policy, 6*, 57-73.

- Newcombe, N., & Arnkoff, D. B. (1979). Effects of speech style and sex of speaker on person perception. *Journal of Personality and Social Psychology*, 37, 1293-1303.
- Newman, M. L., Groom, C. J., Handelman, L. D., & Pennebaker, J. W. (2008). Gender differences in language use: An analysis of 14,000 text samples. *Discourse Processes*, 45, 211-236.
- Oyserman, D., & Markus, H.R. (1998). Self as a social representation. In Uwe Flick (Ed.), *The Psychology of the Social*. United Kingdom: Cambridge University Press.
- Pedriana, N. & Abraham, A. (2006). Now You See Them, Now You Don't: The Legal Field and Newspaper Desegregation of Sex-Segregated Help Wanted Ads 1965–75. *Law and Social Inquiry*, 31, 905-938.
- Pennebaker, J. W., Francis, M. E., & Booth, R. J. (2007). Linguistic Inquiry and Word Count (LIWC): LIWC2007. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Pennebaker, J. W., Mehl, M. R., & Niederhoffer, K. G. (2003). Psychological aspects of natural language use: Our words, our selves. *Annual Review of Psychology*, 54, 547-577.
- Phelan, J. E., Moss-Racusin, C. A., & Rudman, L. A. (2008). Competent yet out in the cold: Shifting criteria for hiring reflect backlash toward agentic women. *Psychology of Women Quarterly*, 32, 406-413.
- Pratto, F., Sidanius, J., & Levin, S. (2006). Social dominance theory and the dynamics of intergroup relations: Taking stock and looking forward. *European Review of Social Psychology*, 17, 271-320.
- Pratto, F., & Walker, A. (2004). The bases of gendered power. In A. H. Eagly, A. E. Beall, & R. J. Sternberg (Eds.), *The psychology of gender* (2nd ed., pp. 242-268). New York, NY, US: Guilford.

- Purdie-Vaughns, V., Steele, C. M., Davies, P. G., Ditlmann, R., & Crosby, J. R. (2008). Social identity contingencies: How diversity cues signal threat or safety for African Americans in mainstream institutions. *Journal of Personality and Social Psychology, 94*, 615-630.
- Reitsma-van Rooijen, M, Semin, G. R., & van Leeuwen, E. (2007). The effect of linguistic abstraction on interpersonal distance. *European Journal of Social Psychology, 37*, 817-823.
- Rudman, L. A. (1998). Self-promotion as a risk factor for women: The costs and benefits of counterstereotypical impression management. *Journal of Personality and Social Psychology, 74*, 629-645.
- Rudman, L. A., & Glick, P. (1999). Feminized management and backlash toward agentic women: The hidden costs to women of a kinder, gentler image of middle managers. *Journal of Personality and Social Psychology, 77*, 1004-1010.
- Rudman, L. A., & Glick, P. (2001). Prescriptive gender stereotypes and backlash toward agentic women. *Journal of Social Issues, 57*, 743-762.
- Rudman, L. A. & Kilianski, S. T. (2000). Implicit and explicit attitudes toward female authority. *Personality and Social Psychology Bulletin, 26*, 1315-1328.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68-78.
- Schmader, T., Whitehead, J., & Wysocki, V. H. (2007). A linguistic comparison of letters of recommendation for male and female chemistry and biochemistry job applicants. *Sex Roles, 57*, 509-514.

- Schullo, S. A., & Alperson, B. L. (1984). Interpersonal phenomenology as a function of sexual orientation, sex, sentiment, and trait categories in long-term dyadic relationships. *Journal of Personality and Social Psychology, 47*, 983-1002.
- Sidanius, J. & Pratto F. (1999). *Social dominance: An intergroup theory of social hierarchy and oppression*. New York, NY, US: Cambridge University Press.
- Shrout, E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods, 7*, 422-445.
- Tesch, B. J., Wood, H. M., Helwig, A.L., & Ann, B. N. (1995). Promotion of women physicians in academic medicine: Glass ceiling or sticky floor? *Journal of the American Medical Association, 273*, 1022-1025.
- Ullrich, J., & Cohrs, J. C. (2007). Terrorism salience increases system justification: Experimental evidence. *Social Justice Research, 20*, 117-139.
- United States Department of Labor (2007). *Median weekly earnings of full-time wage and salary workers by detailed occupation and sex*. Retrieved October 23, 2008, from <http://www.bls.gov/cps/cpsaat39.pdf>.
- University of Waterloo Secretariat (2002). *Welcoming women faculty: The report of the provost's task force on female faculty recruitment*. Retrieved December 12, 2009, from <http://secretariat.uwaterloo.ca/offical Documents/ffr.finalreport.10June02.pdf>.
- Walton, G. M., & Cohen, G. L. (2007). A question of belonging: Race, social fit, and achievement. *Journal of Personality and Social Psychology, 92*, 82-96.